Who Makes the Choice? The Impact of Choice on Preschool Children's Sharing Behavior and Feelings

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Abstract

This study investigates the impact of choice on preschool children's sharing behavior and feelings. Experiment 1 randomly assigned children to three conditions (child's own choice, mother's choice, and experimenter's choice regarding whether to share stickers), measuring children's subjective feelings and sharing behavior in a novel context; mothers completed a questionnaire assessing mother-child relationship quality. Results revealed that mother-child relationship quality moderated the effect of choice condition on children's sharing-related feelings. Experiment 2 employed a similar methodology to examine whether providing a reasonable rationale during maternal choice influenced children's sharing. It was found that although children complied with their mother's choice in the immediate context, they demonstrated greater sharing behavior in a subsequent novel context when the mother provided a reasonable rationale compared to when no rationale was given. These findings suggest that maternal choice does not necessarily diminish sharing behavior and feelings, and that a positive mother-child relationship and reasonable rationales serve a protective role for children's sharing motivation when mothers make choices.

Full Text

Who Makes the Choice? The Influence of Choice on Preschoolers' Sharing Behaviors and Feelings

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Abstract

This study investigates the impact of choice on preschool children's sharing behavior and feelings. In Experiment 1, children were randomly assigned to three conditions (child's own choice, mother's choice, and experimenter's choice regarding whether to share stickers), and we measured children's subjective feelings and their sharing behavior in a new situation. Children's mothers completed a questionnaire assessing mother-child relationship quality. The results revealed that mother-child relationship quality moderated the effect of choice condition on children's sharing feelings. Experiment 2 used a similar method to examine whether providing a reasonable justification when mothers made the choice influenced children's sharing. We found that although children complied with their mother's choice in the immediate situation, they exhibited more sharing behavior in the subsequent new situation when the mother provided a reasonable justification compared to when no justification was given. These results indicate that mothers making choices for children does not necessarily reduce sharing behavior and feelings; positive mother-child relationships and reasonable justifications may have a protective effect on children's sharing motivation when mothers make choices.

1. Introduction

1.4 The Role of Relationship Quality

While a sense of relatedness and autonomy are not inherently contradictory, relational autonomy may not emerge in all relationships. The realization of relational autonomy is highly likely influenced by the quality of interpersonal relationships. This study focuses on parent-child relationship quality, operationally defined as the degree of acceptance and rejection between individuals (Rohner, 2016). Interpersonal acceptance, expressed through love and affection, promotes warm interpersonal relationships, whereas interpersonal rejection, primarily manifested as hostility and neglect, makes individuals feel excluded and damages relationships (Rohner, 2016). Iyengar and Lepper's (1999) research demonstrated that Chinese-American children were more motivated to follow choices made by individuals with whom they had better relationships (e.g., their mothers) compared to strangers. More recent studies have directly shown that in collectivist cultures, children's motivation to complete chosen tasks is influenced by the quality of their relationship with the person making the choice (Bao & Lam, 2008; Chirkov et al., 2003).

A study of Hong Kong Chinese children found that the effect of choice freedom on learning motivation in 10-11-year-old elementary school children was moderated by parent-child relationships. When the mother who made choices for the child had a positive relationship with the child, the child's learning motivation

when following the mother's choice was as strong as when making their own choice. However, when the mother-child relationship was negative, the child's motivation when following the mother's choice was lower than when making their own choice (Bao & Lam, 2008). Additional research has shown that the degree of relatedness between parents, teachers, and children significantly influences children's motivational orientation and academic achievement (Furrer & Skinner, 2003; Grolnick et al., 1991; Moss & St-Laurent, 2001). Researchers have explained these findings through self-determination theory: when others make choices for children, children are more likely to internalize choices made by trusted individuals with whom they have positive relationships, thereby exhibiting stronger behavioral motivation (Bao & Lam, 2008; Deci & Ryan, 2000).

These findings suggest that, at least in academic domains, the quality of the relationship between the person making the choice and the child can moderate the effect of choice freedom on behavioral motivation. However, most of these studies have focused on academic motivation and primarily examined children in upper elementary school and above (e.g., Bao & Lam, 2008). As previously mentioned, preschool children already have some understanding of the concept of choice (e.g., Zhao et al., 2021), and the preschool period is a critical stage for prosocial behavior development (e.g., Wu & Su, 2014; Yang & Kou, 2017). Therefore, the first purpose of this study is to investigate whether the relationship between choice freedom and prosocial behavior in preschool children is influenced by relationship quality. We hypothesize that when mother-child relationships are positive, mothers making choices for children (compared to children making their own choices) may not impair children's prosocial motivation and behavior, whereas when mother-child relationships are negative, mothers making choices may likely damage children's prosocial motivation and behavior.

1.5 The Role of Reasoning

In addition to relationship quality, whether the person making the choice provides a reasonable explanation may also influence children's prosocial behavior and motivation. Research on helping behavior in toddlers around age 2 has shown that adult commands to help others do not promote helping behavior (Warneken & Tomasello, 2012). However, other studies indicate that inductive parenting, which directs children's attention to the impact of their behavior on others, can promote prosocial behavior (Hoffman, 2000).

Therefore, the second purpose of this study is to examine whether providing reasonable justifications when others (e.g., mothers) make choices influences children's prosocial behavior and motivation. We speculate that compared to imperative choices, children are more likely to internalize others' choices when provided with reasonable justifications (e.g., explaining the reasons for the choice, clarifying the impact of behavior on others), thereby exhibiting higher prosocial behavior.

1.6 Overview of the Present Research

In summary, this study investigates how choice freedom (i.e., making one's own choice vs. others making choices), relatedness (i.e., the quality of the relationship between the person making the choice and the child), and choice reasonableness (i.e., whether the person making the choice provides a reasonable explanation) influence Chinese preschool children's sharing behavior and motivation. We selected sharing behavior because it is a typical and early-developing prosocial behavior (Binmore, 2006; Birch & Billman, 1986) that has been extensively studied in children (Brownell et al., 2013; Chernyak & Kushnir, 2013; Dunfield et al., 2011; Paulus, 2014). In Experiment 1, we manipulated the choice situation children experienced, establishing three conditions: self-choice, mother-choice, and experimenter-choice. The mother-choice condition was included because previous research on choice and behavioral motivation has primarily used mothers (Bao & Lam, 2008; Iyengar & Lepper, 1999), and mothers are primary caregivers during early childhood, making the research practically meaningful. The experimenter-choice condition involved an unfamiliar or newly acquainted individual for comparison with the mother-choice condition.

Since previous research indicates that prosocial motivation that satisfies an individual's autonomy can enhance positive subjective feelings when performing prosocial behavior and promote the maintenance of prosocial behavior (Yang & Kou, 2015), this study focused on children's subjective feelings during the immediate sharing task and their sharing behavior in a subsequent new choice situation. This measurement approach has been used in similar studies on preschool children's prosocial behavior and motivation (Chernyak & Kushnir, 2013; Rapp et al., 2017; Yang & Kou, 2015). Additionally, we measured mother-child relationship quality to explore whether it moderates Chinese children's prosocial behavior and feelings across different choice situations. We hypothesized that the effect of choice freedom on prosocial behavior and feelings might depend on the quality of the relationship between the person making the choice and the child. When mothers who have positive relationships with their children make choices for them, children's motivation when following their mother's choice may be as strong as when they make their own choices. However, when mother-child relationships are negative, children's motivation when following their mother's choice may be lower than when they make their own choices. Experiment 2 focused on the impact of choice reasonableness (i.e., whether a reasonable explanation is provided), establishing three conditions: self-choice, mother-reasonable-choice, and mother-unreasonable-choice. We hypothesized that the mother-reasonable-choice condition would better promote children's prosocial motivation compared to the other two conditions.

2. Experiment 1

2.1.1 Participants

Using G*Power 3.1 software (Faul et al., 2007) and referencing effect sizes from similar previous studies (Rapp et al., 2017; Chernyak & Kushnir, 2013), while considering differences in experimental design, we set f = 0.4 as the a priori effect size and calculated that a minimum sample size of 66 participants was needed (α = 0.05, power = 1 − β = 0.80). Seventy preschool children aged 4-5 years (range = 4.04–5.95 years, M = 5.02, SD = 0.52; 32 boys, 38 girls) from kindergartens in Shanghai and Jiangsu Province participated in the study. Children were randomly assigned to three choice conditions: self-choice (N = 21, mean age = 5.11 years), mother-choice (N = 24, mean age = 4.95 years), and experimenter-choice (N = 25, mean age = 5.05 years). There were no significant age differences across the three conditions (p = 0.53). Additionally, mothers of children in the self-choice and mother-choice conditions (N = 45) participated in the study. All parents provided written informed consent, and children provided verbal assent.

2.1.2 Materials

The sharing task materials included two plush animal puppets (monkey and elephant; 15cm$\times$10cm×8cm); $three paper boxes$($belonging to the monkey, elephant, and child respectively$; 9.5$cm$×9 see original paper]) and $smiley face stickers$(1.5cm×1.5cm, as shown in Figure 1).

Mother-child relationship quality was measured using the Parental Acceptance-Rejection/Control Scale (Short Form) (PARQ/Control-SF) (Rohner, 2005). The full scale contains 29 items rated on a four-point scale, divided into five subscales: warmth/affection (8 items), hostility/aggression (6 items), indifference/neglect (6 items), rejection (4 items), and control (5 items). The first four subscales comprise the parent-child relationship measure (24 items total). Scoring involved: first calculating raw scores for each subscale, with ranges of warmth/affection (8-32), hostility/aggression (6-24), indifference/neglect (6-24), and rejection (4-16). The three negative subscales (hostility/aggression, indifference/neglect, and rejection) were reverse-scored (by subtracting the raw score from 100) to obtain subscale scores. The total mother-child relationship score was calculated as the sum of the four subscales (range = 244-316), with higher scores indicating more positive mother-child relationships and lower scores indicating more negative relationships. In this experiment, the internal consistency coefficient for the four subscales was 0.76.

[Figure 1: see original paper]

2.1.3 Procedure

Each child participated individually in a quiet room at their kindergarten. The procedure was adapted from Chernyak and Kushnir (2013). As shown in Figure

1, the experiment consisted of a "choice situation manipulation phase" and a "new sharing situation measurement phase."

First, the "choice situation manipulation phase" was conducted. In this phase, all children faced a choice about whether to share a sticker with the monkey puppet and were randomly assigned to one of three choice conditions (self-choice, mother-choice, or experimenter-choice). In each condition, the experimenter first presented the monkey puppet, told the child, "The monkey is feeling very sad now," and encouraged the child to greet the puppet. The experimenter then presented one cartoon sticker and asked if the child liked it. After confirming that the child liked the sticker (all children did), the experimenter placed two boxes (one with the monkey's photo and one without) in front of the child.

The choice situation differed across the three conditions. In the self-choice condition, children could make their own decision ("You can decide what to do yourself. You can keep this sticker for yourself, or you can give it to the monkey to make it feel better"). In the mother-choice condition, the mother made the choice for the child ("You cannot decide what to do yourself. We asked your mother earlier, and she said you must give this sticker to the monkey to make it feel better"). In the experimenter-choice condition, the experimenter made the choice for the child using similar instructions as the mother-choice condition, but replacing "mother" with "I" (the experimenter). The experimenter then turned away, allowing the child to distribute the sticker. The experimenter recorded whether the child shared in this initial sharing task (share = 1, not share = 0). Next, the experimenter used cards showing happy, neutral, and sad expressions (as shown in Figure 1) to ask, "How do you feel now? Are you happy, just okay, or sad?" and recorded the child's response (0-2).

The "new sharing situation measurement phase" then measured children's sharing behavior toward a novel partner (the elephant puppet). In this new sharing situation, the experimenter presented the elephant puppet and told the child, "The elephant is feeling very sad today." The experimenter then presented three identical smiley face stickers and said, "These three stickers are all yours. You can share some of these stickers with the elephant to make it feel better." While placing the elephant's box and the child's box on opposite sides of the table, the experimenter allowed the child to decide how to distribute the stickers: "You can decide what you want to do. You can share one, two, or three stickers, or you can keep all the stickers for yourself." The experimenter recorded the number of stickers the child shared in this new situation (0-3).

Additionally, mothers in the self-choice and mother-choice conditions were invited to complete the mother-child relationship quality questionnaire (Parental Acceptance-Rejection Questionnaire) online.

2.2 Results

2.2.1 Preliminary Analysis Preliminary analyses revealed no significant gender or age differences across groups (ps $>$ 0.50), and neither gender nor

age affected the dependent variables (ps $>$ 0.46). Therefore, gender and age were not included in subsequent analyses. Means and standard deviations for children's initial sharing behavior, sharing feelings, and sharing behavior in the new situation across the three choice conditions are presented in Table 1 .

For initial sharing behavior, the vast majority of children in each condition shared with the monkey: 100% (21/21) in the self-choice condition, 96% (23/24) in the mother-choice condition, and 96% (24/25) in the experimenter-choice condition. A one-way ANOVA revealed no significant differences across the three conditions in whether children shared in the initial task, $F(2, 67) = 0.43$, $p = 0.653$.

We next analyzed children's subjective feelings during initial sharing (sharing feelings) and their sharing behavior in the subsequent new sharing situation. Since these variables depended on children having shared with the monkey in the initial situation, we excluded data from children who did not share in the initial task (excluding 2 participants, resulting in a final sample of 68 for subsequent analyses). Note that the pattern of results did not change if these data were retained. A one-way ANOVA on sharing feelings ("happy" = 2, "just okay" = 1, "sad" = 0) revealed no significant differences across the three conditions: self-choice ($M = 1.95$, $SD = 0.22$), mother-choice ($M = 1.70$, $SD = 0.56$), and experimenter-choice ($M = 1.75$, $SD = 0.53$), $F(2, 65) = 1.81$, $p = 0.173$. A one-way ANOVA on the number of stickers shared with the elephant (0-3) also revealed no significant differences: self-choice ($M = 1.81$, $SD = 0.87$), mother-choice ($M = 2.04$, $SD = 0.71$), and experimenter-choice ($M = 2.00$, $SD = 0.98$), $F(2, 65) = 0.45$, $p = 0.637$.

2.2.2 Moderation Analysis Although there were no differences across the three choice conditions, we were interested in whether mother-child relationship quality would moderate the effect of choice freedom on children's prosocial motivation. We therefore conducted moderation regression analyses using SPSS to examine whether mother-child relationship quality moderated the effect of choice condition on children's sharing feelings and new sharing behavior. Note that because we did not measure the relationship between the experimenter (stranger) and the child, these analyses only included the self-choice and mother-choice conditions, excluding the experimenter-choice condition.

First, we conducted a linear regression analysis with sharing feelings as the dependent variable. In Model 1, we entered choice condition (dummy-coded: self-choice = 0, mother-choice = 1) and mother-child relationship quality (higher scores indicate more positive relationships, standardized) as predictors. In Model 2, we added the interaction term between choice condition and mother-child relationship quality (standardized). Results showed that Model 1 explained only 11% of the variance, $R_1^2 = 0.11$, $F(2, 41) = 2.62$, $p = 0.09$. However, Model 2, which included the interaction term, explained 21% of the variance, $R_2^2 = 0.21$, $F(3, 40) = 3.60$, $p = 0.022$. The increase in explanatory power from Model 1 to Model 2 was significant ($\Delta R^2 = 9\%$, $p = 0.030$). In

Model 2, the main effect of choice condition was significant (β = –0.32, se = 0.12, t = –2.25, p = 0.030), while the main effect of mother-child relationship quality was not (β = –0.12, se = 0.09, t = –0.64, p = 0.53). Importantly, the interaction between choice condition and mother-child relationship quality was significant (β = 0.43, se = 0.13, t = 2.25, p = 0.030).

To further explore this interaction, we conducted simple slopes analysis by dividing mother-child relationship quality into high, medium, and low groups (\$±\$1 SD from the mean). Results showed that in the high group (positive mother-child relationships), there was no significant difference in children's feelings between the self-choice (M = 1.90) and mother-choice conditions (M = 1.92), β = 0.03, t = 0.15, p = 0.883, 95% CI [–0.33, 0.38]. In the medium group (average relationships), children in the self-choice condition (M = 1.95) reported significantly more positive feelings than those in the mother-choice condition (M = 1.70), β = –0.26, t = –2.06, p = 0.046, 95% CI [–0.51, –0.01]. In the low group (negative mother-child relationships), children in the self-choice condition (M = 2.00) also reported significantly more positive feelings than those in the mother-choice condition (M = 1.47), β = –0.54, t = –3.05, p = 0.004, 95% CI [–0.89, –0.18]. The simple slopes analysis results are shown in Figure 2 [Figure 2: see original paper].

Second, we conducted a linear regression analysis with sharing behavior in the new situation as the dependent variable, following the same procedure. Results showed that Model 1 explained only 3% of the variance, R_1^2 = 0.03, F(2, 41) = 0.72, p = 0.49, and Model 2 explained only 4% of the variance, R_2^2 = 0.04, F(3, 40) = 0.49, p = 0.69. The explanatory power of the two models did not differ significantly (ΔR^2 = 0.2%, p = 0.78). This indicates that mother-child relationship quality did not significantly moderate the effect of choice condition on children's sharing behavior in the new situation.

[Figure 2: see original paper]

Experiment 1 found that although choice condition did not affect children's sharing behavior (children across all conditions showed high levels of sharing when facing a new puppet), mother-child relationship quality moderated the effect of choice freedom on children's subjective sharing feelings. When mother-child relationships were positive, children's sharing feelings when mothers made the choice were as positive as when children made their own choices. In contrast, when mother-child relationships were neutral or negative, children's sharing feelings when mothers made the choice were significantly lower than when children made their own choices. Since positive feelings when performing prosocial behavior represent one manifestation of autonomous prosocial motivation (Yang & Kou, 2015), Experiment 1's results demonstrate the important influence of parent-child relationships on children's prosocial motivation when mothers make choices. These findings are consistent with previous research showing that parent-child relationships affect children's academic motivation when mothers make choices (Bao & Lam, 2008). Together, these studies suggest that others making choices does not necessarily impair behavioral motivation; when the per-

son making the choice has a positive relationship with the child, children exhibit similarly positive subjective feelings as when making their own choices. This aligns with self-determination theory's view that the realization of autonomy does not necessarily require complete separation from external influences (Deci & Ryan, 2000).

In this experiment, children's sharing behavior in both the initial and new situations showed no differences across choice conditions. In fact, most children exhibited high levels of sharing (97% shared in the initial situation, and 73% shared two or more stickers in the new situation), resulting in low heterogeneity in sharing behavior. We speculate this may be because the stickers available for sharing were of a single type, not highly attractive, and few in number (only three). Additionally, in the mother-choice and experimenter-choice conditions, the mother/experimenter not only requested sharing but also pointed out the reason for sharing (to make the monkey feel better). We suspect these factors may have led children across all conditions to exhibit equally high sharing behavior.

Furthermore, we found a moderation effect on sharing feelings but not on sharing behavior. We speculate this may be due to the low heterogeneity in sharing behavior, or because some children may have exhibited sharing behavior despite negative internal feelings (especially when mothers explicitly requested sharing and provided a reasonable justification).

In addition to parent-child relationships, another factor that may influence children's behavioral motivation is whether the person making the choice provides a reasonable justification. Previous research has shown that adults directly commanding children to help others does not promote helping behavior (Warneken & Tomasello, 2012), but inductive parenting that directs children's attention to the impact of their behavior on others can promote prosocial behavior (Hoffman, 2000). Therefore, in Experiment 2, we investigated whether providing reasonable explanations when others make choices influences children's prosocial behavior and motivation. Compared to Experiment 1, we retained the self-choice condition but subdivided the mother-choice condition by manipulating choice reasonableness, creating mother-reasonable-choice and mother-unreasonable-choice conditions that differed in whether mothers provided reasonable justifications or forced children to share. Additionally, to address the low heterogeneity in sharing behavior observed in Experiment 1, we replaced the stickers with more attractive cartoon crystal stickers (see Figure 3 [Figure 3: see original paper]) and increased engagement by allowing children to select their favorite sticker type from several options during the warm-up phase.

3. Experiment 2

3.1.1 Participants

Using G*Power 3.1 software (Faul et al., 2007), we set f = 0.4 as the a priori effect size and calculated that a minimum sample size of 66 participants was

needed ($\alpha = 0.05$, power $= 1 - \beta = 0.80$). We recruited 84 preschool children aged 4-5 years (range = 4.02–5.96 years, M = 4.90, SD = 0.60; 43 boys, 41 girls) from two kindergartens in Shanghai. Children were randomly assigned to three choice conditions: self-choice (N = 30, mean age = 4.95 years), mother-reasonable-choice (N = 28, mean age = 4.84 years), and mother-unreasonable-choice (N = 26, mean age = 4.90 years). There were no significant age differences across conditions (p = 0.77). All parents provided written informed consent, and children provided verbal assent.

3.1.2 Materials

Materials for Experiment 2 were modified based on Experiment 1. We used two plush animal puppets (monkey and elephant; 28cm$\times 16cm \times 16cm$); $three wooden boxes (belonging to the monkey$, as shown in Figure 3).

3.1.3 Procedure

The procedure for Experiment 2 is shown in Figure 3 and was largely similar to Experiment 1 with the following modifications. First, to ensure the stickers used were attractive, before the initial sharing task in the "choice situation manipulation phase," we asked children which of three different cartoon crystal stickers (Hello Kitty, Spider-Man, Super Wings) they liked most and used their preferred sticker type in the sharing task.

Children were randomly assigned to one of three choice conditions (self-choice, mother-reasonable-choice, or mother-unreasonable-choice). In the self-choice condition, children could make their own decision ("You can keep this sticker for yourself now, or you can give it to the monkey. What would you like to do?"). In the mother-reasonable-choice condition, mothers provided a reasonable justification when making the choice for the child ("We asked your mother earlier, and your mother wants to tell you that you should give this sticker to the monkey to make it feel better"). In the mother-unreasonable-choice condition, mothers requested sharing without providing any justification ("We asked your mother earlier, and your mother wants to tell you that no matter whether you're willing or not, you must give this sticker to the monkey"). The experimenter recorded whether children shared in the initial task and their sharing feelings.

Next, the "new sharing situation measurement phase" began. To ensure sticker attractiveness, we first asked children which of three new cartoon crystal stickers (Disney Princess, Frozen Princess, Ultraman) they liked most. After confirming their preference, the experimenter placed five stickers of that type (e.g., five different Ultraman stickers if that was the preference) in front of the child and said, "In this game, these stickers are all yours. You can keep all these stickers for yourself, or you can give some to the elephant." The experimenter recorded the number of stickers children shared in the new situation (0-5).

[Figure 3: see original paper]

3.2 Results

3.2.1 Preliminary Analysis Preliminary analyses revealed no significant gender or age differences across groups (ps > 0.26). Age did not significantly affect any dependent variables (ps > 0.10). However, children's gender significantly affected sharing feelings, t(66) = –2.60, p = 0.012, Cohen's d = 0.64, 95% CI [–0.55, –0.07], with girls reporting happier feelings than boys when sharing. Gender did not significantly affect other dependent variables (ps > 0.065). To control for gender as a potential confounding variable, we included it as a covariate in subsequent analyses of sharing feelings. Similar results were obtained when gender was not included as a covariate.

Means and standard deviations for children's initial sharing behavior, sharing feelings, and sharing behavior in the new situation across the three choice conditions are presented in Table 2 . For initial sharing behavior: 60% (18/30) of children shared in the self-choice condition, 93% (26/28) in the mother-reasonable-choice condition, and 92% (24/26) in the mother-unreasonable-choice condition. A one-way ANOVA revealed a significant effect of choice condition, F(2, 81) = 7.61, p = 0.001, ^{2} = 0.16. Bonferroni-corrected post-hoc pairwise comparisons showed that children in both mother-choice conditions were significantly more likely to share than those in the self-choice condition (mother-reasonable vs. self-choice: p = 0.003, Cohen's d = 0.83, 95% CI [–0.56, –0.09]; mother-unreasonable vs. self-choice: p = 0.003, Cohen's d = 0.80, 95% CI [–0.56, –0.08]). There was no significant difference between the mother-reasonable-choice and mother-unreasonable-choice conditions (p = 1.00). These results are shown in Figure 4 [Figure 4: see original paper].

[Figure 4: see original paper]

3.2.2 Main Analysis Subsequent analyses included only children who shared in the initial task (excluding 16 participants who did not share, resulting in a sample of 68 for subsequent analyses). The pattern of results did not change if these data were retained. One-way ANOVAs were conducted on sharing feelings and new sharing behavior. For sharing feelings ("happy" = 2, "just okay" = 1, "sad" = 0), there were no significant differences across the self-choice (M = 1.89, SD = 0.32), mother-reasonable-choice (M = 1.77, SD = 0.51), and mother-unreasonable-choice conditions (M = 1.71, SD = 0.62), F(2, 64) = 0.75, p = 0.476.

For the number of stickers shared with the elephant (0-5), there was a significant difference across conditions, F(2, 64) = 8.35, p = 0.001, ^{2} = 0.21. Bonferroni-corrected post-hoc pairwise comparisons revealed that children in the mother-reasonable-choice condition shared more stickers than those in both the self-choice condition (M = 2.61, SD = 1.03) and the mother-unreasonable-choice condition (M = 2.54, SD = 1.06) (mother-reasonable vs. self-choice: p = 0.006, Cohen's d = 1.02, 95% CI [0.29, 2.07]; mother-reasonable vs. mother-unreasonable: p = 0.001, Cohen's d = 1.06, 95% CI [0.41, 2.06]). There was

no significant difference between the self-choice and mother-unreasonable-choice conditions ($p = 1.00$). These results are shown in Figure 5 [Figure 5: see original paper].

[Figure 5: see original paper]

Experiment 2 found that compared to self-choice, mothers' choices promoted children's immediate sharing behavior. Importantly, however, different types of others' choices had different maintenance effects on children's behavior: when facing a new sharing partner, children in the mother-reasonable-choice condition were the most generous, while the other two groups shared fewer stickers. That is, only when mothers provided reasonable justifications did their facilitating effect persist, promoting and maintaining children's sharing behavior across situations. In contrast, mothers' direct commands (i.e., without providing reasonable justifications) could increase prosocial behavior in the immediate situation, but this effect was temporary and unstable. These results further demonstrate that others making choices does not necessarily reduce behavioral motivation (Deci & Ryan, 2000), and are consistent with previous findings that inductive guidance from adults better promotes toddlers' helping behavior than direct commands (Hoffman, 2000; Warneken & Tomasello, 2012).

4. General Discussion

This study investigated the influence of choice on children's prosocial behavior and feelings. Previous research on Western children found that children exhibited higher prosocial behavior and motivation when making their own choices compared to when others made choices for them or when no choice was available (Chernyak & Kushnir, 2013; Rapp et al., 2017). However, other studies suggest that Eastern and Western children view choice differently (Zhao & Kushnir, 2019; Zhao et al., 2021), and that the impact of choice on children's behavioral motivation differs across cultures (Bao & Lam, 2008). This study examined how children's sharing behavior and feelings compare when they make their own choices versus when others make choices for them, with particular focus on how the relationship between the person making the choice and the child, and whether reasonable explanations are provided, influence prosocial behavior and feelings.

Experiment 1 found that mother-child relationship quality affected children's subjective feelings when mothers made choices. For dyads with positive relationships, children's sharing feelings when mothers made the choice were as positive as when children made their own choices. In contrast, for dyads with neutral or negative relationships, children's sharing feelings when mothers made the choice were significantly lower than when children made their own choices. Experiment 2 found that whether others provided reasonable justifications when making choices also influenced children's prosocial behavior. Although children showed high sharing behavior in the immediate situation regardless of whether mothers provided justifications, when subsequently facing a new sharing situa-

tion, children shared more when mothers provided reasonable justifications than when they did not.

Together, these findings indicate that children's prosocial motivation does not necessarily decrease when others make choices for them. Instead, for children with positive connections to their mothers, following their mother's choices can lead to feelings as positive as when making their own choices. Additionally, mothers' reasonable choices and guidance can facilitate subsequent sharing behavior. These findings provide new insights and directions for research on how choice influences children's behavioral motivation, demonstrating that not only the agent making the choice affects the actor's behavior and motivation (Chernyak & Kushnir, 2013; Rapp et al., 2017), but also the relationship between the agent and the actor and whether reasonable explanations are provided.

Our findings align with self-determination theory's view that autonomy can be realized in diverse forms (Deci et al., 2008; Deci & Ryan, 2000; Ryan & Deci, 2000b). As long as basic psychological needs are satisfied, both self-choice and other-choice can promote behavioral motivation. Our findings further reveal that when others make choices for them, both relationship quality and choice reasonableness influence children's prosocial motivation, though they may affect different aspects: the relationship quality between the person making the choice and the child affects children's subjective feelings when performing prosocial behavior (Experiment 1) but not necessarily the behavior itself, while whether reasonable explanations are provided primarily affects the maintenance of prosocial motivation in new situations (Experiment 2).

Our study found that when children made their own choices or when others with whom they had positive relationships made choices for them, children reported relatively positive subjective feelings, whereas choices made by others with whom they had negative relationships reduced children's subjective experiences. This is consistent with previous self-determination theory research showing that children with more positive relationships with parents and teachers are more likely to internalize those adults' perspectives (Ryan et al., 1994). Additionally, mental health research has found interactive effects between autonomy needs and relatedness needs on psychological well-being, with positive relationships reducing depressive feelings associated with low autonomy, and high autonomy buffering negative experiences from poor relationships (Vansteenkiste et al., 2006). Together, these studies suggest that when parents or teachers maintain good emotional communication with children, children are more likely to trust and accept (or even internalize) their instructions, whereas when adults have negative relationships with children, children may feel coerced and reluctantly comply with demands. This highlights the importance of positive parent-child and teacher-child relationships (Veneziano, 2003; Dwairy, 2010).

Our findings regarding the effect of choice reasonableness on prosocial motivation are also consistent with previous research on how different types of motivation produce different outcomes (Vallerand et al., 2008). In our sticker-sharing situation, children's self-interest conflicted with others' needs, potentially creat-

ing a dilemma. In such situations, mothers providing clear, reasonable justifications (e.g., to make the monkey feel better) could help children resolve this conflict, leading children not only to exhibit prosocial behavior in the immediate situation but also to potentially internalize prosocial values, which they then demonstrated in the subsequent new situation. In contrast, mothers' coercive, commanding choices made children feel highly controlled. Although children complied with their mother's instructions and showed high sharing behavior in the immediate situation, their sharing behavior decreased once they entered a new situation without constraints. This aligns with self-determination theory's view that supportive external stimuli enhance intrinsic motivation while controlling external stimuli undermine it (Vansteenkiste et al., 2004; Deci & Ryan, 2000). This suggests that providing reasons and explanations can promote children's internalization of external demands and enhance their motivation to fulfill those demands (Joussemet et al., 2008).

Our study also suggests that the effect of choice on children's prosocial motivation may differ across cultures. Previous research on Western children found that making their own choices promoted prosocial behavior (Chernyak & Kushnir, 2013; Rapp et al., 2017). Our results indicate that for Chinese preschool children, when the person making the choice has a positive relationship with the child or provides reasonable justifications, other-choice does not reduce (and may even promote) prosocial behavior. This may be because autonomy is expressed and functions differently across cultures: while making one's own choices is important for realizing autonomy in Western cultures, for Chinese children, autonomy can be realized through diverse forms, including both self-choice and autonomy achieved through interpersonal relatedness (Heine & Lehman, 1997; Yeh & Yang, 2006). These results are generally consistent with Bao and Lam's (2008) findings on Chinese Hong Kong children in the academic choice domain. Together, these findings support the view that autonomy and relatedness can coexist and may even be mutually reinforcing in Chinese culture (Markus & Kitayama, 2003; Kagitcibasi, 2005; Keller, 2012; Ryan & Lynch, 1989).

This study has several limitations. First, due to the lack of direct methods for measuring motivation suitable for preschool children, we primarily measured children's subjective feelings and behavioral maintenance, consistent with previous research on preschool children (e.g., Chernyak & Kushnir, 2013; Rapp et al., 2017). Future research could explore more direct measures of motivation for preschool children. Second, although we found effects of choice on preschool children's sharing behavior, prosocial behavior also includes helping, comforting, and providing information (Dahl, 2015; Dunfield et al., 2011; Martin & Olson, 2015; Warneken & Tomasello, 2009). Research on young children has found that different prosocial behaviors are not clearly correlated, and each prosocial subtype may have unique developmental trajectories (Dunfield et al., 2011). Future research could examine the effects of choice on motivation for other prosocial behaviors. Third, to align with previous research (Iyengar & Lepper, 1999; Bao & Lam, 2008), we only examined situations where mothers made choices, but did not investigate situations where fathers or other impor-

tant individuals made choices for children. Finally, we did not directly measure Western children, making it difficult to provide direct evidence for cultural differences. Future research could use our methods to investigate Western children and conduct more direct comparisons with Chinese children.

Theoretically, this study enriches research on choice, autonomy, and prosocial motivation. Practically, it provides new empirical evidence for the educability of prosocial behavior in preschool children. On one hand, building positive relationships between parents/educators and children is an important condition for moral education. On the other hand, when guiding children's prosocial practice, parents and educators should provide reasonable intentions and explanations, particularly by highlighting the impact of children's behavior on others, to effectively promote children's value identification and internalization of social norms, thereby enhancing prosocial motivation and behavior.

5. Conclusion

This study found that for Chinese preschool children, mothers making choices does not necessarily reduce children's sharing behavior and subjective feelings compared to children making their own choices. Instead, positive mother-child relationships and reasonable justifications have a protective effect on children's sharing when mothers make choices. For dyads with positive relationships, children's sharing feelings when mothers make choices are as positive as when children make their own choices. When mothers make choices and provide reasonable justifications, children show high levels of sharing behavior both in the immediate and subsequent similar situations.

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Appendix 1: Experiment 1 Scripts

I. Self-Choice Condition

Phase 1: Choice Situation
Puppet 1: Mr. Monkey
"Look, here's Mr. Monkey. He's feeling very sad today. This is Mr. Monkey's box."
"Look, here's a sticker. Do you like this sticker?"
"Okay, before we start the game, I want to tell you: children before couldn't decide for themselves, they couldn't decide whether to share stickers with Mr. Monkey. But now, you can decide what to do yourself. You can keep this sticker for yourself, or you can give it to Mr. Monkey to make him feel better."
"Alright, now if you want to give the sticker to Mr. Monkey, put it in his box; if you want to keep it for yourself, take it. Now let's both turn around so no one can see how you divided it."
[After the child finishes distributing:]
"Okay, how do you feel now? Are you happy, just okay, or sad?" [Show three emotion cards]
[Record whether the child shared with the monkey puppet and their sharing feelings]

Phase 2: New Sharing Situation
Puppet 2: Mr. Elephant
"Look, here's Mr. Elephant. He's feeling very sad today. This is Mr. Elephant's box."
"These three stickers are all yours. You can share some of these stickers with Mr. Elephant to make him feel better."
"Alright, now, if you decide to share some stickers with Mr. Elephant, you can put the stickers you want to share in his box. Remember, all the stickers are yours, and you can decide what you want to do. You can share 1, 2, or 3 stickers, or you can keep all the stickers for yourself. If you want to keep stickers for yourself, put the ones you're keeping in your box. We'll all turn around so

no one can see how you divided them."
[Before sharing, to check understanding of instructions, ask:]
"Which is Mr. Elephant's box, and which is your box?"
"Will anyone else see what you did?"
[Record the number of stickers the child shared with the elephant puppet]

II. Mother-Choice Condition

Phase 1: Choice Situation
Puppet 1: Mr. Monkey
"Look, here's Mr. Monkey. He's feeling very sad today. This is Mr. Monkey's box."
"Look, here's a sticker. Do you like this sticker?"
"Okay, before we start the game, I want to tell you: children before could decide for themselves, they could decide whether to share stickers with Mr. Monkey. But now, you cannot decide what to do yourself. We asked your mother earlier, and she said you must give this sticker to Mr. Monkey to make him feel better."
"Alright, now if you want to give the sticker to Mr. Monkey, put it in his box; if you want to keep it for yourself, take it. Now let's both turn around so no one can see how you divided it."
[After the child finishes distributing:]
"Okay, how do you feel now? Are you happy, just okay, or sad?" [Show three emotion cards]
[Record whether the child shared with the monkey puppet and their sharing feelings]

Phase 2: Same as Phase 2 in the Self-Choice Condition.

III. Experimenter-Choice Condition

Phase 1: Choice Situation
Puppet 1: Mr. Monkey
"Look, here's Mr. Monkey. He's feeling very sad today. This is Mr. Monkey's box."
"Here's a sticker. Do you like this sticker?"
"Okay, before we start the game, I want to tell you: children before could decide for themselves, they could decide whether to share stickers with Mr. Monkey. But now, you cannot decide what to do yourself. In this game, you must give this sticker to Mr. Monkey to make him feel better."
"Alright, now if you want to give the sticker to Mr. Monkey, put it in his box; if you want to keep it for yourself, take it. Now let's both turn around so no one can see how you divided it."
[After the child finishes distributing:]
"Okay, how do you feel now? Are you happy, just okay, or sad?" [Show three emotion cards]
[Record whether the child shared with the monkey puppet and their sharing feelings]

Phase 2: Same as Phase 2 in the Self-Choice Condition.

Appendix 2: Experiment 2 Scripts

I. Self-Choice Condition

Phase 1: Choice Situation

[Experimenter faces child, takes out monkey puppet]

"This is the little monkey! Do you want to say hello to the monkey?" [Encourage child to interact with monkey for a few seconds]

"This is the monkey's box, and this is your box." [Place monkey next to its box]

[Experimenter places three sticker types side by side on the table, being careful not to hand them directly to the child. If the child picks them up to play, allow them to play for a moment, then place them back on the table]

"Look, there are many stickers here. Which one do you like best?" [Show three crystal stickers: Hello Kitty, Spider-Man, Super Wings]

[Have child select their favorite and place it in front of them. Remove the other stickers to where the child cannot see them]

"Wow, you really like this sticker, right?"

"Okay, in this game, I want to tell you that the little monkey is very sad now, and he also really likes this sticker."

"You can keep this sticker for yourself [point to child's box], or you can give it to the little monkey [point to monkey's box]. What would you like to do?" [This is a symbolic question; no need for child to answer verbally, just transition to the next part]

"This is what this game is about. You can do whatever you want with this sticker now. You decide."

"Okay, you can start."

[Experimenter confirms child's sharing decision]

"Okay, you gave the sticker to the monkey" / "Okay, you kept the sticker for yourself"

[Experimenter puts away boxes]

[After child finishes distributing:]

"Okay, how do you feel now? Are you happy, just okay, or sad?" [Show three emotion cards]

[Record whether child shared with monkey puppet and their sharing feelings]

Phase 2: New Sharing Situation

1. If child shared sticker, ask: "I saw you just gave a sticker to the little monkey. I want to ask, who told you to give the sticker to the monkey?" [Correct if wrong answer], "And why?"

2. If child did not share sticker, ask: "I saw you kept the sticker for yourself. I want to ask, why?"

[Experimenter takes out elephant puppet]

"Look, this is the little elephant!" [Encourage child to interact with elephant for a few seconds]

"This is the elephant's box, and this is your box."

"Look, there are many stickers here. Which one do you like best?" [Can show three crystal stickers: Princess, Frozen, Ultraman]
[Have child select their favorite and place it in front of them. Remove other stickers]
"Wow, you really like this sticker, right?"
[Place 5 stickers of the same type as the child's favorite in front of them (e.g., if child chose Princess, place 5 different Princess stickers)]
"Look, here are 5 stickers. Are they the same type you just liked most?"
"Now, these 5 stickers are all yours."
"But look, the little elephant is very sad now, and he also really likes these stickers."
"Okay, let's remember. In the previous game, your mother said that no matter whether you were willing or not, you had to give the sticker to that little monkey, right?"
"So now, in this game, we didn't ask your mother. You can decide for yourself. You can keep all these stickers for yourself [point to child's box], or you can give some to the little elephant [point to elephant's box]. You can do whatever you want."
[When distributing stickers, experimenter removes elephant puppet]
[Record number of stickers child shared with elephant puppet, then ask:]
"How many stickers did you give to the little elephant, and how many did you keep for yourself?"
"So, did you give more to the little elephant or keep more for yourself?"

II. Mother-Reasonable-Choice Condition

Phase 1: Choice Situation
[Experimenter faces child, takes out monkey puppet]
"This is the little monkey! Do you want to say hello to the monkey?" [Encourage child to interact with monkey for a few seconds]
"This is the monkey's box, and this is your box." [Place monkey next to its box]
[Experimenter places three sticker types side by side on the table, being careful not to hand them directly to the child. If the child picks them up to play, allow them to play for a moment, then place them back on the table]
"Look, there are many stickers here. Which one do you like best?" [Show three crystal stickers: Hello Kitty, Spider-Man, Super Wings]
[Have child select their favorite and place it in front of them. Remove the other stickers to where the child cannot see them]
"Wow, you really like this sticker, right?"
"Okay, in this game, I want to tell you that the little monkey is very sad now, and he also really likes this sticker."
"We asked your mother XXX earlier, and your mother wants to tell you: 'You should give this sticker to the little monkey to make it feel better [point to monkey's box].' "
"This is what your mother wants to tell you, that you should give this sticker to the little monkey to make it feel better."

"Okay, you can start."
[Experimenter confirms child's sharing decision]
"Okay, you gave the sticker to the monkey" / "Okay, you kept the sticker for yourself"
[Experimenter puts away boxes]
[After child finishes distributing:]
"Okay, how do you feel now? Are you happy, just okay, or sad?" [Show three emotion cards]
[Record whether child shared with monkey puppet and their sharing feelings]

Phase 2: Same as Phase 2 in the Self-Choice Condition.

III. Mother-Unreasonable-Choice Condition

Phase 1: Choice Situation
[Experimenter faces child, takes out monkey puppet]
"This is the little monkey! Do you want to say hello to the monkey?" [Encourage child to interact with monkey for a few seconds]
"This is the monkey's box, and this is your box." [Place monkey next to its box]
[Experimenter places three sticker types side by side on the table, being careful not to hand them directly to the child. If the child picks them up to play, allow them to play for a moment, then place them back on the table]
"Look, there are many stickers here. Which one do you like best?" [Show three crystal stickers: Hello Kitty, Spider-Man, Super Wings]
[Have child select their favorite and place it in front of them. Remove the other stickers to where the child cannot see them]
"Wow, you really like this sticker, right?"
"Okay, in this game, I want to tell you that the little monkey is very sad now, and he also really likes this sticker."
"We asked your mother XXX earlier, and your mother wants to tell you: 'No matter whether you're willing or not, you must give this sticker to the little monkey [point to monkey's box].' "
"This is what your mother wants to tell you, that no matter whether you're willing or not, you must give this sticker to the little monkey."
"Okay, you can start."
[Experimenter confirms child's sharing decision]
"Okay, you gave the sticker to the monkey" / "Okay, you kept the sticker for yourself"
[Experimenter puts away boxes]
[After child finishes distributing:]
"Okay, how do you feel now? Are you happy, just okay, or sad?" [Show three emotion cards]
[Record whether child shared with monkey puppet and their sharing feelings]

Phase 2: Same as Phase 2 in the Self-Choice Condition.

Note: Figure translations are in progress. See original paper for figures.