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ABSTRACT

We study the effects of an unconditional cash transfer program on social preferences of children. The program allocated $1,076 to randomly selected households in rural Kenya. We measure the social preferences of 4,022 children from 1,687 households with survey questions and incentivized behavioral games three years after the intervention. We distinguish between the direct effects on children of recipient households and the spillover effects on children of neighboring households. We do not find consistent evidence that children from treatment and spillover groups are more or less prosocial than children from the control group. Additionally, we find no persistent economic effects of the program. We find some evidence of reduced psychological well-being among adults and children in spillover households.

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1. Introduction

Social preferences have been shown to affect a wide variety of economic outcomes and behaviors (see e.g., Falk et al., 2018; Fehr et al., 2022). While an extensive literature has focused on the causes and consequences of prosocial preferences in adults, there is much less evidence on what shapes prosocial behavior in children. Understanding the drivers of prosocial behavior in children is important, as preferences learned in childhood may carry over into adulthood.

Much of the literature on social preference formation in children has focused on the role of education and socialization in shaping child outcomes (e.g., Huppert et al., 2019; Kosse et al., 2020; Rao, 2019). In this paper, we examine how household wealth affects prosocial preferences of children. In adults, socioeconomic status has been shown to be correlated with a wide variety of social preferences, such as preference for redistribution (Andersen et al., 2020; Fehr et al., 2022), generosity and trust (Korndörfer et al., 2015; Piff et al., 2010), and feelings of entitlement (Côté et al., 2021). Similarly, there is evidence that children from families with higher socioeconomic status (SES) behave more prosocially than other children in dictator games (Bauer et al., 2014; Benenson et al., 2007; Chernyak et al., 2018; Sutter et al., 2019). However, there is limited causal evidence on the effects of wealth on social preferences in children, primarily because there is rarely exogenous variation in wealth or income. We address concerns about causality by examining the effects of an unconditional cash transfer (UCT) program in Kenya, in which some households randomly received a UCT. This allows us to ask how the receipt of a large cash transfer affects the formation of social preferences in children.

Between 2017 and 2018, the Busara Center for Behavioral Economics implemented a UCT program in Nakuru County, Kenya. Of the 120 villages in the study sample, 60 villages were chosen as treatment villages. Within treatment villages, households were identified as eligible to receive the cash transfer if they lived in a house without brick, stone, or metal walls. Some of the eligible households (n=540) in treatment villages were randomly selected to receive a cash transfer of KES 50,000, which was approximately USD 1,076 PPP at the time of study. Other eligible households neighboring the selected households were selected as spillover households (n=1,077). The households in the remaining 60 villages serve as a pure control group (n=1,545). An evaluation of this UCT in 2018-2019 found that the program successfully increased the consumption and assets of treated households in the short-term (Haushofer et al., 2020). The study also found evidence of psycho-social benefits: adults in treated households reported greater well-being and lower levels of stress. The initial evaluation found no evidence of negative effects on spillover households in terms of consumption, assets, or psychological well-being.[1]

[1]The original study also included a treatment group that received a five-week psychotherapy program, "Problem Management Plus," and a group that received both the cash transfer and the psychotherapy. The psychotherapy alone had no statistically significant

To measure the effects of the UCT on the social preferences of children, we implement surveys and behavioral games with children aged 6 to 17 (at the time of our study) in treatment, spillover, and control households in 2021. Our final sample includes 4,022 children (820 from treatment households, 1,308 from spillover households, and 1,894 from control households). These 4,022 children come from 1,687 distinct households. All children in a household that fall within the targeted age range are included in the sample. The surveys include modules measuring mental health, envy, trust, social closeness, zero-sum thinking, locus of control, and perceptions about sharing. The behavioral games are standard economic games that we modified to be appropriate for children and adolescents and for the context. The games include the dictator game (DG), ultimatum game (UG), third party dictator game (3PD), joy of destruction game (JOD), and public goods game (PGG). Additionally, we survey adult household heads in 2021 to measure the longer-run impacts of the UCT transfer on consumption, assets, and well-being.

We find several key results. First, we examine whether the UCT had long-run economic and psychological effects on recipient households and their neighbors. We find that 3 years after the program was completed, there are no significant gains for treatment households in terms of monthly consumption or total value of household assets. The lack of longer run effects is consistent with results in other settings (see e.g. Wollburg et al., 2023; Cahyadi et al., 2020; Baird et al., 2019; Araujo et al., 2017; Baez and Camacho, 2011). This is despite the fact that the initial evaluation showed positive and significant consumption and asset gains. Adults in the treatment group do self-report higher levels of happiness, but the estimated effect of the treatment on an index of various psychological questions is close to 0 and statistically insignificant.

However, we find evidence of negative spillover effects of treatment on psychological well-being. Adults in spillover households report lower levels of psychological well-being, in particular, a decrease in life satisfaction and an increase in depression. Consistent with the survey results for adults, children in spillover households also report lower life satisfaction and higher levels of depression. Parent and child mental health are positively correlated. These results suggest the presence of negative spillover effects several years after the program.

Second, we examine how the UCT program has shaped the social preferences of children in treatment and spillover households relative to control households. The children complete five standard economic exchanges games (DG, UG, 3PD, JOD, PGG) with anonymous children from a community like their own. They are told the age and gender of the other child. We find limited evidence of any effect of the program on the prosocial behavior of children in treated households. Compared to children in control households,

impact on any of the main outcomes after adjusting for multiple hypothesis testing, and the impacts of the combined cash and psychotherapy treatment were similar to those of cash alone. In this paper, we focus only on the households in villages that received cash only; spillover households in the "cash-only" villages; and pure control households.

treated children are no more generous in the DG; do not offer more money to the other player in the UG and are not more likely to reject an offer in this game; are no less likely to destroy the other player's endowment in the JOD; are no more likely to equally split an endowment between two players in the 3PD; and do not contribute more to a public good in the PGG. Thus, we find no evidence that the cash transfer increased altruism or social norm adherence and enforcement, nor that it affected willingness to destroy property or contribute to a public good.

While we find no positive effects on prosocial behavior for children in treated households, reassuringly, we only find weak evidence for negative effects of the cash transfer program on the prosocial behavior of children in spillover households, despite the negative psychological spillovers on these children described above. Spillover children do not behave differently in their allocation of resources to other players in the DG, UG, JOD, and 3PD. They also contribute similar amounts in the PGG. Our relatively large sample enables us to rule out changes larger than 4 percentage points for all games except JOD, for which we can reject changes larger than 10pp. This suggests that living near to families that received the transfers did not have a negative impact on the prosocial preferences of children in spillover households. The point estimates for share of the endowment sent in the DG and share offered in the UG are negative and become significant when including enumerator fixed effects, but these effects are small in magnitude (less than a 3% change relative to the control group mean).

The survey measures of pro-social norms and behavior mirror these null findings. We observe no changes for children in both treatment and spillover households in surveys of benign or descriptive envy, trust, perceived social closeness, zero-sum thinking, locus of control, or perceptions about sharing. One exception is malicious envy, where children in treatment households report higher levels of envy.

Overall, we find little effect of UCTs on the prosocial behavior of children, both in the treatment and in the spillover group. However, this null effect may shroud several kinds of heterogeneity. Specifically, UCTs may differentially affect prosocial behavior depending on both the identity of the respondent and the identity of their partner in the behavioral games. To address this possibility, we next examine heterogeneity by "own" and "other player" characteristics.

To study the role of "other player" characteristics, for a subset of the games (the DG, UG, and JOD), the children complete two additional rounds of the game in which we also tell them whether the other player is from a household that is richer than their household or poorer than their household. We hypothesized that the effects of cash transfers may differ based on the relative wealth of the other player. Thus, for the DG, UG, and JOD, children complete three versions of these games (one neutral, one with a poorer partner, one with a richer partner; in the description of overall results above, we average across these three rounds). The neutral version of the games is completed first. The order of the subsequent two versions is randomized for each individual and game. We find little evidence for differences in behavior when children are paired with poorer relative to richer partners. However, in the JOD, children from spillover households are more likely to destroy the endowment of partners from poorer households compared to partners from richer households. Thus, spillover children are not less prosocial in general, but they are particularly spiteful towards those who are less well off. For the children in treatment households, we find no evidence of greater generosity towards poorer children relative to richer children.

Next, we examine heterogeneity in game play based on the respondent's own characteristics such as their age group, gender, and wealth. Children in our sample are between the ages of 6 and 17. Some were very young when the cash transfer was implemented, while others were older. However, we find no evidence of treatment effect heterogeneity based on respondent age group across any of the behavioral games. Consistent with House et al. (2023) who examine cross-cultural evidence of gender differences in children's cooperation, we find limited evidence of heterogeneity by respondent gender. Girls in the treatment and spillover groups destroy a smaller share of the other player's endowment in the JOD, but we hesitate to interpret these results strongly.

We also examine heterogeneity by whether the respondent comes from a household with above or below median assets at baseline. We find little evidence of treatment effect heterogeneity by baseline wealth amongst treated households. We find evidence of treatment effect heterogeneity for spillover households: in the DG, UG, and PGG, children from wealthier households at baeline are more prosocial than those from initially poorer households, suggesting that a wealthy family background protects against any negative spillover effects of UCTs on prosocial behavior. These results are in line with work in other settings that find a positive correlation between SES and prosocial behavior in children (Bauer et al., 2014; Benenson et al., 2007; Chernyak et al., 2018). However, these children also engage in higher levels of destruction in the JOD.

We further consider heterogeneity by baseline village wealth and inequality. Children from spillover households in poorer villages are more likely to engage in destruction in the JOD, suggesting that children whose families "missed out" on cash transfers may become especially spiteful if they live in poor villages. In addition, in villages with high inequality at baseline, children in both treated and spillover households give more in the DG and UG and are more likely to reject offers in the UG; children in spillover households also contribute slightly more in the PGG. Together, these effects possibly reflect stronger village-level norms in favor of redistribution after transfers amongst both recipient households and their neighbors. However, children from treated households in high-inequality villages are also more likely to engage in destruction in the JOD.

Our results contribute to understanding how wealth shapes prosocial behavior and preferences. For example, a large literature in political economy and economics has examined preference for redistribution, and how that varies by income (Fehr et al., 2022; Korndörfer et al., 2015; Piff and Robinson, 2017). Additionally, exposure to individuals from different backgrounds may affect social preference formation, such as in Rao (2019). We build on this literature in several ways. First, we collect extensive survey and experimental data from over 4,000 children. We provide evidence that an exogenous increase in wealth does not increase prosocial behavior among treated children.

Second, we contribute to understanding the formation of social preferences in children (for a review, see Sutter et al., 2019; List et al., 2023). Childhood is an important time for the formation of skills and behaviors that affect life outcomes (Almås et al., 2010; Cappelen et al., 2020; Fehr et al., 2008; Heckman, 2006; Kosse et al., 2020; Cobo-Reyes et al., 2020). Some of this work has focused on the role of schooling or socioeconomic status for shaping children's preferences. For example, Cappelen et al. (2020) find that attending preschool increases altruism; Kosse et al. (2020) find that a mentorship program in elementary school increases altruism and closes the SES gap in prosocial behavior. We build on this literature by estimating the effect of an exogenous wealth shock on both children of recipient households and children of nearby spillover households. Our results suggest that overall, such shocks do not have a significant effect on social preferences for children in treatment households. With 80% probability, we can reject effect sizes larger than 3 percentage points (pp) for the Dictator Game, and between 2-10pp for other games. Additionally, there may be some negative effects for children in spillover households and there is evidence of some heterogeneity by baseline family and village wealth and inequality.

Finally, we speak to the literature on the effects of UCTs. Many papers have documented the positive benefits of UCTs for participants (Arnold et al., 2011; Baird et al., 2013; Haushofer and Shapiro, 2016). These papers find that cash transfers improve asset holdings, consumption, food security, and psychological well-being. We find that these benefits do not seem to persist three years after the intervention, consistent with Baird et al. (2019) and Blattman et al. (2020). Recent work explores the effects on adult preference formation (Cerkez et al., 2023) – finding no long run effects. We contribute to this literature by showing that despite cash transfers having short-term impacts on important economic indicators, they seem to have little lasting impact on the social preferences of children. Additionally, some recent work has highlighted potential unintended consequences of cash transfers, such as price effects (Filmer et al., 2021; but see Egger et al., 2022). Our results complement this literature by showing negative spillover effects of UCTs on psychological well-being for adults and children.

2. Study Design

2.1 Unconditional Cash Transfer Treatment

Our sample includes individuals who participated in a previously implemented RCT evaluating UCTs, conducted between May 2017 and January 2018 in Nakuru County, Kenya by the Busara Center for Behavioral Economics (Haushofer et al., 2020). In the original trial, those in the cash treatment group (i.e., 540 households across 60 villages) received a UCT of KES 50,000 (equivalent to USD 1,076 PPP at the time of study). Cash transfers were delivered either as lump-sum transfers or in five weekly installments of KES 10,000, randomly assigned at the village level.[2]

Before participants received a cash transfer, they were contacted over the phone or in person by a Busara field officer, who informed them that they had been entered into a lottery and their name had been selected to receive KES 50,000. The field officer emphasized that the cash transfer was entirely unconditional. They told participants: "The money is yours to do whatever you like with – we have no preferences about what you do with the money. You should use it however you think best".

2.2 Sampling Strategy

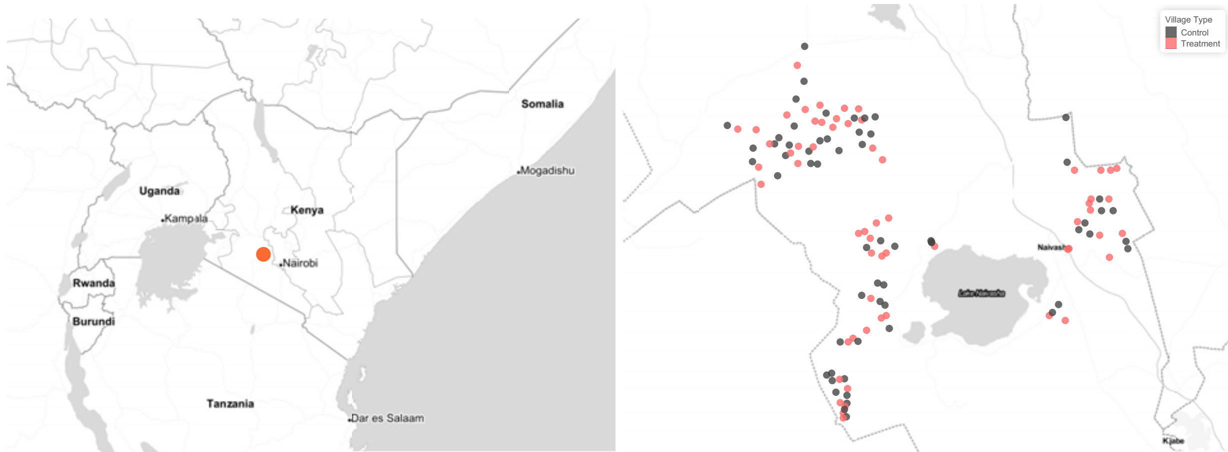
Households were sampled as follows. First, 60 villages in Nakuru County were randomly selected to receive the cash treatment. Potential study households within each village were identified by houses built without brick, stone, or metal walls, as a proxy for low income. Once identified, ten of these houses in each village were randomly selected. The two eligible households nearest to each of the initially selected ten were also included in the sample. Within each cluster of three households, one was randomly selected to receive the UCT, while the other two acted as a "spillover" condition. One adult in each of the selected households was chosen as the recipient (in the case of the treatment households) or the survey participant (in the case of the spillover households). Another 60 villages acted as "control" villages, for which participants were simply surveyed without any intervention. Eligible control households were identified in the same manner as in the treatment condition, with every household participating in the survey.

The full sample consists of 540 treatment households, 1,077 spillover households, and 1,545 control households. Between August 2018 and May 2019, a year after the original trial had ended, 521 treatment, 1,045 spillover, and 1,473 control households participated in an endline survey. Of those, 362 treatment, 733 spillover, and 1,019 control households had at least one child between the ages of 6 and 17 years old at the time of our study.[3] Our sample of children was selected from those children who were present

[2] The differences between these two conditions are not of interest to the current study.

[3] We focus on this age range for our study to ensure comprehension of the tasks and survey questions. We found it difficult to

Figure 1: Study area



Notes: The figure presents the control and treatment villages included in our study in Nakuru County, Kenya.

at both the baseline and endline rosters of the initial study and who are in the targeted age range. Due to budget constraints we do not collect data from every child in the full sample. Rather, we selected all treatment households and interviewed all children in our target age range in these households. To select households from the spillover and control groups, we randomly dropped the same number of households from spillover and control households (155 each). Dropping full households from the sample allowed us to collect data from all children in the targeted age range within the remaining households. The benefit of this strategy is that we have data on all siblings within a household.

In total, we completed the surveys and behavioral games with 4,022 children in 1,687 households. We were able to successfully implement with 93% of the sample of children that met our criteria. This corresponds to 820 children in the treatment households, 1,308 children in the spillover households, and 1,894 children in the pure control households. We also targeted one adult per household for a short survey with modules on assets, consumption, and psychological well-being. We were able to complete 95% of adult surveys, corresponding to 1,656 adults when we restrict the sample to those whose children also completed the activities. We report tracking rates by treatment group in Table A.1. We did not experience differential attrition of children or adults by treatment status.

administer the survey and tasks to younger children in our piloting. Additionally, this age range allows children to be of a sufficient age when exposed to the treatment. Children under 6 years old at the time of our study would have been younger than 2 years old at the time of the treatment.

2.3 Data Collection

We contacted selected households to collect the survey and game data from children and survey data from adults. The behavioral games and surveys were completed in one-on-one sessions with the respondent and the enumerator. Each session consisted of a survey and standard economic games (i.e., DG, UG, 3PD, JOD, and PGG). The survey and the games were administered on touchscreen tablets, using SurveyCTO software for the surveys and oTree software for the games. Field officers read instructions to the participants in Swahili or English, depending on the participant's preference, and provided examples of how to play the games using physical props to maximize comprehension.

The visit took the following structure. After obtaining parental consent and child assent, the child completed a short survey to measure children's explicitly self-reported social preferences, among other things. Specifically, we asked about participants' mental health, dispositional and descriptive envy, feelings of trust and closeness toward various other parties, attitudes surrounding zero-sum thinking and locus of control, and perceived social norms surrounding sharing resources (earned either by luck or hard work). The survey included some standard modules: CESD-10 module for children to measure self-reported depression (Weissman et al., 1980), World Value Survey's happiness and life satisfaction questions, Children's Hope Scale (Snyder et al., 1997), the Benign and Malicious Envy Scale (BeMaS; Lange and Crusius, 2015), closeness (Aron et al., 1992), and Raven's Matrices. We created additional survey modules to measure descriptive envy, trust, zero-sum thinking, locus of control, and perceived norms surrounding sharing. These are described in detail in Appendix C, Section 3.1.

The child then completed the experimental tasks. Each child completed three rounds of four different experimental games, and one round of the PGG, all of which are described in detail below. Game order was randomized at the participant level. Before each game, the child received extensive instructions and examples, and completed comprehension questions to ensure understanding. When games were played a second and third time, the child was asked whether they remembered the rules of the game; if they did not remember, they were reminded of the rules prior to continuing.

In the DG, the participant was assigned to be player 1. Player 1 chooses how much of a 10-token endowment to send to player 2. The participant indicated how much they wanted to allocate to the other player by dragging each of the 10 tokens presented on a tablet screen into one of two baskets, representing the participant's and the other player's payout. See Figure C.1 for an example of how the task appeared on the tablet. The outcome of interest is the amount the participant sends to player 2. A version of this game has been previously used in a number of studies, including by Habyarimana et al. (2007), Berge et al. (2015), and Hoffman et al. (1996) as well as in studies using children as young as 3 years old (Benenson et al., 2007; Blake and Rand, 2010; Smith et al., 2013; Chernyak et al., 2018). This game is widely considered to be a measure of altruism.

In the UG, player 1 receives an endowment of 10 tokens and proposes a split of that endowment to player 2 (see Figure C.2 for an example). Player 2 can then decide to accept or reject player 1's offer. If player 2 accepts, both players receive the allocation proposed by player 1. If player 2 rejects, both players receive 0 tokens. Versions of this game have previously been used in a number of studies using children (e.g., Wittig et al., 2013; Sutter, 2007; Takagishi et al., 2010). Children played both as player 1 (UG1), for which our outcome of interest is the share of tokens shared, and as player 2 (UG2), for which we measure whether they accept or reject the offer from the other player. In addition to measuring altruism among individuals acting as player 1, this task also measures expectations regarding fairness among those acting as player 2.

The 3PD is similar to the DG except that, rather than dividing the 10-token endowment between themselves and another player, the participant divides the endowment between two anonymous players (see Figure C.4 for an example). In this task, the participant has no opportunity to keep any of the endowment for themselves. Variations of this game have previously been used in children (e.g., Cappelen et al., 2020). The outcome of interest is whether participants from different treatment arms make unequal distributions and how this relates to the other players' characteristics, particularly their relative wealth.

The JOD, first introduced by Zizzo and Oswald (2001), allows participants to pay from their own endowment to reduce the endowment of another player. The participant and their partner both receive an endowment of 10 tokens, and the participant can then decide to reduce their partner's endowment by giving up some of their own. There is an exchange rate of 2:1, meaning that for each token the participant spends, their partner loses two tokens. (See Figure C.5 for an example). This task measures an individual's willingness to engage in costly destructive behavior, which is interpreted as a sign of envy. We are particularly interested in whether individuals are more likely to destroy the other player's endowment based on the participant's treatment status and the other player's relative wealth. Versions of this game have been previously used in rural African settings to measure inequality aversion and retaliation (Kebede and Zizzo, 2015), though to the best of our knowledge it has never been employed in children.

In the PGG (see Figure C.6), participants play in groups of four. All four players are given an endowment of 10 tokens, any proportion of which they can "invest" in the public good. The total amount invested in the public good by all four players gets doubled, and this doubled amount is then evenly divided between the four players. To maximize personal payoffs, it is in participants' interest to keep their entire endowment for themselves and "free-ride" on the other three players' investment. However, to maximize communal payoffs, all participants should invest their entire endowment. Thus, the key measure here is how much participants contribute to the public good, whether they act in line with free-riding or communal maximization. This game has typically been used in adults, though it has recently been adapted for children (e.g., Silva et al., 2016; Vogelsang et al., 2014).

For each of the experimental tasks, participants were randomly paired with one or several other players, depending on the game. Participants were not informed of their partner's exact identity, nor was a partner ever actually present. In the first (neutral) round of each game, participants were simply told that their opponents were from a village like their own, and were informed of their partner's age group and gender. Once the participant played all games in their neutral version, we proceeded to the wealth-information rounds. Participants play two additional consecutive rounds of the DG, UG, 3PD, and JOD, now including information about the other player's relative wealth (once richer and once poorer than the respondent's household, in a random order). We estimate the relative wealth using household assets at endline. For all games, participants were told the other players would have the same information about them. In all games and rounds, the identity of the other players was randomized at the individual level. The participants were paired with each gender with equal probability. However, we over-weighted their probability of being paired with someone close in age, given that we are interested in behavior with peers. More precisely, the random assignment of each opponent's age come from a probability distribution where 50 percent is within the two years of the respondent's age and the remaining 50 percent come from a uniform distribution of the other ages.

Once the participant had completed all of the games, their payouts were calculated. Compensation for the child respondents consisted of a participation fee and task-based payout, which varied according to the choices they made during each game. Tokens were used instead of money, which participants then converted into prizes. The prize options and the number of tokens required to purchase each prize was shown to the children before the session. To calculate the respondent's payout, we identified previous participants who matched the characteristics of the participant's partner for each game – i.e., gender, age, and relative household wealth. In order to facilitate timely matching and payout calculation, we collected data from at least one participant of each of the possible player types, and observed their game play in the different games against other player types. This allowed us to calculate payoffs using this database of game play. This pool of player behavior continuously grew as the study progressed. One randomly-selected round of each game was paid out using the respondent's choices and the choices of the participant they were randomly matched with.

To assess the persistence of the cash transfers' impact on household consumption, asset ownership, and individual well-being, we also surveyed adults in the household. We used the same consumption and assets modules used in Haushofer et al. (2020) for comparison with the previous endline. The individual well-being module was a short survey including the World Value Survey's happiness and life satisfaction questions, the MacArthur ladder (a measure of subjective social status), and PHQ-2 (a 2-item measure of depression).

3. Econometric Approach

We are interested in how psycho-social outcomes and game behavior of participants vary based on treatment status. Below we explain our estimating equations for the adult and child surveys and for the children's behavioral game data.

3.1 Estimating Equation for Adult Survey

We begin by analyzing survey outcomes for the household adults in our sample. Our baseline estimating equation, following Haushofer et al. (2020), takes the following form:

$$y_{hv} = \beta_1 \mathit{CashTransfer}_{hv} + \beta_2 \mathit{Spillover}_{hv} + \mathbf{X_{hv}}\beta + \varepsilon_{hv} \tag{1}$$

In equation 1, y_{hv} is the outcome of interest, where h indexes the adult of the household that was surveyed in village v. The variable $\mathit{CashTransfer}_{hv}$ is an indicator variable equal to 1 if the participant's household received the cash transfer. The variable $\mathit{Spillover}_{hv}$ is an indicator variable equal to 1 if the participant's household was in the spillover condition. X_{hv} is a vector of stratification variables, including indicators for the respondents' gender, having M-Pesa access (a mobile money transfer system that allows people to deposit and withdraw money at numerous locations throughout the country) at baseline, and being above the median at baseline on the psychological well-being index and the asset index. Note, our specification follows Haushofer et al. (2020) as specified in our Pre-Analysis Plan (Haushofer et al., 2021).[4] Standard errors are clustered at the village level, which is the level at which treatment was assigned.

3.2 Estimating Equation for Child Survey

Our baseline estimating equation for the child survey outcomes takes the following form:

$$y_{ihv} = \alpha_{a(i)} + \alpha_{g(i)} + \beta_1 \mathit{CashTransfer}_{ihv} + \beta_2 \mathit{Spillover}_{ihv} + \mathbf{X_{hv}}\beta + \varepsilon_{ihv} \tag{2}$$

In equation 2, i indexes the child of parent h in village v. We include fixed effects for the respondent's

[4] The only difference is that we do not include the Intimate Partner Violence Index at baseline as a stratification variable control, because it is missing for 27% of our sample and it is not relevant for our outcomes of interest.

age and gender, denoted by $\alpha_{a(i)}$ and $\alpha_{g(i)}$. X_{hv} is the same vector of stratification variables as above, excluding the gender of the parent who responded the survey. Standard errors are also clustered at the village level.

3.3 Estimating Equation for Behavioral Games

For the games behavior analysis, we estimate equations analogous to equation 2. However, we also take into account information on the child's opponent in each game. Thus the estimating equations vary slightly based on whether the game is the first round with information of the other player's gender and age only, or the subsequent rounds when we include information on the other player's relative wealth.

Without wealth information

The estimating equation for the first version of the games, where the respondent is presented with information on the other player's age and gender is:

$$y_{ijhv} = \alpha_{a(i)} + \alpha_{a(j)} + \alpha_{g(i)} + \alpha_{g(j)} + \beta_1 \mathit{CashTransfer}_{ihv} + \beta_2 \mathit{Spillover}_{ihv} + \mathbf{X_{hv}}\beta + \varepsilon_{ijhv} \tag{3}$$

In equation 3, y_{ijhv} is the outcome of interest, where i indexes the child of parent h in village v who is paired with another child j. In addition to fixed effects for the respondent's age and gender, we include fixed effects for the other player's age and gender, denoted by $\alpha_{a(j)}$ and $\alpha_{g(j)}$. X_{hv} is the same vector of stratification variables defined in 2, and we add an indicator for the neutral version, i.e. whether the game included information about the other player's wealth. Again, standard errors are clustered at the village level.

With wealth information

Finally, we are able to ask whether game play differs based on the relative wealth of the other player. We estimate this as follows:

$$\begin{aligned} y_{ijhv} =& \alpha_{a(i)} + \alpha_{a(j)} + \alpha_{g(i)} + \alpha_{g(j)} + \beta_1 \mathit{CashTransfer}_{ihv} + \beta_2 \mathit{Spillover}_{ihv} + \mathbf{X_{hv}}\beta + \beta_3 \mathit{PoorerOpponent}_{ijh} \\ & + \beta_4 \mathit{PoorerOpponent} \times \mathit{CashTransfer}_{ijhv} + \beta_5 \mathit{PoorerOpponent} \times \mathit{Spillover}_{ijhv} + \varepsilon_{ijhv} \end{aligned} \tag{4}$$

In equation 4, y_{ijhv} is the outcome of interest exclusively for the wealth information games, where i indexes the child of parent h in village v who is paired with another child with characteristics j. The variable $\mathit{PoorerOpponent}_{ijh}$ is an indicator variable equal to 1 if child j comes from a poorer family than child i's family. The base category here is a richer opponent. Variables *PoorerOpponent* $\times$ *CashTransfer*$_{ijh}$ and *PoorerOpponent* $\times$ *Spillover*$_{ijh}$ are interaction terms between the relative wealth of the opponent and the treatment status.

3.4 Coefficients of Interest

We are interested in several coefficients. In equations (1)-(3) above, β_1 represents the effect of a participant's household receiving the cash transfer on allocation choices in the experiment, and β_2 represents the effect of a participant's household being in the spillover group.

For the adult survey, the consumption, assets and psychological well-being dependent variables are built following Haushofer et al. (2020), for direct comparison. To analyze the responses to the child survey, we construct an array of indices on psychological well-being, envy, trust, closeness, zero-sum thinking, locus of control, and perceived norms surrounding sharing money earned through luck or hard work, that serve as dependent variables. Details on the survey and variable construction can be found in Appendix 3.1.

In the DG, the dependent variable is the amount given by player i to player j. In the 3PD the dependent variable is whether the participant makes an unequal offer. In the UG the dependent variables are the amount offered by player i to player j, and whether player i accepts player j's offer in the second round. In the JOD, the outcomes of interest are whether the participant chooses to decrease the other player's endowment, and if so, by how much. In the PGG we examine how much the participant allocates to the public good.

4. Results

4.1 Effects on Economic Outcomes 3 Years After the Intervention

We first examine whether the results documented at the household level from the first endline (i.e., one year after the intervention) are still evident three years after the intervention. These results are presented in Table 1. The first 3 columns present the results from the first endline in 2018. Columns (4)-(6) present the results from 2021. The results from 2021 suggest no significant differences between the treatment or the spillover conditions compared to the pure control with regard to consumption or assets. This suggests the effects of the cash transfers on consumption and assets for the treatment households have dissipated over time.

Table 1: Persistent effects of cash transfers on consumption and assets

	First Endline 2018/2019			Second Endline 2021			
	Pure Control Mean (1)	Treatment (2)	Spillover (3)	Pure Control Mean (4)	Treatment (5)	Spillover (6)	N (7)
Consumption in USD, PPP							
Monthly per-capita non-durable consumption	44.258	9.193***	4.476*	54.230	3.717	2.672	1656
	(31.142)	(2.751)	(2.652)	(43.728)	(3.817)	(3.292)	
Expenditure on food	30.260	5.075**	2.572	33.121	2.967	2.962	1656
	(22.451)	(2.023)	(2.015)	(26.817)	(2.549)	(2.146)	
Expenditure on temptation goods	0.089	0.059	0.039	0.578	0.087	0.089	1656
	(0.465)	(0.048)	(0.033)	(2.327)	(0.176)	(0.157)	
Expenditure on personal and household items	3.871	0.669*	0.145	7.695	0.735	0.288	1656
	(4.439)	(0.371)	(0.306)	(8.503)	(0.732)	(0.617)	
Expenditure on housing repair or improvement	0.886	1.535***	0.206	2.804	0.300	−0.262	1654
	(4.036)	(0.472)	(0.271)	(9.014)	(0.616)	(0.466)	
Expenditure on education	5.874	0.672	0.977**	5.161	−0.443	0.105	1654
	(6.723)	(0.523)	(0.420)	(7.296)	(0.428)	(0.430)	
Medical expenditure	1.605	0.113	0.312	1.608	0.270	−0.018	1651
	(3.717)	(0.238)	(0.282)	(4.066)	(0.277)	(0.239)	
Social expenditure	0.822	0.167	0.078	1.581	0.190	0.156	1656
	(1.382)	(0.106)	(0.106)	(2.867)	(0.212)	(0.203)	
Assets in USD, PPP							
Total value of assets household owns	596.821	200.349***	29.846	881.562	120.836	157.471*	1656
	(673.191)	(50.961)	(41.648)	(1101.693)	(81.591)	(93.740)	
Value of productive assets	40.774	9.371**	1.494	68.192	−1.719	14.673	1656
	(53.584)	(4.448)	(3.296)	(181.229)	(13.274)	(17.774)	
Value of vehicles	146.107	84.729***	3.344	251.067	51.621	−1.467	1656
	(389.872)	(29.731)	(22.439)	(560.097)	(39.066)	(30.296)	
Value of furniture	339.295	77.736***	22.617	411.052	50.019	54.951*	1656
	(265.438)	(26.210)	(22.508)	(312.793)	(31.427)	(30.644)	
Value of durables	146.864	36.710***	2.118	209.536	20.542	5.533	1656
	(170.635)	(10.895)	(9.838)	(224.283)	(17.562)	(15.319)	
Net value of financial assets	−76.219	−8.197	0.273	−114.389	19.738	37.000	1654
	(246.531)	(19.443)	(15.438)	(461.787)	(30.390)	(25.091)	
Value of land	18629.156	−1593.152	−2948.585	23683.192	−1260.995	−2129.781	1549
	(33593.710)	(2190.737)	(2400.227)	(37257.373)	(2833.492)	(2392.663)	

Notes: The table presents OLS estimates of treatment effects. The outcome variables, measured in 2018/2019 and in 2021, are listed on the left. We restrict the sample of the First Endline to those households surveyed in the Second Endline. The first and fourth columns shows the pure control group mean and standard deviation (in parentheses) of the outcome variable. Standard errors, clustered at the village level, are shown in parentheses for the Treatment and Spillover columns. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

4.2 Effects on Psycho-social Well-Being

The effects of the treatment on participants' psycho-social well-being are summarized in Table 2, with the itemized results for adults and children presented in Figures A.1 and A.2, respectively. Individuals in the spillover condition reported lower psychological well-being, compared to both the pure control and treatment conditions. Among adults (Panel A), spillover participants reported higher depression and lower life satisfaction compared to pure control participants. Meanwhile, treatment participants reported greater happiness than pure control participants (though happiness did not differ between treatment and spillover participants). Finally, despite not seeing any sustained differences in assets or consumption, treatment adults relative to spillover adults did report higher subjective social status (as measured by higher scores on the MacArthur Ladder).

Turning to the child participants (Panel B), those from spillover households reported worse mental health compared to both those from treatment households and those from pure control households. This is driven by indicators of life satisfaction, where, like their parents, spillover children reported lower scores than both treatment and pure control participants.

Another significant effect that emerged is that children in the treatment condition reported higher malicious envy than children in the both the spillover and pure control conditions. For the other psycho-social outcomes like benign or descriptive envy, trust, social closeness, zero-sum thinking, or locus of control there are no significant differences across conditions.

To understand the relationship between parents' and children's psycho-social well-being, we first examined a simple correlation between the children's mental health index and their parent's psychological well-being index, for those in the control group. The correlation coefficient is 0.11 and the associated t-statistic is 4.75, suggesting that parent and child mental health are correlated. We show the resulting binscatter in Figure A.3.

We further analyze the heterogeneity in children's scores as a function of their parents' Psychological Well-Being Index (PWBI), specifically whether the PWBI was above or below median. Results are reported in Table A.2. Column 3 indicates that children with parents whose PWBI was below the median also have significantly lower mental health. This was driven by lower levels of happiness and life satisfaction. Additionally, children with parents who have low psychological well-being report a lower closeness index (i.e., feeling less close to their family, friends, and others in their village) and a higher descriptive envy index (i.e., observing more envy amongst others they know).

In Columns 4 and 5, we test the interaction between parents' PWBI and both treatment and spillover conditions. Results show no significant interaction effects, suggesting that the effect of parents' PWBI on children's psycho-social outcomes persist regardless of treatment condition. Given that adults in the spillover condition report lower psychological well-being, the direct effect of parents' mental health on that of their children's likely explains why children in the spillover condition also report lower mental health.

4.3 Effects on Prosocial Behavior of Children

4.3.1 Descriptive Analysis

We now turn to examining how cash transfers affected the prosocial behavior of children in our behavioral games. Table 3 presents summary statistics for our sample of children that participated in all versions of our five games. There are no differences between treatment, control, and spillover groups in terms of demographics: gender, age, years of education, an indicator for their education being in track with age,

Table 2: Effects of cash transfers on psycho-social well-being

	Treatment	Spillover	(1) vs (2) p-value	N
	(1)	(2)	(3)	(4)
Panel A – Adults				
Psychological well-being index	0.011	−0.117*	0.055	1656
	(0.073)	(0.062)		
Happiness (WVS)	0.156**	0.119	0.564	1654
	(0.073)	(0.085)		
Life satisfaction (WVS)	−0.040	−0.115*	0.228	1656
	(0.070)	(0.059)		
MacArthur Ladder	0.073	−0.077	0.073	1656
	(0.087)	(0.078)		
PHQ-2 Depression	0.069	0.143*	0.237	1656
	(0.090)	(0.082)		
Panel B – Children				
Mental Health Index	−0.005	−0.113*	0.050	4022
	(0.060)	(0.061)		
CESD index	0.050	0.117	0.156	4022
	(0.071)	(0.072)		
Happiness (WVS)	0.033	0.001	0.491	4011
	(0.055)	(0.052)		
Life satisfaction (WVS)	−0.034	−0.150**	0.028	4022
	(0.071)	(0.067)		
Hope Index	0.041	−0.010	0.318	4022
	(0.061)	(0.065)		
Benign Envy Scale Index	0.046	0.048	0.976	4022
	(0.077)	(0.079)		
Malicious Envy Scale Index	0.164*	0.039	0.017	4022
	(0.083)	(0.077)		
Descriptive Envy Index	0.005	0.072	0.178	4021
	(0.074)	(0.062)		
Trust Index	−0.028	0.028	0.307	4022
	(0.061)	(0.061)		
Closeness Index	−0.011	−0.020	0.830	4022
	(0.056)	(0.057)		
Sharing index: Money earned by luck	0.009	0.008	0.993	4021
	(0.044)	(0.047)		
Sharing index: Money earned by hard work	−0.051	−0.080	0.584	4022
	(0.060)	(0.058)		
Zero-sum Thinking Index	0.065	0.029	0.465	4021
	(0.074)	(0.070)		
Locus of Control Statements Index	−0.044	−0.013	0.497	4018
	(0.047)	(0.041)		

Notes: The table presents OLS estimates of treatment effects on psycho-social well-being survey outcomes for adults and children. Outcome variables are listed on the left. The pure control group mean and standard deviation are 0 and 1 respectively for all outcome variables listed. Columns (1) and (2) show the treatment effects of the cash and spillover groups, respectively, relative to the pure control group. Column (3) shows the p-value of the difference test between treatment and spillover coefficients. Column (4) shows the number of observations. Regressions in Panel A include controls for gender and other stratification variables in Equation 1. Regressions in Panel B include controls for the child age and gender and the stratification variables in Equation 2. Standard errors are clustered at the village level. * p < 0.1, ** p < 0.05, *** p < 0.01.

and household size. Note, we may have expected that treatment affected schooling outcomes, but that does not seem to be the case.

In Panel B, we present means regarding game comprehension: number of incorrect test questions before the games, comprehension score given by enumerators (on a scale 1-5), and minutes spent completing the games. Similarly, we do not find differences across treatment arms.

Table 3: Child demographics and game summary statistics

	Pure Control Mean (1)	Treatment (2)	Spillover (3)	(2) vs (3) p-value (4)	N (5)
Panel A – Demographics					
Share female	0.474	0.020	0.018	0.935	4022
	(0.499)	(0.023)	(0.018)		
Child age	12.142	−0.083	0.065	0.305	4022
	(3.344)	(0.148)	(0.113)		
Years of education	5.738	−0.161	−0.037	0.426	4022
	(3.303)	(0.182)	(0.132)		
$\mathbb{1}$(Education on track with age)	0.817	−0.032	−0.017	0.503	4022
	(0.387)	(0.025)	(0.025)		
Household size	6.341	−0.045	−0.080	0.860	3962
	(2.217)	(0.170)	(0.159)		
Panel B – Games					
Wrong test questions	1.127	0.046	0.197	0.252	4022
	(2.144)	(0.191)	(0.196)		
Field Officer comprehension score	3.002	−0.017	−0.038	0.694	3646
	(0.969)	(0.097)	(0.088)		
Minutes spent in games	43.924	−0.826	1.255	0.011	4022
	(15.275)	(1.613)	(1.522)		

Notes: This table presents OLS estimates of demographics and game comprehension for children. Outcome variables are listed on the left. The first column shows the pure control group mean and standard deviation (in parentheses) of the outcome variable. Columns (2) and (3) show the treatment effects of the cash, and spillover groups, respectively, relative to the pure control group. Column (4) shows the p-value of the difference test between treatment and spillover coefficients. Column (5) shows the number of observations. Standard errors are clustered at the village level. * p <0.1, ** p <0.05, *** p<0.01.

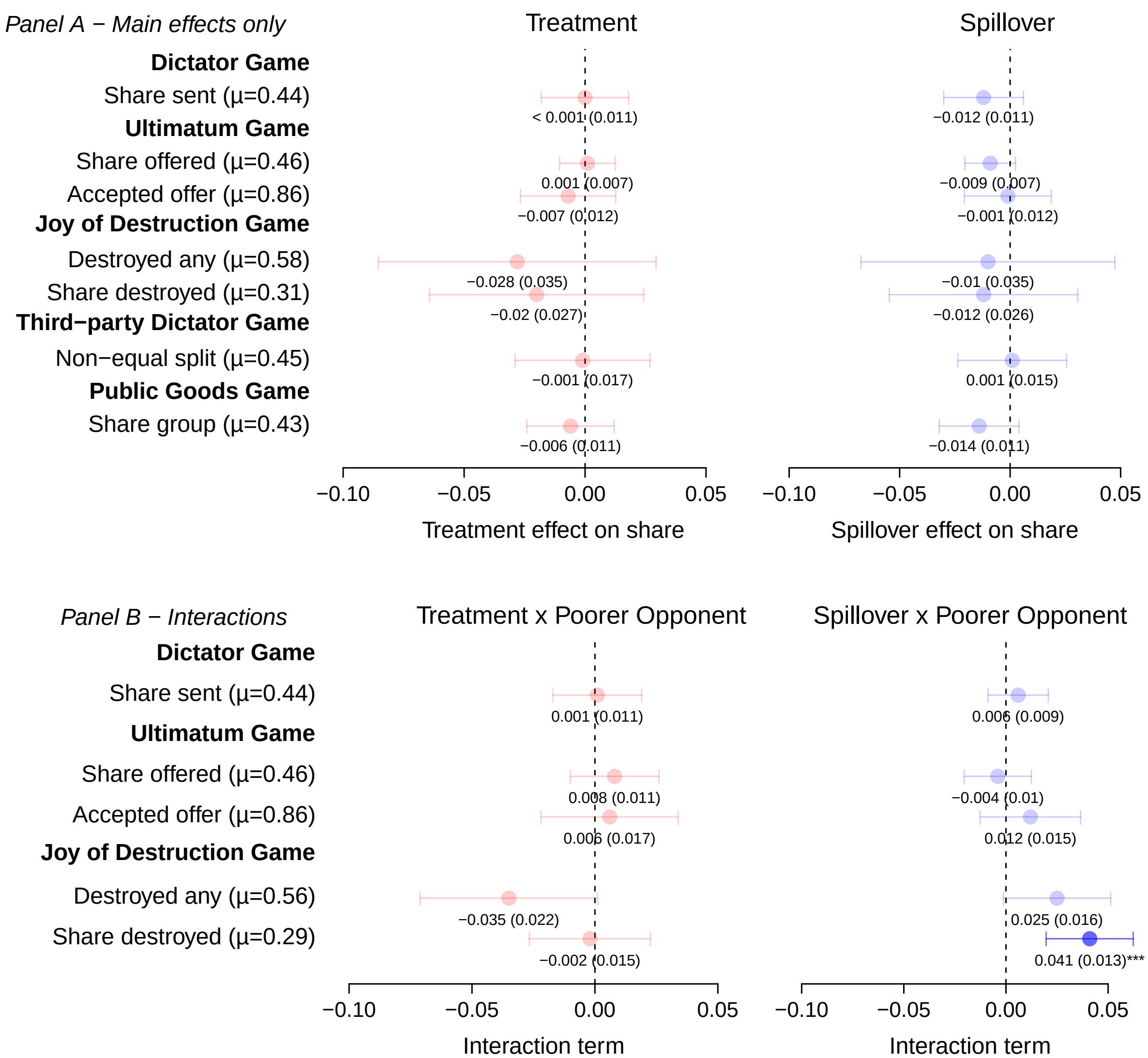
We also present means of game behavior for each game across treatment groups, gender, age groups, and family composition in Figure B.1 (see Table B.1 for a summary statistics table). In Figure B.2 we present histograms of the distribution of our game outcome variables.

4.3.2 Behavioral Game Results

Figure 2 presents the results of our analysis for seven outcomes across our five behavioral games. Panel A shows the main effects estimated following Equation 3. There are no significant effects of the cash transfer on children's behaviors in the games for children in treated or spillover households.

Panel B of Figure 2 presents the results for the games in which participants received information on the relative wealth of their partners, following Equation 4. It plots the coefficient on treatment or spillover interacted with being paired with a poorer partner. There is little evidence of differential behavior by treatment or spillover status when paired with a poorer partner. The only significant interaction that emerged was for the JOD. Children from spillover households destroyed a larger share of their partners' endowment when the partner was poorer. Appendix Table B.2 is the corresponding table for this figure. Appendix Table B.3 presents the results when we restrict our sample to games played in the neutral version only, i.e., without wealth information of the opponent. The results are largely unchanged.

Figure 2: Treatment effects on games behavior



Notes: The figure presents estimated treatment coefficients for games behavior outcomes. Each row represents a different outcome variable. In Panel A, each row displays our main two treatment effects, estimated by equation (1): cash treatment (left), and spillover (right). In Panel B, each row presents the interaction terms of cash treatment and spillover with the relative wealth of partner indicator. 90% confidence intervals are shown around each point estimate. Estimates which are significantly different from zero at the 10 percent level are shown in darker shades. Note that for the JOD outcomes, lower values of destruction correspond to higher pro-social behavior.

To help interpret these null results, and to alleviate concerns with respect to the statistical power of our study, we use the standard errors obtained in each estimation to calculate the minimum effect sizes we would be able to detect with 80% probability. We illustrate these results in Figure B.3. Depending on the outcome, we are able to reject changes in game behavior of sizes ranging from 2 to 10 percentage points (pp), which corresponds to differences of around 1/5 to 1 out of the 10 tokens used in each game. Specifically, in the DG and PGG, we can reject effect sizes larger than 3pp. In the UG, we can reject changes greater than 2pp in the share of tokens offered, and greater than 3pp in the share of tokens accepted. For the JOD, we can reject a 10pp change in the "Destroyed Any" indicator, and a shift of over 7pp in the share of tokens destroyed. In the 3PD, we reject changes of at least 4pp. Thus, our power analysis suggests we have power to reject fairly small effect sizes.

Our results contrast with the existing literature that suggests that children from low SES backgrounds are less altruistic and more spiteful (Sutter et al., 2019; Bauer et al., 2014; Benenson et al., 2007; Chernyak et al., 2018). When wealth is varied exogenously, it does not have a sizable impact on social preferences. We are able to reject effect sizes smaller than the ones found in Bauer et al. (2014) for low parental education, and Chernyak et al. (2018) for subjective beliefs of wealth (16pp and 46 pp respectively).[5]

4.3.3 Heterogeneous Effects

We test the data for heterogeneity based on the characteristics of both the respondent and the other player in the economic exchange games. Note, Table C.1 shows which pieces of analysis were pre-specified in our Pre-Analysis Plan and which are exploratory (Haushofer et al., 2021). Panel A of Table B.5 suggests no treatment effect heterogeneity by respondent age group, and some evidence of older children (14-17 years old) in the spillover group being more prosocial in the UG and JOD. Meanwhile, Panel B presents heterogeneity by respondent gender. Female participants in both the treatment and the spillover groups destroyed less in the JOD than male participants in the pure control group.

We also examine heterogeneity in game play based on the participants' household baseline wealth. These results are reported in Panel C of Table B.5. Specifically, we divided participants by whether their family's wealth at baseline (i.e., before the treatment was administered) was above or below the median across the entire sample. Children in the spillover condition from wealthier families shared more in the DG, UG, and PGG than children in the pure control condition from less wealthy families. At the same time, spillover children from wealthier families also were more likely to destroy their partners' endowments, and more likely to destroy more of their partners' endowments, in the JOD. The only effect found for treated children from wealthier families was that they shared more in the DG, but this increase in prosociality

[5] Sutter et al. (2019) is a review and Benenson et al. (2007) does not report coefficients.

was not mirrored in any of the other games.

We next turn to heterogeneity by village characteristics. Specifically, we examine whether the socioeconomic conditions of the village at baseline interact with the effects of treatment. Results are reported in Table B.6. First, we examine heterogeneity by village with assets below the median asset-level for the entire sample in Panel A. Results suggest that spillover children who came from villages with low asset-levels at baseline were overall less prosocial. This is driven by their increased likelihood to destroy their partners' endowment in the JOD, and their propensity to destroy more of that endowment in the JOD. The only effect for treated children from villages with low asset-levels at baseline was a decreased likelihood to choose an unequal split in the 3PD, but this behavior was not substantiated in other games.

Next, we examine heterogeneity by whether participants come from villages with above median inequality at baseline in Panel B. In villages with high inequality at baseline, children in both treated and spillover households give more in the DG and UG and are more likely to reject offers in the UG.

Finally, we examine heterogeneity by characteristics of participants' partners in Tables B.7 and B.8. Specifically, participants received information about their partners' wealth, age, and gender. In Tables B.7 we explore whether children treat individuals who share the same age or same gender differently. As indicated in Panel A, there is some evidence that spillover children were more prosocial toward same-age partners. Specifically, spillover children were more likely to accept the offer from a same-age partner in the UG. Otherwise, no other effects were moderated by the age of the partner. Panel B of Table B.7 shows that there were no effects of being paired with a same gender partner. We also explore whether children treat some groups differently, regardless of their own characteristics. Panel A of Table B.8 shows that children are slightly more prosocial towards opponents in the youngest age bracket (6-9 years old). They send those in the youngest age bracket a larger share in the DG and are less likely to destroy a portion of their partner's endowment in the JOD. Spillover children are also more likely to offer a larger share of tokens to these children in the UG. Children do not behave differently with female partners as shown in Panel B of Table B.8.

4.3.4 Robustness

We undertake a number of sensitivity checks to test the robustness of our findings as specified in our pre-analysis plan (Haushofer et al., 2021). In Figure B.4 we present sensitivity of our main results on game behavior to adding different sets of fixed effects. In particular, we control for day-of-week fixed effects, round 1 vs. round 2 fixed effects in the wealth information games (i.e., whether they first played against a poorer or a richer opponent), and enumerator fixed effects.

While the first two additional fixed effects do not substantially change our results, the results are somewhat sensitive to the inclusion of enumerator fixed effects. Once we add enumerator fixed effects, we find that children in spillover households share on average 0.14 tokens less (out of 10) in the DG and 0.12 tokens less in the UG. Even if we cannot reject that living near families that received the transfers had a negative impact on the prosocial preferences of children in spillover households, these results are small in magnitude, representing a change of less than 3% relative to the control mean.

We also calculate p-values using randomization inference, which are presented in our table version of Figure 2 (Table B.2). Specifically, we follow Young (2018), and for each level of randomization (village and household), we replicate our original procedure, and assign placebo treatments. Following this placebo assignment, we test for average treatment effects. We perform this procedure 1,000 times and compare the distribution of coefficients from these placebo assignments to our coefficients from our true treatment status. The randomization inference p-values are reported in brackets in Table B.2 and yield virtually the same results.

Finally, we check for and omit influential observations using DFBETAS (Belsley et al., 1980).[6] Tables A.3 and B.4 show these results for psycho-social well-being and children's game behavior, respectively. Results remain largely similar, except for a single result in the DG, where children in the treatment group appear to be more pro-social. However, this result is small in magnitude; less than 3pp, which is the minimum effect size we claim to be able to reject.

5. Conclusion

This paper examines how cash transfers affect the prosocial behavior of children in both treated and spillover households, using surveys and behavioral games with over 4,000 children in Kenya. We report several key results. First, there are no long-run effects of the cash transfers on economic outcomes for treated households 3 years after the end of the intervention. Second, there is some evidence of negative spillover effects on the psychological well-being of adults and children in spillover households.

Importantly, we find no evidence that receiving a cash transfer affects the prosocial behavior of children in treated households on average. Across all of our game measures, treated children are no more (or less) prosocial than control children. We find some weak but inconsistent evidence of negative effects on prosocial behavior of children in spillover households. While these results are not statistically significant in our main specification, once we add enumerator fixed effects, children in spillover households are slightly

[6] Following standard practice, observations were deemed influential if the DFBETA values for any of our main independent variables exceeded $\frac{2}{\sqrt{n}}$, where n is the sample size of the regression.

less generous in the DG and the UG. Additionally, we find that spillover children are more destructive in the JOD when they are paired with a poorer partner. Similarly, spillover children from poorer villages are more likely to destroy the partner's endowment in the JOD. Finally, children from poorer households are less prosocial than those from wealthier households in the DG, UG, and PGG.

Our paper makes several important contributions. First, we develop game protocols that can be easily implemented with children aged 6 to 17 in a low-income, rural setting. Second, we collect comprehensive survey and experimental data from over 4,000 children, who tend to be underrepresented in economic studies. Finally, while most evaluations of cash transfers tend to focus on the economic and psychological effects, we provide important evidence on the effects of cash transfers for the prosocial preferences for children. We find little evidence for positive effects on the prosocial behavior of children in treatment households; we also do not find robust evidence of negative effects for spillover children on average. However, these null findings mask some heterogeneity. In particular, we find suggestive evidence of less prosocial behavior in children who observe the families of their peers receiving cash transfers, especially when they are poor themselves, and when they are playing with poorer partners. These results suggest that poverty may make children more susceptible to spiteful and uncharitable behavior when they observe others receiving support. Interestingly, these effects are not mirrored in survey measures of envy, although it is possible that these are more susceptible to demand effects than behavior in the economic games.

Together, our study sheds light on the effects of cash transfers of the prosocial behavior of children, both amongst recipients and non-recipients. The fact that we observe little evidence of negative effects suggests that cash transfers do not substantially damage the social fabric of recipient villages on average. However, our heterogeneity results nevertheless caution that some groups — especially those who were "left out" — may display less prosocial behavior as a result. Policy makers who deploy cash transfers may wish to adjust the design of these programs to take these effects into account.

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Supplementary Appendix for

"The Effects of Cash Transfers on Social Preferences in Children"

List of Figures

List of Tables

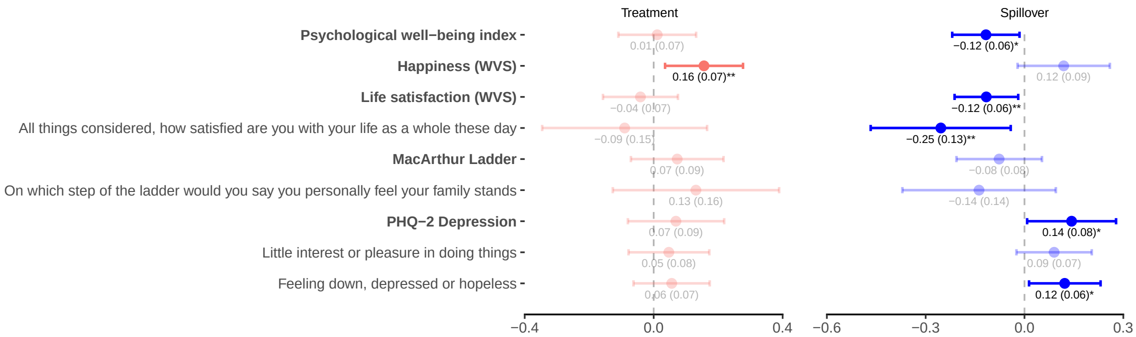
A. Additional Tables and Figures for Survey Analysis

Table A.1: Tracking rates at the household level

	Children			Adults
	Share of children completed (1)	$\mathbb{1}$(All children completed) (2)	$\mathbb{1}$(At least one child completed) (3)	$\mathbb{1}$(Completed adult survey) (4)
Treatment	0.011	0.008	0.011	0.017
	(0.014)	(0.020)	(0.013)	(0.012)
Spillover	−0.006	−0.008	−0.008	0.000
	(0.013)	(0.017)	(0.012)	(0.012)
Pure Control (mean)	0.929	0.896	0.950	0.952
Treatment = Spillover p-value	0.165	0.331	0.105	0.107
Households	1777	1777	1777	1777

Notes: Table A.1 shows OLS estimates of tracking rates between baseline and endline. Column (1) regresses the share of children within the 6-17 year old bracket who completed games and survey activities in each household. Column (2) regresses an indicator for all children in the age bracket completing the games and survey activities. Column (3) regresses an indicator for at least one child tracked in the household. Column (4) regresses an indicator of the share of adults that completed the survey. Standard errors, clustered at the village level, are shown in parentheses.

Figure A.1: Itemized effects of cash transfers on adults' psycho-social well-being

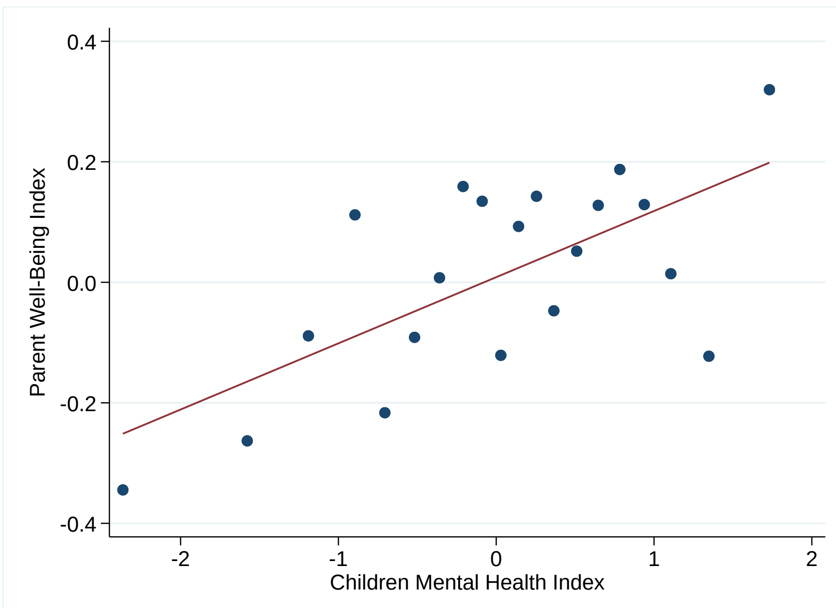


Notes: Estimated treatment coefficients for mental health survey outcomes for adults. Each row represents a different outcome variable, including indices and their components. Each row displays our main two treatment effects, estimated by equation 1: cash treatment (left), and spillover (right). 90% confidence intervals are shown around each point estimate. Estimates which are significantly different from zero at the 10 percent level are shown in darker shades.

Figure A.2: Itemized effects of cash transfers on children's psycho-social well-being

Notes: Estimated treatment coefficients for survey outcomes. Each row represents a different outcome variable. Each row displays our main two treatment effects, estimated by equation 1: cash treatment (left), and spillover (right). 90% confidence intervals are shown around each point estimate. Estimates which are significantly different from zero at the 10 percent level are shown in darker shades.

Figure A.3: Parent and child mental health correlation



*Notes:*Figure A.3 presents a binscatter of the relationship between Parent Psychological Well-Being Index and Children Mental Health Index. The sample is restricted to the control group. The correlation coefficient = 0.11 and the associated t-statistic = 4.75.

Table A.2: Heterogeneous effects of cash transfers on mental health

	Treatment (1)	Spillover (2)	Parent PWBI below median (3)	Treatment × Parent PWBI below median (4)	Spillover × Parent PWBI below median (5)	N (6)
Children						
Mental Health Index	0.029	−0.070	-0.194^{***}	−0.063	−0.042	3962
	(0.065)	(0.063)	(0.050)	(0.087)	(0.075)	
CESD index	−0.018	0.084	0.065	0.124	0.031	3962
	(0.086)	(0.083)	(0.064)	(0.100)	(0.098)	
Happiness (WVS)	0.001	0.015	-0.079^{*}	0.060	−0.026	3952
	(0.060)	(0.059)	(0.045)	(0.089)	(0.071)	
Life satisfaction (WVS)	−0.020	-0.174^{**}	-0.270^{***}	−0.029	0.086	3962
	(0.068)	(0.067)	(0.054)	(0.098)	(0.084)	
Hope Index	0.069	0.068	−0.075	−0.052	−0.122	3962
	(0.077)	(0.076)	(0.051)	(0.081)	(0.078)	
Benign Envy Scale Index	0.082	−0.015	−0.001	−0.075	0.123	3962
	(0.089)	(0.092)	(0.064)	(0.107)	(0.090)	
Malicious Envy Scale Index	0.166	−0.025	0.052	−0.003	0.114	3962
	(0.105)	(0.087)	(0.052)	(0.104)	(0.086)	
Descriptive Envy Index	−0.021	0.091	0.111^{**}	0.053	−0.055	3962
	(0.093)	(0.077)	(0.052)	(0.109)	(0.080)	
Trust Index	−0.009	0.047	0.032	−0.023	−0.028	3962
	(0.070)	(0.066)	(0.061)	(0.094)	(0.088)	
Closeness Index	−0.009	−0.009	-0.095^{*}	−0.010	−0.011	3962
	(0.063)	(0.069)	(0.057)	(0.091)	(0.082)	
Zero-sum Thinking Index	0.080	0.032	0.046	−0.038	−0.016	3962
	(0.084)	(0.086)	(0.057)	(0.099)	(0.094)	
Locus of Control Statements Index	−0.040	0.021	0.011	−0.000	−0.056	3959
	(0.052)	(0.055)	(0.057)	(0.089)	(0.083)	

Notes: OLS estimates of mental health outcomes for children. Outcome variables are listed on the left. The pure control group mean and standard deviation are 0 and 1 respectively for all outcome variables listed. Columns (1) and (2) show the treatment effects of the cash, and spillover groups, respectively, relative to the pure control group. Column (3) shows an indicator for the child's parent Psychological Well-Being Index (PWBI) being below median. Columns (4) and (5) show the interaction of the previous term with the treatment and spillover conditions. Column (6) shows the number of observations. All regressions include controls for the child age and gender. Clustered standard errors at the village level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

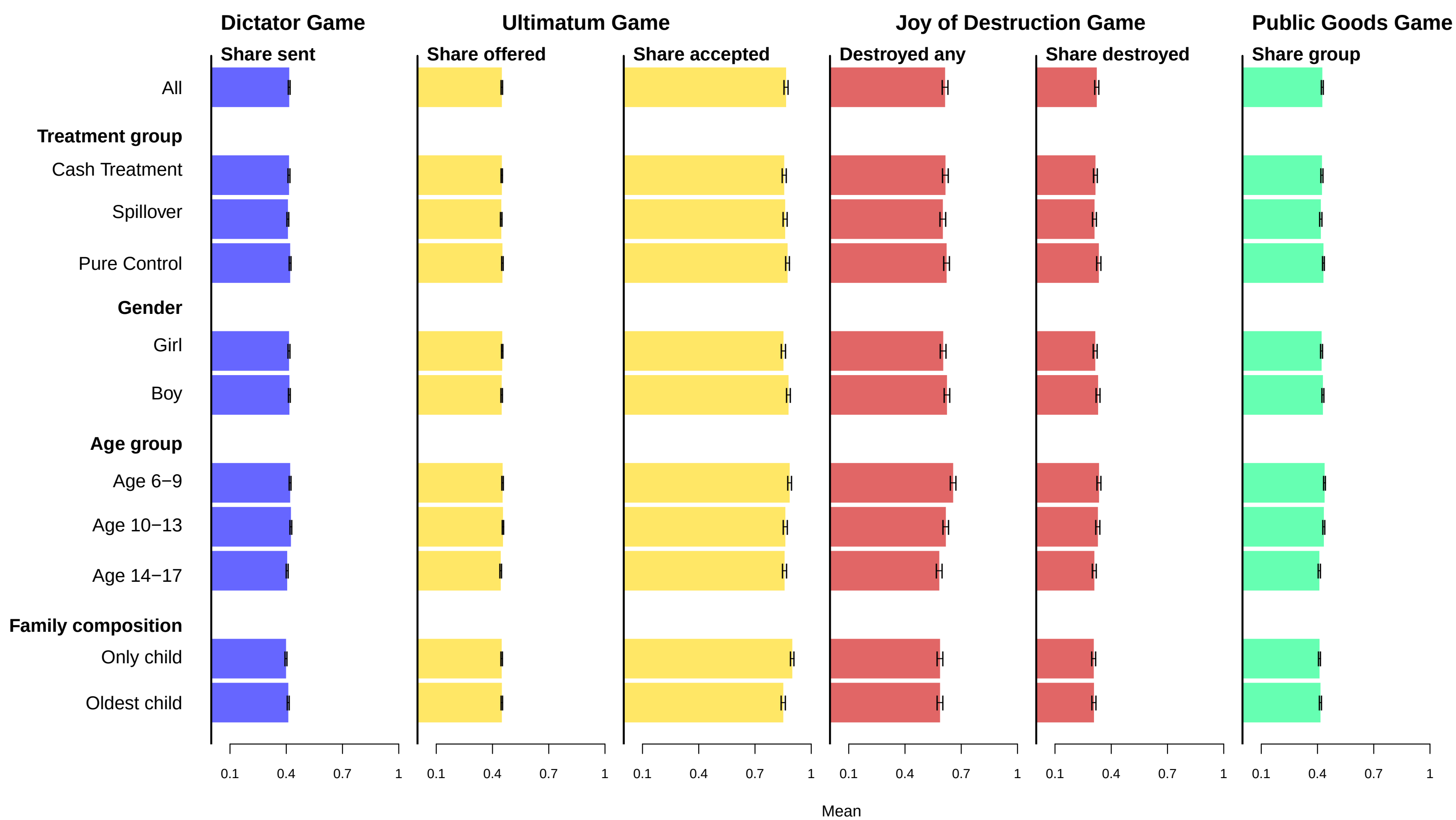
Table A.3: Effects of cash transfers on psycho-social well-being: omitting outliers using DFBETAS

	Treatment	Spillover	(1) vs (2) p-value	N	N omitted
	(1)	(2)	(3)	(4)	(5)
Panel A – Adults					
Psychological well-being index	0.083	−0.117**	0.000	1452	204
	(0.058)	(0.052)			
Happiness (WVS)	0.205***	0.154*	0.497	1450	204
	(0.070)	(0.086)			
Life satisfaction (WVS)	−0.009	−0.125**	0.058	1452	204
	(0.065)	(0.057)			
MacArthur Ladder	0.135	−0.093	0.007	1452	204
	(0.083)	(0.075)			
PHQ-2 Depression	0.001	0.127	0.100	1452	204
	(0.100)	(0.084)			
Panel B – Children					
Mental Health Index	−0.008	−0.117***	0.001	3566	456
	(0.042)	(0.044)			
CESD index	0.052	0.134*	0.105	3566	456
	(0.071)	(0.071)			
Happiness (WVS)	0.131**	0.047	0.051	3558	453
	(0.051)	(0.047)			
Life satisfaction (WVS)	−0.069	−0.178***	0.029	3566	456
	(0.069)	(0.063)			
Hope Index	−0.024	−0.022	0.954	3566	456
	(0.061)	(0.064)			
Benign Envy Scale Index	0.049	0.048	0.992	3566	456
	(0.079)	(0.079)			
Malicious Envy Scale Index	0.185**	0.025	0.011	3566	456
	(0.092)	(0.077)			
Descriptive Envy Index	0.061	0.095	0.568	3565	456
	(0.083)	(0.063)			
Trust Index	−0.040	0.018	0.305	3566	456
	(0.066)	(0.062)			
Closeness Index	0.023	−0.018	0.383	3566	456
	(0.063)	(0.056)			
Zero-sum Thinking Index	0.110	0.031	0.213	3565	456
	(0.081)	(0.071)			
Locus of Control Statements Index	−0.074	−0.048	0.587	3562	456
	(0.050)	(0.041)			

Notes: The table presents results from Table 2 with influential observations excluded. Outcome variables are listed on the left. The pure control group mean and standard deviation are 0 and 1 respectively for all outcome variables listed. Columns (1) and (2) show the treatment effects of the cash and spillover groups, respectively, relative to the pure control group. Column (3) shows the p-value of the difference test between treatment and spillover coefficients. Column (4) shows the number of observations included in the analysis. Column (5) shows the number of influential observations left out. Regressions in Panel A include controls for gender and other stratification variables in Equation 1. Regressions in Panel B include controls for the child age and gender and the stratification variables in Equation 2. Standard errors are clustered at the village level. Influential observations were identified using DFBETAS (See Belsley et al. (1980) for more details). Observations were deemed influential if DFBETAS value for either treatment or spillover exceeded $2/\sqrt{n}$, where n is the sample size of the regression. * p < 0.1, ** p < 0.05, *** p < 0.01.

B. Additional Tables and Figures for Games Analysis

Figure B.1: Game behavior summary statistics



Notes: Figure B.1 shows means for the game behavior outcome variables for the full sample of children participants and sub-groups of it; by treatment group, gender, age group, and family composition type.

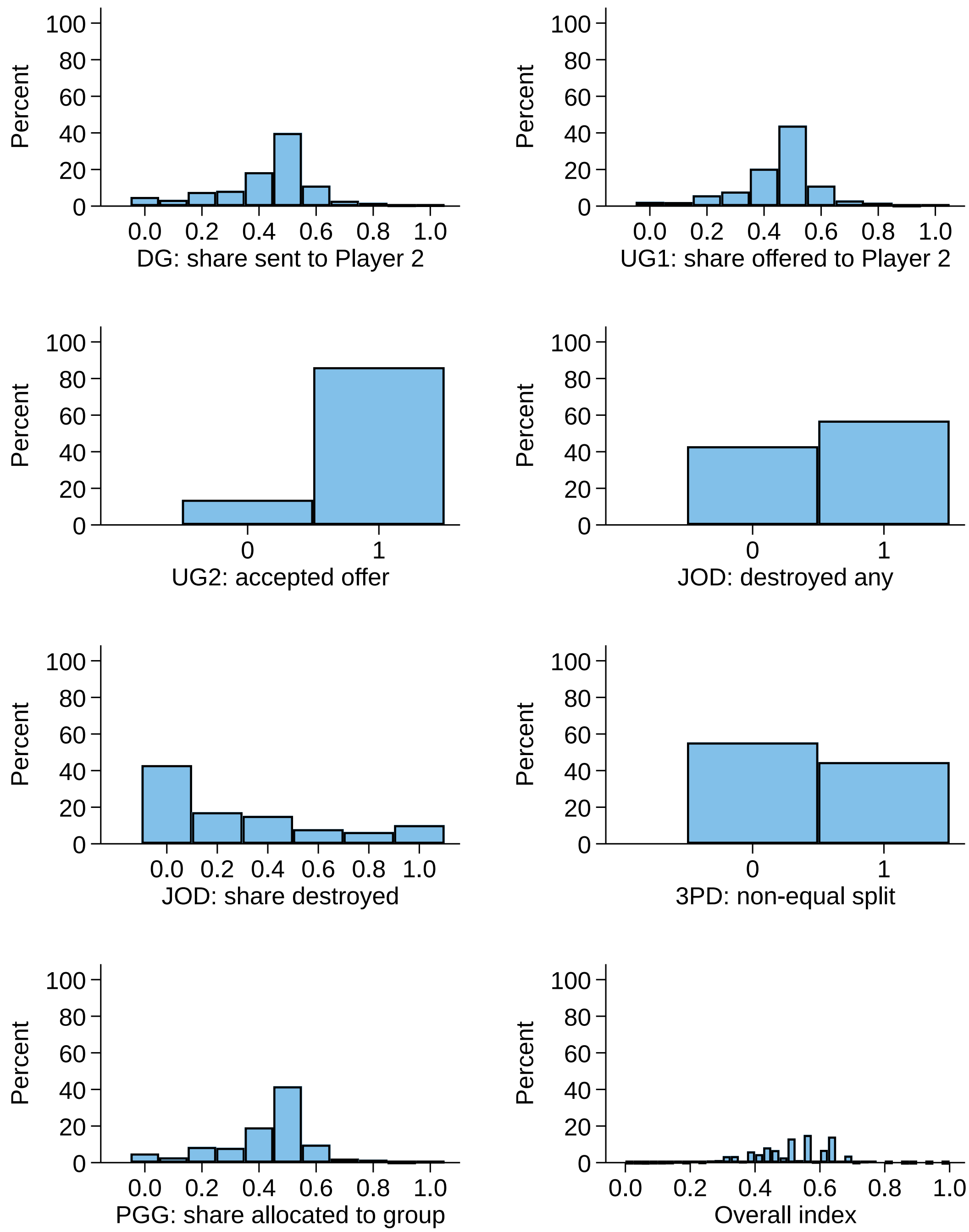
Table B.1: Game behavior summary statistics

(Table version of Fig. B.1)

	Dictator Game	Ultimatum Game		Joy of Destruction Game		Public Goods Game
	Share sent	Share offered	Accepted offer	Destroyed any	Share destroyed	Share group
	(1)	(2)	(3)	(4)	(5)	(6)
All	0.416	0.450	0.866	0.614	0.323	0.426
	(0.160)	(0.128)	(0.341)	(0.487)	(0.345)	(0.172)
Panel A – Treatment group						
Cash Treatment	0.415	0.450	0.856	0.616	0.316	0.424
	(0.159)	(0.118)	(0.351)	(0.487)	(0.336)	(0.170)
Spillover	0.409	0.447	0.861	0.602	0.311	0.418
	(0.165)	(0.131)	(0.346)	(0.490)	(0.341)	(0.184)
Pure Control	0.421	0.453	0.874	0.622	0.334	0.432
	(0.157)	(0.131)	(0.332)	(0.485)	(0.352)	(0.165)
Panel B – Gender						
Girl	0.415	0.452	0.852	0.604	0.315	0.422
	(0.163)	(0.127)	(0.355)	(0.489)	(0.342)	(0.174)
Boy	0.417	0.449	0.879	0.624	0.330	0.429
	(0.158)	(0.129)	(0.326)	(0.484)		
Panel C – Age group						
Age 6-9	0.421	0.454	0.885	0.657	0.335	0.438
	(0.150)	(0.121)	(0.319)	(0.475)	(0.338)	(0.153)
Age 10-13	0.425	0.456	0.862	0.618	0.329	0.434
	(0.160)	(0.123)	(0.345)	(0.486)	(0.349)	(0.165)
Age 14-17	0.405	0.444	0.858	0.583	0.310	0.410
	(0.165)	(0.137)	(0.350)	(0.493)	(0.346)	(0.189)
Panel D – Family composition						
Only child	0.399	0.449	0.899	0.587	0.307	0.411
	(0.168)	(0.128)	(0.302)	(0.493)	(0.343)	(0.171)
Oldest child	0.411	0.450	0.851	0.587	0.308	0.416
	(0.166)	(0.132)	(0.356)	(0.493)	(0.342)	(0.188)

Notes: Table B.1 shows means for the game behavior outcome variables for the full sample of children participants and sub-groups of it; by treatment group, gender, age group, and family composition type.

Figure B.2: Game behavior histograms



Notes: Figure B.2 shows the distribution of games behavior outcomes for the full sample of children. The X-axis shows the different possible values of each outcome variable, and the Y-axis shows the percentage of the sample that behaved that way. The overall pro-sociality index is an average of behavior across the games. We construct it by adding up the share sent in the DG, share offered in the UG, 1− share destroyed in the JOD, and the share allocated to the group in the PGG, and diving this sum by 4.

Table B.2: Treatment effects on games behavior

(Table version of Fig. 2)

	Control Mean (SD) (1)	Treatment (2)	Spillover (3)	Partner Poorer (4)	Treatment × Partner Poorer (5)	Spillover × Partner Poorer (6)	Participants (Observations) (7)
Panel A – Main effects							
Dictator Game							
Share sent	0.435	0.000	−0.012				4021
	(0.176)	(0.011)	(0.011)				(12059)
		[0.980]	[0.170]				
Ultimatum Game							
Share offered	0.457	0.001	−0.009				4020
	(0.157)	(0.007)	(0.007)				(12060)
		[0.891]	[0.103]				
𝟙(Accepted offer)	0.864	−0.007	−0.001				4021
	(0.343)	(0.012)	(0.012)				(12061)
		[0.593]	[0.932]				
Joy of Destruction Game							
𝟙(Destroyed any)	0.580	−0.028	−0.010				4021
	(0.494)	(0.035)	(0.035)				(12061)
		[0.291]	[0.667]				
Share destroyed	0.305	−0.020	−0.012				4021
	(0.343)	(0.027)	(0.026)				(12061)
		[0.302]	[0.495]				
Third-party Dictator Game							
𝟙(Non-equal split)	0.446	−0.001	0.001				4021
	(0.497)	(0.017)	(0.015)				(12061)
		[0.973]	[0.933]				
Public Goods Game							
Share group	0.432	−0.006	−0.014				4021
	(0.165)	(0.011)	(0.011)				(4021)
		[0.532]	[0.121]				
Panel B – Interactions with partner identity							
Dictator Game							
Share sent	0.442	0.003	−0.015	0.002	0.001	0.006	4019
	(0.184)	(0.013)	(0.012)	(0.005)	(0.011)	(0.009)	(8038)
Ultimatum Game							
Share offered	0.460	−0.002	−0.008	−0.000	0.008	−0.004	4020
	(0.169)	(0.010)	(0.009)	(0.007)	(0.011)	(0.010)	(8040)
𝟙(Accepted offer)	0.859	−0.005	−0.000	−0.018*	0.006	0.012	4020
	(0.348)	(0.016)	(0.015)	(0.010)	(0.017)	(0.015)	(8040)
Joy of Destruction Game							
𝟙(Destroyed any)	0.559	−0.021	−0.020	0.002	−0.035	0.025	4020
	(0.497)	(0.039)	(0.035)	(0.011)	(0.022)	(0.016)	(8040)
Share destroyed	0.291	−0.021	−0.029	−0.002	−0.002	0.041***	4020
	(0.338)	(0.029)	(0.025)	(0.008)	(0.015)	(0.013)	(8040)

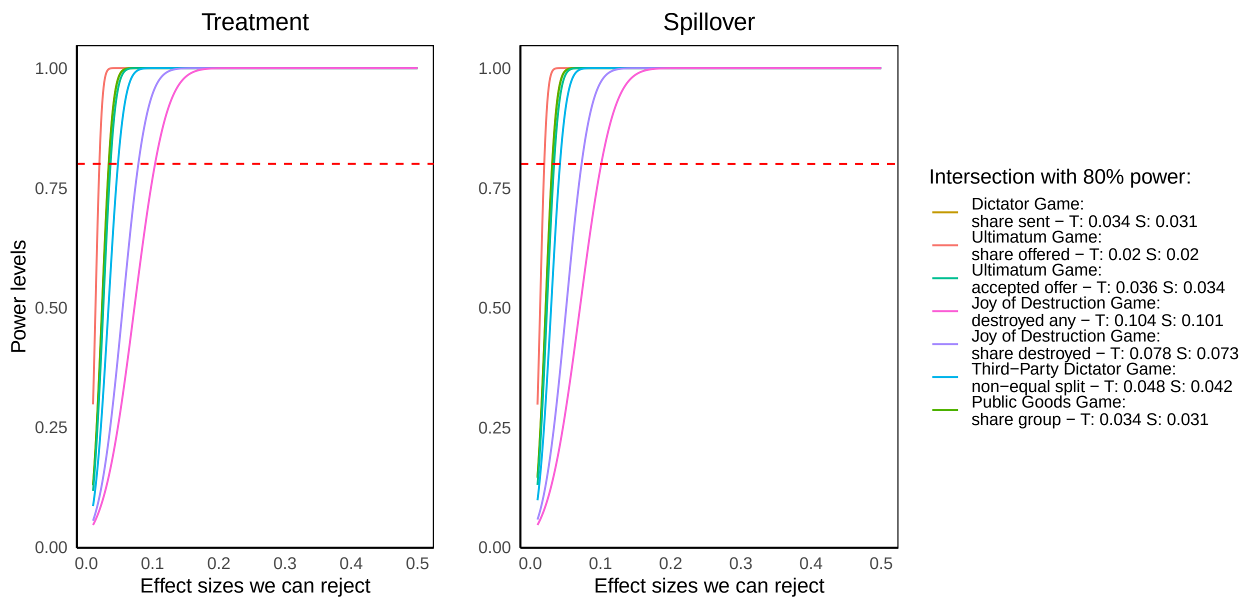
Notes: OLS estimates of behavioral games outcomes for children. Outcome variables are listed on the left. The first column shows the pure control group mean and standard deviation (in parentheses) of the outcome variable. Columns (2) and (3) show the treatment effects of the cash, and spillover groups, respectively, relative to the pure control group. Column (4) shows the effect on game behavior of the child playing against a partner that is poorer than them. Columns (5) and (6) show interactions of the Partner Poorer indicator and treatment groups, cash and spillover respectively. All regressions include controls for the child age and gender and opponent's age and gender. Clustered standard errors at the village level are shown in parenthesis for columns 1-6. Randomization inference p-values are shown in brackets. Column (7) shows the number of participants and the number of observations in parenthesis. * p < 0.1, ** p < 0.05, *** p < 0.01.

Table B.3: Treatment effects on behavior in games without opponent's wealth information

	Control Mean (SD) (1)	Treatment (2)	Spillover (3)	Participants (4)
Dictator Game				
Share sent	0.421	−0.006	−0.012	4021
	(0.157)	(0.012)	(0.012)	
Ultimatum Game				
Share offered	0.453	−0.002	−0.006	4020
	(0.131)	(0.008)	(0.008)	
$\mathbb{1}$(Accepted offer)	0.874	−0.016	−0.012	4021
	(0.332)	(0.016)	(0.014)	
Joy of Destruction Game				
$\mathbb{1}$(Destroyed any)	0.622	−0.006	−0.019	4021
	(0.485)	(0.036)	(0.039)	
Share destroyed	0.334	−0.014	−0.021	4021
	(0.352)	(0.029)	(0.030)	
Third-party Dictator Game				
$\mathbb{1}$(Non-equal split)	0.682	-0.040^{*}	0.011	4021
	(0.466)	(0.023)	(0.022)	
Public Goods Game				
Share group	0.432	−0.006	−0.014	4021
	(0.165)	(0.011)	(0.011)	

Notes: OLS estimates of behavioral games outcomes for children, using only the neutral (without opponent's wealth information) version of the games. Outcome variables are listed on the left. The first column shows the pure control group mean and standard deviation (in parentheses) of the outcome variable. Columns (2) and (3) show the treatment effects of the cash, and spillover groups, respectively, relative to the pure control group. Column (4) shows the effect on game behavior of the child playing against a partner that is poorer than them. All regressions include controls for the child age and gender and opponent's age and gender. Clustered standard errors at the village level are shown in parenthesis. Column (4) shows the number of participants. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Figure B.3: Power analysis for game behavior outcomes



Notes: Figure B.3 shows the treatment and spillover effect sizes that we are able to reject across different levels of power, using the standard errors obtained for each outcome in our estimation of equation 3. The red horizontal striped lines show the 80% power level. The effect size value that intersects with this line are shown in the label for each game outcome, where T stands for treatment and S for spillover.

Table B.4: Treatment effects on games behavior: omitting outliers using DFBETAS

	Control Mean (SD) (1)	Treatment (2)	Spillover (3)	Partner Poorer (4)	Treatment × Partner Poorer (5)	Spillover × Partner Poorer (6)	Participants (Observations) (7)
Panel A – Main effects							
Dictator Game							
Share sent	0.447	0.025***	−0.003				3923
	(0.140)	(0.006)	(0.006)				(10619)
Ultimatum Game							
Share offered	0.464	0.009	−0.006				3922
	(0.144)	(0.006)	(0.006)				(10618)
$\mathbb{1}$(Accepted offer)	0.864	−0.007	−0.001				4021
	(0.343)	(0.012)	(0.012)				(12061)
Joy of Destruction Game							
$\mathbb{1}$(Destroyed any)	0.588	−0.026	−0.009				3923
	(0.492)	(0.035)	(0.036)				(10619)
Share destroyed	0.309	−0.018	−0.010				3923
	(0.342)	(0.028)	(0.027)				(10619)
Third-party Dictator Game							
$\mathbb{1}$(Non-equal split)	0.456	0.037*	0.011				3923
	(0.498)	(0.020)	(0.016)				(10619)
Public Goods Game							
Share group	0.432	−0.006	−0.014				4021
	(0.165)	(0.011)	(0.011)				(4021)
Panel B – Interactions with partner identity							
Dictator Game							
Share sent	0.442	0.025***	0.004	0.001	0.005	0.006	3908
	(0.171)	(0.008)	(0.009)	(0.005)	(0.007)	(0.008)	(7332)
Ultimatum Game							
Share offered	0.461	0.006	−0.002	−0.002	0.012	−0.001	3908
	(0.164)	(0.008)	(0.008)	(0.007)	(0.009)	(0.009)	(7332)
$\mathbb{1}$(Accepted offer)	0.859	−0.005	−0.000	−0.018*	0.006	0.012	4020
	(0.348)	(0.016)	(0.015)	(0.010)	(0.017)	(0.015)	(8040)
Joy of Destruction Game							
$\mathbb{1}$(Destroyed any)	0.560	−0.016	−0.008	0.004	−0.027	0.009	3908
	(0.496)	(0.039)	(0.036)	(0.011)	(0.023)	(0.017)	(7332)
Share destroyed	0.291	−0.021	−0.024	−0.001	0.008	0.032**	3908
	(0.337)	(0.030)	(0.026)	(0.008)	(0.016)	(0.014)	(7332)

Notes: OLS estimates of behavioral games outcomes for children with influential observations omitted. Outcome variables are listed on the left. The first column shows the pure control group mean and standard deviation (in parentheses) of the outcome variable. Columns (2) and (3) show the treatment effects of the cash, and spillover groups, respectively, relative to the pure control group. Column (4) shows the effect on game behavior of the child playing against a partner that is poorer than them. Columns (5) and (6) show interactions of the Partner Poorer indicator and treatment groups, cash and spillover respectively. All regressions include controls for the child age and gender and opponent's age and gender. Clustered standard errors at the village level are shown in parenthesis for columns 1-6. Column (7) shows the number of participants and the number of observations in parenthesis. Influential observations were omitted using DFBETAS (See Belsley et al. (1980) for more details). Observations were deemed influential if the DFBETA value for the treatment or the spillover coefficient of the regression exceeded $2/\sqrt{n}$, where n is the sample size of the regression. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B.5: Behavioral Games: Heterogeneity of results by child's own age, gender, and baseline wealth

	Dictator Game	**Ultimatum Game**		**Joy of Destruction Game**		**Third-party Dictator Game**	**Public Goods Game**	**Overall**
	Share sent	Share offered	𝟙(Accepted offer)	𝟙(Destroyed any)	Share destroyed	𝟙(Unequal split)	Share group	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A – Age groups								
Treatment × 10-13 Age Group	0.001	0.005	−0.000	0.019	0.007	−0.036	−0.006	−0.002
	(0.012)	(0.010)	(0.025)	(0.041)	(0.027)	(0.040)	(0.017)	(0.010)
Spillover × 10-13 Age Group	0.000	−0.001	0.019	−0.054	−0.018	0.011	−0.020	−0.001
	(0.011)	(0.009)	(0.018)	(0.037)	(0.024)	(0.030)	(0.016)	(0.009)
Treatment × 14-17 Age Group	0.006	−0.003	0.017	−0.054	−0.046*	−0.024	−0.010	0.009
	(0.013)	(0.010)	(0.024)	(0.043)	(0.027)	(0.040)	(0.016)	(0.009)
Spillover × 14-17 Age Group	−0.010	−0.004	0.038*	−0.078**	−0.018	0.011	−0.020	−0.001
	(0.011)	(0.010)	(0.022)	(0.038)	(0.025)	(0.032)	(0.017)	(0.010)
Pure Control Mean	0.435	0.457	0.864	0.580	0.305	0.446	0.432	0.505
Observations	12059	12060	12061	12061	12061	12061	12063	12058
Panel B – Gender								
Treatment × Female	−0.009	0.007	−0.010	−0.050	−0.044*	0.008	−0.017	0.006
	(0.010)	(0.009)	(0.018)	(0.033)	(0.025)	(0.031)	(0.017)	(0.010)
Spillover × Female	−0.007	0.002	−0.011	−0.043	−0.031*	0.018	−0.017	0.002
	(0.009)	(0.008)	(0.015)	(0.026)	(0.017)	(0.023)	(0.012)	(0.007)
Pure Control Mean	0.435	0.457	0.864	0.580	0.305	0.446	0.432	0.505
Observations	12059	12060	12061	12061	12061	12061	12063	12058
Panel C – Wealth								
Treatment × Assets (above median)	0.031*	0.015	−0.009	0.063	0.024	0.019	0.019	0.010
	(0.017)	(0.011)	(0.021)	(0.048)	(0.035)	(0.030)	(0.018)	(0.011)
Spillover × Assets (above median)	0.038***	0.015*	−0.013	0.079**	0.049*	0.036	0.042***	0.012
	(0.012)	(0.009)	(0.019)	(0.036)	(0.026)	(0.025)	(0.015)	(0.009)
Pure Control Mean	0.435	0.457	0.864	0.580	0.305	0.446	0.432	0.505
Observations	12059	12060	12061	12061	12061	12061	12063	12058
Participants								

Notes: We show OLS interactions of treatment and spillover effects with child's own characteristics, for the behavioral games outcomes. Outcome variables are listed on the top rows. The overall pro-sociality index is an average of behavior across the games. We construct it by adding up the share sent in the Dictator Game, share offered in the Ultimatum Game, 1− share destroyed in the Joy of Destruction Game, and the share allocated to the group in the Public Goods Game, and dividing this sum by 4. Panel A shows interactions with different age groups, where children from 6-9 years old are the base category for comparison. Panel B shows interactions with an indicator for the child's gender being female. Panel C shows interactions with an indicator for the child's household belonging to a household with above median wealth at baseline. Clustered standard errors at the village level are shown in parenthesis. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table B.6: Behavioral Games: Heterogeneity of results by village baseline wealth

	Dictator Game	**Ultimatum Game**		**Joy of Destruction Game**		**Third-party Dictator Game**	**Public Goods Game**	**Overall**
	Share sent	Share offered	𝟙(Accepted offer)	𝟙(Destroyed any)	Share destroyed	𝟙(Unequal split)	Share group	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A – Village assets								
Treatment × Village assets (below)	−0.020	−0.006	−0.005	0.056	0.014	−0.057*	−0.001	−0.010
	(0.023)	(0.014)	(0.025)	(0.067)	(0.050)	(0.032)	(0.023)	(0.016)
Spillover × Village assets (below)	−0.008	0.005	0.024	0.141**	0.095*	−0.009	−0.009	−0.027*
	(0.021)	(0.014)	(0.023)	(0.067)	(0.051)	(0.029)	(0.022)	(0.016)
Panel B – Village inequality								
Treatment × Village inequality (above)	0.056**	0.035**	−0.065***	0.109	0.075	0.027	0.019	0.008
	(0.023)	(0.013)	(0.024)	(0.067)	(0.049)	(0.033)	(0.023)	(0.016)
Spillover × Village inequality (above)	0.043**	0.023	−0.044*	0.041	0.020	0.018	0.035	0.020
	(0.021)	(0.014)	(0.023)	(0.071)	(0.052)	(0.029)	(0.021)	(0.017)
Pure Control Mean	0.435	0.457	0.864	0.580	0.305	0.446	0.432	0.505
Observations	12059	12060	12061	12061	12061	12061	12063	12058
Participants								

Notes: We show OLS interactions of treatment and spillover effects with village characteristics at baseline, for the behavioral games outcomes. Panel A shows interactions with an indicator for the village baseline asset index being below median. Panel B shows interactions with an indicator for the village standard deviation of the baseline assets index being above median. Outcome variables are listed on the top rows. The overall pro-sociality index is an average of behavior across the games. We construct it by adding up the share sent in the Dictator Game, share offered in the Ultimatum Game, 1− share destroyed in the Joy of Destruction Game, and the share allocated to the group in the Public Goods Game, and dividing this sum by 4. Clustered standard errors at the village level are shown in parenthesis. * p < 0.1, ** p < 0.05, *** p < 0.01.

Table B.7: Behavioral Games: Heterogeneity of results by relative age and gender of opponent

	Dictator Game	Ultimatum Game		Joy of Destruction Game		Third-party Dictator Game
	Share sent	Share offered	𝟙(Accepted offer)	𝟙(Destroyed any)	Share destroyed	Share closest age
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A – Age groups						
Treatment	0.003	0.002	−0.010	−0.018	−0.019	−0.007
	(0.012)	(0.009)	(0.015)	(0.036)	(0.026)	(0.004)
Spillover	−0.014	−0.007	−0.021	0.010	−0.006	−0.001
	(0.011)	(0.008)	(0.014)	(0.034)	(0.025)	(0.003)
Same Age Group	−0.001	0.006	−0.009	0.013	0.007	
	(0.005)	(0.005)	(0.009)	(0.013)	(0.009)	
Treatment × Same Age Group	−0.004	−0.002	0.005	−0.016	−0.001	
	(0.010)	(0.008)	(0.018)	(0.024)	(0.019)	
Spillover × Same Age Group	0.003	−0.004	0.032**	−0.034*	−0.011	
	(0.008)	(0.007)	(0.014)	(0.019)	(0.014)	
Pure Control Mean	0.435	0.457	0.864	0.580	0.305	0.503
Observations	12059	12060	12061	12061	12061	10122
Panel B – Gender						Share same gender
Treatment	−0.000	0.002	−0.007	−0.023	−0.018	−0.007
	(0.011)	(0.009)	(0.015)	(0.036)	(0.026)	(0.004)
Spillover	−0.012	−0.010	−0.002	−0.010	−0.013	−0.001
	(0.011)	(0.008)	(0.013)	(0.038)	(0.027)	(0.003)
Same Gender	0.002	0.000	0.000	0.004	0.010	
	(0.005)	(0.004)	(0.008)	(0.011)	(0.011)	
Treatment × Same Gender	0.001	−0.002	−0.000	−0.008	−0.004	
	(0.008)	(0.008)	(0.015)	(0.023)	(0.017)	
Spillover × Same Gender	0.001	0.001	0.003	−0.000	0.002	
	(0.008)	(0.006)	(0.012)	(0.020)	(0.016)	
Pure Control Mean	0.435	0.457	0.864	0.580	0.305	0.504
Observations	12059	12060	12061	12061	12061	6139
Participants						

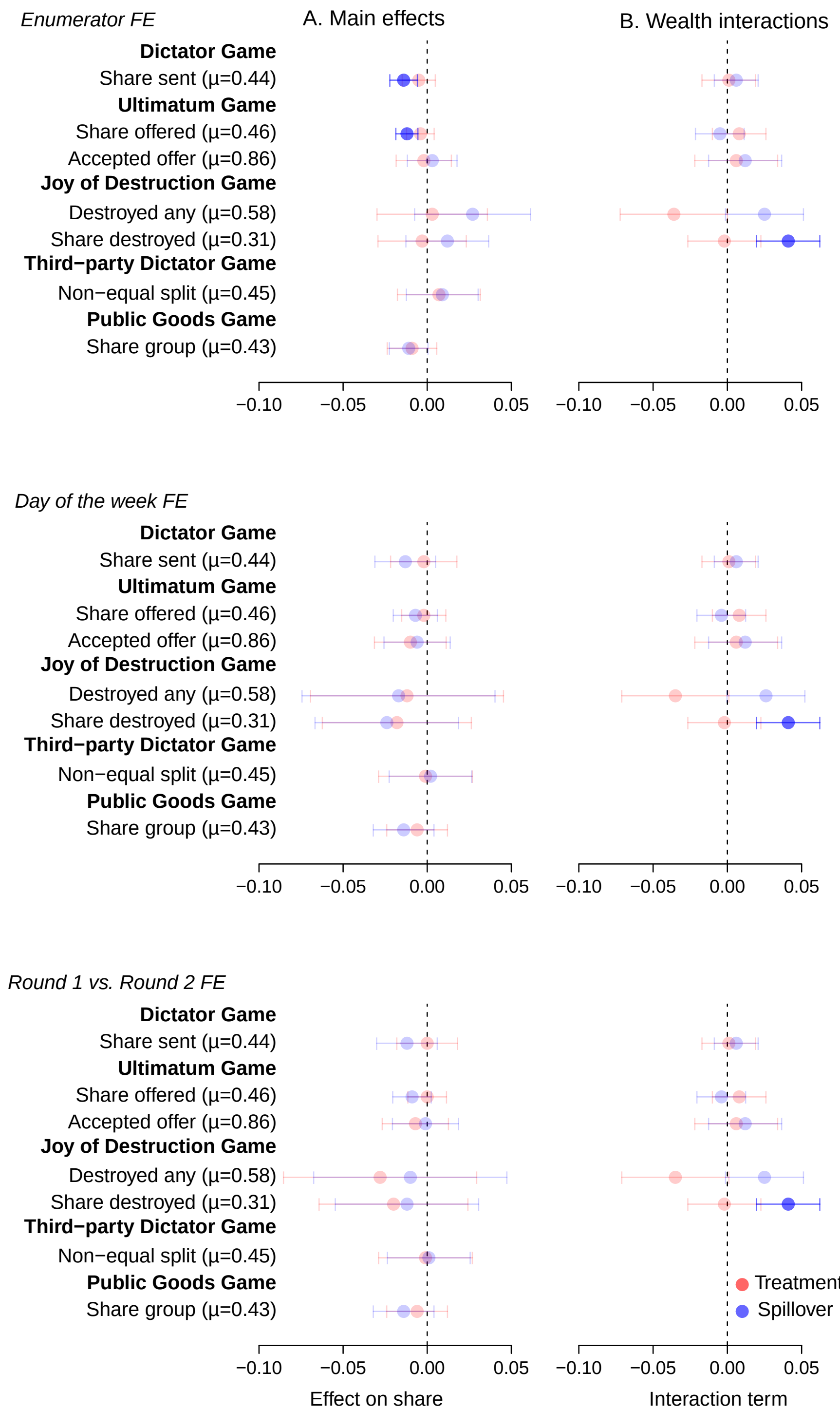
Notes: We show OLS interactions of treatment and spillover effects with the child's opponent characteristics, for the behavioral games outcomes. Outcome variables are listed on the top rows. We do not include the Public Goods Game (nor the Overall Index) in this analysis because in this game participants play against three other opponents of varying ages and genders. Panel A shows interactions with an indicator for the opponent belonging to the same age group. Panel B shows interactions with an indicator for the child's gender being of the same gender. Clustered standard errors at the village level are shown in parenthesis. * p < 0.1, ** p < 0.05, *** p < 0.01.

Table B.8: Behavioral Games: Heterogeneity of results by age and gender of opponent

	Dictator Game	Ultimatum Game		Joy of Destruction Game		Third-party Dictator Game
	Share sent	Share offered	𝟙(Accepted offer)	𝟙(Destroyed any)	Share destroyed	𝟙(Unequal split)
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A – Young opponent (6-9 years old)						
Treatment	−0.003	−0.004	−0.016	−0.028	−0.024	−0.001
	(0.012)	(0.007)	(0.014)	(0.037)	(0.026)	(0.019)
Spillover	−0.011	−0.013*	−0.001	−0.020	−0.018	0.004
	(0.011)	(0.007)	(0.012)	(0.037)	(0.027)	(0.016)
Young Opponent	0.015**	−0.005	−0.002	−0.037**	−0.014	−0.005
	(0.006)	(0.005)	(0.009)	(0.015)	(0.011)	(0.013)
Treatment × Young Opponent	0.012	0.015*	0.031	0.004	0.014	0.000
	(0.010)	(0.009)	(0.019)	(0.028)	(0.019)	(0.024)
Spillover × Young Opponent	−0.004	0.015**	−0.000	0.031	0.018	−0.010
	(0.009)	(0.007)	(0.015)	(0.023)	(0.017)	(0.019)
Pure Control Mean	0.435	0.457	0.864	0.580	0.305	0.446
Observations	12059	12060	12061	12061	12061	12061
Panel B – Female opponent						
Treatment	0.005	0.002	−0.013	−0.022	−0.015	−0.017
	(0.013)	(0.008)	(0.014)	(0.036)	(0.029)	(0.021)
Spillover	−0.010	−0.009	−0.007	−0.013	−0.010	−0.001
	(0.012)	(0.008)	(0.013)	(0.037)	(0.028)	(0.017)
Female Opponent	0.005	−0.004	−0.003	−0.003	−0.003	−0.001
	(0.005)	(0.004)	(0.010)	(0.012)	(0.008)	(0.014)
Treatment × Female Opponent	−0.010	−0.002	0.012	−0.011	−0.010	0.032
	(0.010)	(0.007)	(0.016)	(0.024)	(0.017)	(0.024)
Spillover × Female Opponent	−0.004	−0.001	0.012	0.004	−0.005	0.004
	(0.007)	(0.007)	(0.014)	(0.018)	(0.013)	(0.019)
Pure Control Mean	0.435	0.457	0.864	0.580	0.305	0.446
Observations	12059	12060	12061	12061	12061	12061
Participants						

Notes: We show OLS interactions of treatment and spillover effects with the child's opponent characteristics, for the behavioral games outcomes. Outcome variables are listed on the top rows. We do not include the Public Goods Game (nor the Overall Index) in this analysis because in this game participants play against three other opponents of varying ages and genders. Panel A shows interactions with an indicator for the opponent belonging to the youngest age group (6-9 years old). Panel B shows interactions with an indicator for the child's gender being female. Clustered standard errors at the village level are shown in parenthesis. * p < 0.1, ** p < 0.05, *** p < 0.01.

Figure B.4: Robustness check: Treatment effects on games behavior including additional fixed effects



Notes: Estimated treatment coefficients for games behavior outcomes. Each row represents a different outcome variable. In Panel A, each row displays our main two treatment effects, estimated by equation 3: Treatment (red), and Spillover (blue). In Panel B, each row shows the relative wealth interaction terms estimated by equation 4: Treatment × Poorer Opponent (red) and Spillover × Poorer Opponent (blue). 90% confidence intervals are shown around each point estimate. Estimates which are significantly different from zero at the 10 percent level are shown in darker shades.

C. Survey Questions, PAP Information, and Survey Protocols

Table C.1: Specification of Tables and Figures in Pre-Analysis Plan (PAP)

Table	Specified in PAP
1 Persistent effects of cash transfers on consumption and assets	Yes
2 Effects of cash transfers on psycho-social well-being	Yes
3 Child demographics and game summary statistics	Yes
A.1 Tracking rates at the household level	Yes
A.2 Heterogeneous effects of cash transfers on mental health	No
A.3 Effects of cash transfers on psycho-social well-being: omitting outliers using DFBETAS	Yes
B.1 Game behavior summary statistics	Yes
B.2 Treatment effects on games behavior	Yes
B.4 Treatment effects on games behavior: omitting outliers using DFBETAS	Yes
B.5 Behavioral Games: Heterogeneity of results by child's own age, gender, and baseline wealth	Yes
B.6 Behavioral Games: Heterogeneity of results by village baseline wealth	No
B.7 Behavioral Games: Heterogeneity of results by relative age and gender of opponent	Yes
B.8 Behavioral Games: Heterogeneity of results by age and gender of opponent	Yes
Figure	Specified in PAP
2 Treatment effects on games behavior	Yes
A.2 Itemized effects of cash transfers on children's psycho-social well-being	Yes
A.1 Itemized effects of cash transfers on adults' psycho-social well-being	Yes
A.3 Parent and child mental health correlation	Yes
B.1 Game behavior summary statistics	Yes
B.2 Game behavior histograms	Yes
B.3 Power analysis for game behavior outcomes	No
B.4 Robustness check: Treatment effects on games behavior including additional fixed effects	Yes

Notes: Table C.1 lists all tables and figures and indicates whether the analysis conducted was pre-specified in our pre-analysis plan (Haushofer et al., 2021).

3.1 Survey details

3.1.1 Adult survey outcomes

1. **Non-durable consumption** – monthly consumption per capita

   (a) Food

      i. Food own production (value of milk, meat, eggs and additional animal products consumed, value of top three crops produced consumed)

      ii. Food bought:

         A. Meat, fish, dairy

         B. Fruit, vegetables

         C. Cereals

         D. Other food (roots, pulses, oils, sugars, prepared food, other food)

      iii. Temptation good expenditure:

         A. Alcohol

         B. Tobacco

         C. Gambling

      iv. Personal and household items:

         A. Clothing and shoes

         B. Personal items such as soap, shampoo, etc.

         C. Household items such as matches, kerosene, etc.

      v. Housing repair or improvement

      vi. Education expenditures

      vii. Medical expenditure

      viii. Social expenditure

         A. Religious expenses or other ceremonies

         B. Weddings

         C. Funerals

      ix. Other expenses greater than KES 1,000

   (b) Assets – sum of value of:

      i. Productive assets:

A. Irrigation pump
B. Hose pipe
C. Ox-ploughs
D. Oxen/work bulls
E. Knapsack sprayers
F. Wheelbarrows
G. Ox-carts/donkey carts
H. Hand carts
I. Other farming tools
J. Fishing equipment (boats, canoes, etc)
K. Other asset used for agriculture or business

ii. Vehicles:

A. Bicycle
B. Motorbike

iii. Furniture:

A. Sofas
B. Chairs
C. Table
D. Clock/Watch
E. Beds
F. Mattresses
G. Cupboards
H. Other furniture

iv. Household durables:

A. Cell phone
B. Sewing machine
C. Radio, tape or CD player
D. Battery
E. Solar panel
F. Television or computer
G. Kerosene stove
H. Refrigerator

v. Financial assets - net balance of savings minus outstanding loans (KES):

A. Savings with an institution (bank, SACCO, micro-finance organization)
B. Savings with MPesa
C. Savings in any other place (e.g., with family or friends)
D. Loans made by friends or family
E. Loans from moneylenders, micro-finance institutions, shops, banks or other sources.

2. **Psychological well-being**:

The Psychological Well-Being Index was constructed by taking a weighted average of four individual measures: (a) happiness, (b) life satisfaction, (c) subjective social status, and (d) depression.

(a) **Happiness**: we administered one item from the World Value Survey (WVS): "Taking all things together, would you say you are..." where the response options ranged from 1 (Very happy) to 4 (Not at all happy). The item was reverse-scored so that higher values indicate greater happiness.

(b) **Life satisfaction**: we administered one item from the WVS: "All things considered, how satisfied are you with your life as a whole these days on a scale of 1 to 10?" where the response options range from 1 (Very dissatisfied) and 10 (Very satisfied).

(c) **Subjective social status**: we administered the MacArthur Ladder (i.e., the MacArthur Scale of Subjective Social Status; Adler et al., 2000). On this measure, participants are asked to imagine a ladder with steps numbered from 1 at the bottom to 10 at the top. They are told "The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you." Participants were then asked on which step of the ladder they felt their family stands at this time, and on which step of the ladder they felt they themselves stand at this time. The index was constructed by taking the average of these items.

(d) **Depression**: we administered the 2-item Patient Health Questionnaire (PHQ-2) for depression (Kroenke et al., 2003). On this measure, participants are asked to indicate how often they experienced different feelings or states over the course of the past two weeks. The two items were "Little interest or pleasure in doing things" and "Feeling down, depressed or hopeless." Response options 1 = Not at all, 2 = Several days, 3 = More than half the days, 4 = Nearly every day. When including this scale in the Psychological Well-Being Index, we reverse-scored it such that higher values indicate better mental health (i.e., lower depression).

3.1.2 Child survey outcomes

1. **Mental health**:

   The Mental Health Index was constructed by taking a weighted average of four individual measures: (a) depression, (b) happiness, (c) life satisfaction, and (d) hope.

   (a) **Depression**: we administered the 10-item Center for Epidemiologic Studies Depression Scale (CESD-10) for kids (Weissman et al., 1980). On this scale, participants indicated how often they experienced ten different feelings or states over the course of the past seven days. The items were as follows:

   - "I was bothered by things that usually don't bother me."
   - "I felt like I couldn't pay attention to what I was doing."

- "I felt down and unhappy."
- "I felt like I was too tired to do things."
- "I felt like something good was going to happen."
- "I felt scared."
- "I didn't sleep as well as I usually sleep."
- "I was happy."
- "I felt lonely, like I didn't have any friends."
- "It was hard to get started doing things."

Response options were 1 = Rarely or none of the time (less than 1 day), 2 = Some or a little of the time (1-2 days), 3 = Occasionally or a moderate amount of time (3-4 days), 4 = All of the time (5-7 days). When looking at the Depression index on its own, higher values indicate greater depression. When including this scale in the Mental Health Index, we reverse-scored it such that higher values indicate better mental health (i.e., lower depression).

(b) **Happiness**: we administered one item from the World Value Survey (WVS): "Taking all things together, would you say you are..." where the response options were 1 = Very happy, 2 = Quite happy, 3 = Not very happy, 4 = Not at all happy. The item was reverse-scored so that higher values indicate greater happiness.

(c) **Life satisfaction**: we administered one item from the WVS: "All things considered, how satisfied are you with your life as a whole these days on a scale of 1 to 10?" where 1 = Very dissatisfied and 10 = Very satisfied.

(d) **Hope**: we administered the Children's Hope Scale (Snyder et al., 1997). On this scale, participants indicate how often they agree with the following statements:

- "I think I am doing pretty well."
- "I am doing just as well as other kids of my age."
- "I think the things I have done in the past will help me in the future."
- "I can think of many ways to get the things in life that are most important to me."
- "When I have a problem, I can come up with lots of ways to solve it."
- "Even when others want to quit, I know that I can find ways to solve the problem."

Response options ranged from 1 (None of the time) to 6 (All of the time). For exploratory purposes, we also analyzed the data according to the two subscales within the Children's Hope Scale: the Agency index (the first three items) and the Pathways index (the last three items).

2. **Dispositional envy**:

   Dispositional envy was assessed using the Benign and Malicious Envy Scale (BeMaS; Lange and Crusius, 2015). In accordance with the scale, we created an index for both Benign and Malicious Envy.

   The Benign Envy index was constructed by asking participants how much they agreed with the following items:

   - "When I envy others, I focus on how I can become equally successful in the future."
   - "If I notice that another person is better than me, I try to improve myself."
   - "Envying others motivates me to accomplish my goals", "I strive to reach other people's superior achievements."
   - "If someone has superior qualities, achievements, or possessions, I try to attain them for myself."

   The Malicious Envy index was constructed using the following items:

   - "I wish that superior people lose their advantage."
   - "If other people have something that I want for myself, I wish to take it away from them."
   - "I feel ill will towards people I envy."
   - "Envious feelings cause me to dislike the other person."
   - "Seeing other people's achievements makes me resent them."

   Response options to both indices range from 1 (Strongly disagree) to 6 (Strongly agree).

3. **Descriptive envy**:

   To assess participants' perceptions of envy within their community, we presented them with pairs of opposing statements and asked them to indicate with which one they agreed more. The pairs of consisted of the following items:

   Pair 1:

   - Statement 1: Most kids that I know frequently have strong feelings of envy.
   - Statement 2: Most kids that I know hardly ever have strong feelings of envy.

   Pair 2:

   - Statement 1: Most kids that I know resent the success of other kids.

- Statement 2: Most kids that I know celebrate the success of other kids

Pair 3:

- Statement 1: Most kids that I know feel inspired and motivated when they observe others succeeding.
- Statement 2: Most kids that I know feel frustrated when they observe others succeeding.

Pair 4:

- Statement 1: Most kids that I know wish that people with superior qualities, achievements, or possessions have continued success and prosperity.
- Statement 2: Most kids that I know wish that people with superior qualities, achievements, or possessions lose their success and prosperity.

Participants responded on a 1 (Agree strongly with Statement 1) to 4 (Agree strongly with Statement 2) scale. Higher values indicate greater descriptive envy.

4. **Trust**:

   As an index of trust, we asked participants to indicate how much they trusted various groups of people. The groups included "family", "extended family", "friends", "neighbors", "people from your village", "people from other villages", "people who are wealthier than you", "people who are less wealthy than you", and "people you don't know." Response options were as follows: 1 = Not at all, 2 = Not very much, 3 = Somewhat, 4 = Completely.

5. **Closeness**:

   As an index of closeness, we applied the figures from Aron, Aron, and Smollan's 1992 Inclusion of Self in Others Scale to various groups of people. On each question, participants were asked "Using the figures provided, which set of figures best represents how close you feel to..." The figures consisted of seven pairs of circles that varied in their degree of overlap or separation. One circle was labeled as "Self" and the other was labeled with the following groups: "your parents", "other people in your family", "people in your village", and "your friends". The Closeness Index was created by using the seven circles as a 1 (the most separated) to 7 (the most overlapping) scale and taking the average of the responses. Higher values indicate more closeness.

6. **Zero-sum thinking**:

As an index of zero-sum thinking, we presented participants with pairs of opposing statements and asked them to indicate with which one they agreed more. The statement pairs are as follows:

Pair 1:

- Statement 1: If one of my friends gets a lot of something (like toys, money, or food), my other friends will have less of it.
- Statement 2: If one of my friends gets a lot of something (like toys, money, or food), my other friends will not necessarily have less of it.

Pair 2:

- Statement 1: People only make money when others lose money.
- Statement 2: No one need to lose money for others to make money.

Pair 3:

- Statement 1: The success of the wealthy generally helps other people.
- Statement 2: The success of the wealthy generally hurts other people.

Pair 4:

- Statement 1: When one person succeeds, others try to help him/her succeed further.
- Statement 2: When one person succeeds, others try to bring him/her down.

Pair 4:

- Statement 1: People support and admire those who succeed.
- Statement 2: People feel jealousy and spite towards those who succeed.

Pair 5:

- Statement 1: In general, people feel pleasure when witnessing the downfall of powerful people.
- Statement 2: In general, people feel sad when witnessing the downfall of powerful people

Participants responded on a 1 (Agree strongly with Statement 1) to 4 (Agree strongly with Statement 2) scale. Higher values indicate greater zero-sum thinking.

7. **Locus of control**:

As an index of locus of control, we presented participants with two pairs of opposing statements and asked them to indicate with which one they agreed more. The pairs of consisted of the following items:

Pair 1:

- Statement 1: Becoming a success is a matter of hard work; luck has little or nothing to do with it.
- Statement 2: Becoming a success is a matter of luck; hard work has little or nothing to do with it.

Pair 2:

- Statement 1: My own decisions have almost no effect on how much money I will make.
- Statement 2: My own decisions have a big effect on how much money I will make.

Participants responded on a 1 (Agree strongly with Statement 1) to 4 (Agree strongly with Statement 2) scale. Higher values indicate greater locus of control.

Additionally, we included one item from the WVS: "Some people feel they have free choice and complete control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means 'no choice at all' and 10 means 'a great deal of choice' to indicate how much freedom of choice and control you feel you have over the way your life turns out." We took the average of of the two pairs of statements and the one WVS item to create the Locus of Control Index.

8. **Perceptions about sharing**:

As an index of perceptions about sharing, we asked participants to indicate their agreement with a series of statements. Specifically, these statements tapped into their perceptions of norms surrounding people's willingness to share money that had been earned through luck, and money that had been eared through hard work. The "luck" items were as follows:

- "If I earned money by luck, I would share it."
- "If someone else earns money through luck, he/she should share it."
- "If one of my friends earns money through luck, he/she will share it."

The "hard work" items were as follows:

- "If I earned money through hard work, I would share it."
- "If someone else earns money through hard work, they should share it."
- "If one of my friends earns money through hard work, they will share it."

Participants responded on a 1 (strongly disagree) to 5 (strongly agree) scale. Higher values indicate stronger perceived norms surrounding sharing.

3.2 Examples of Game Appearance

Figure C.1: Dictator Game

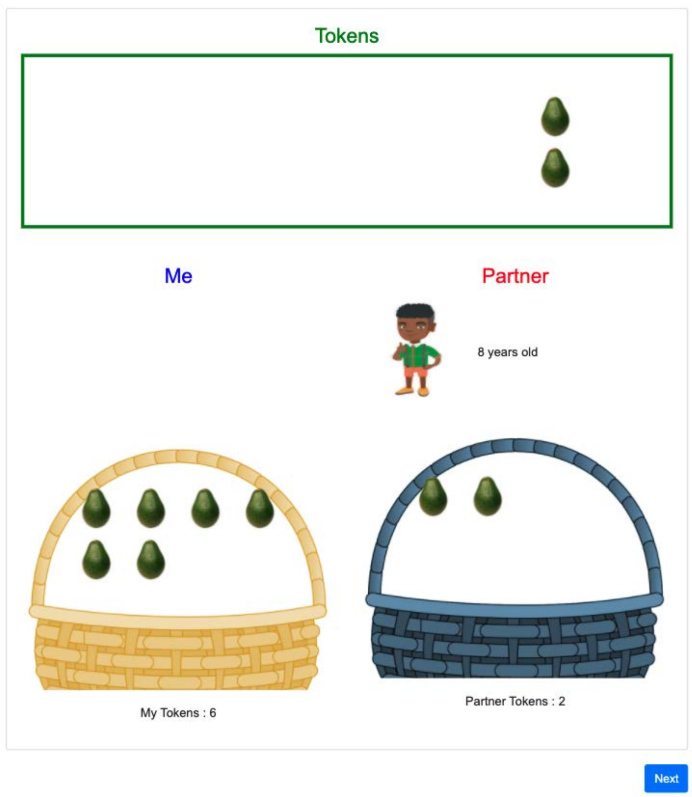
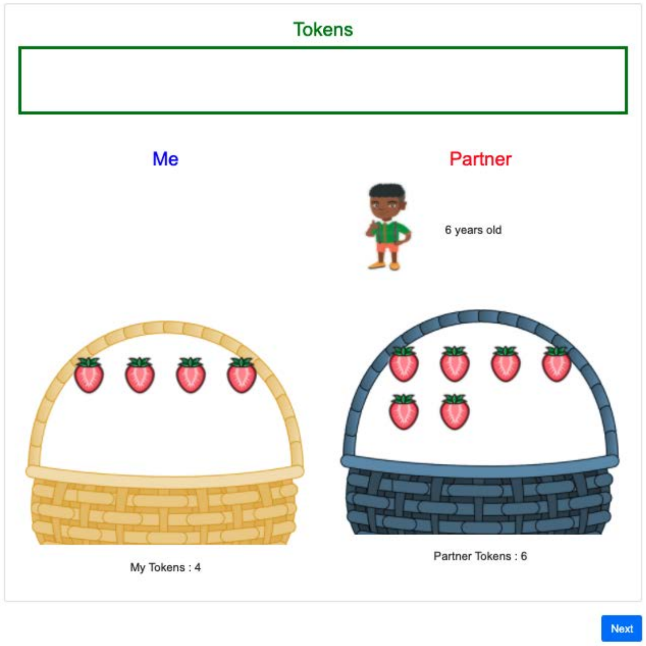


Figure C.2: Ultimatum Game

Round 1: offer to partner



Round 2: accept/reject offer from partner

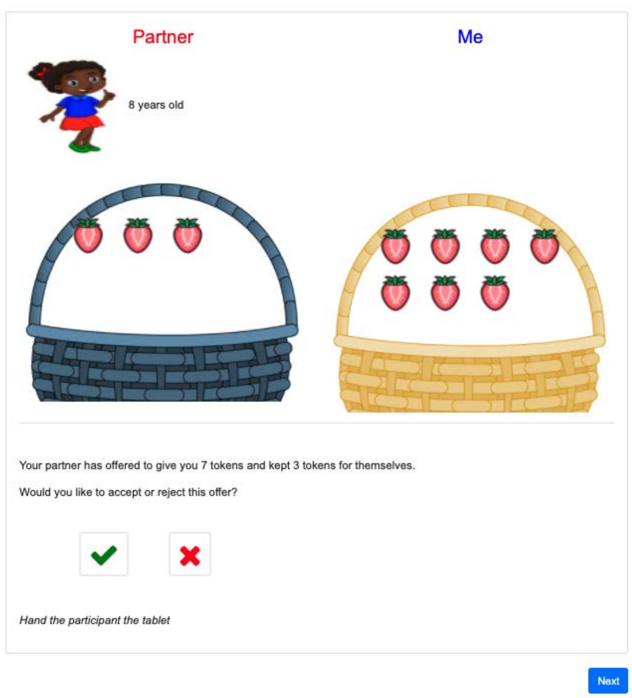
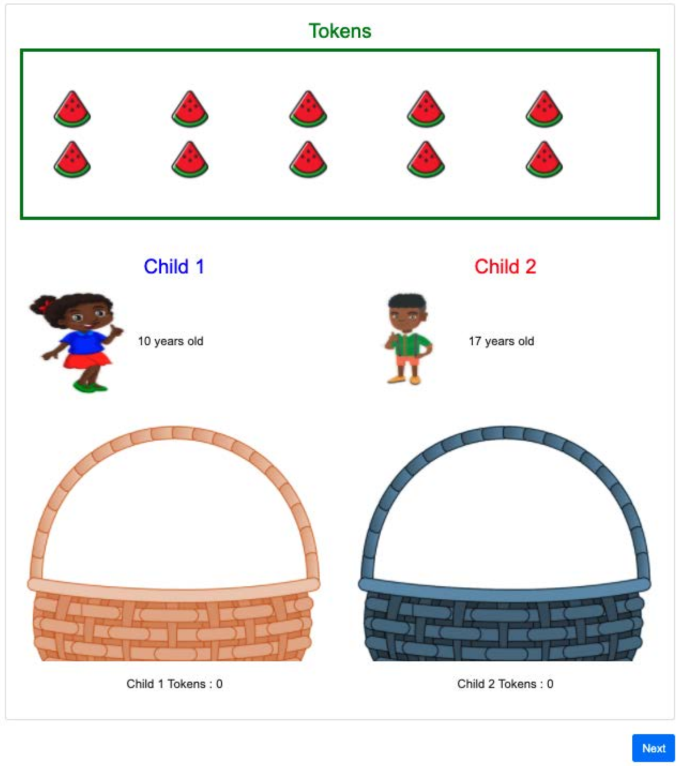


Figure C.4: Third-Party Dictator Game



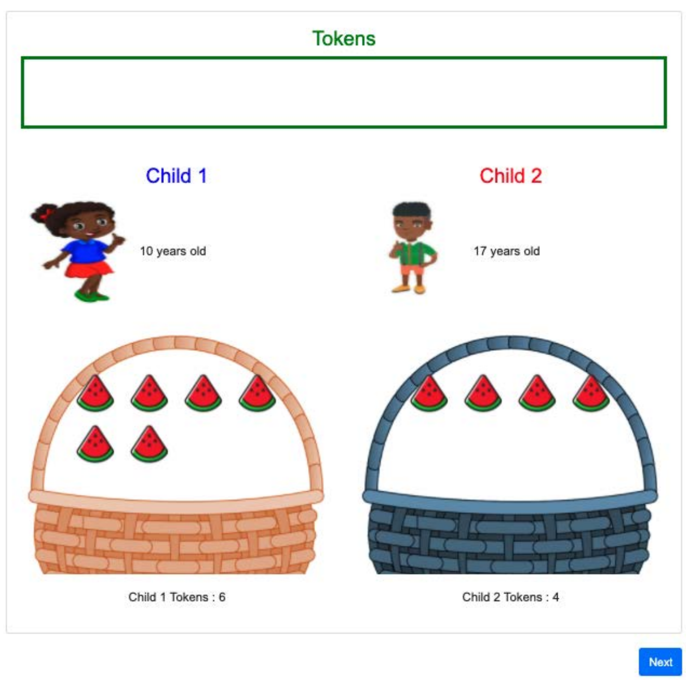


Figure C.5: Joy of Destruction Game

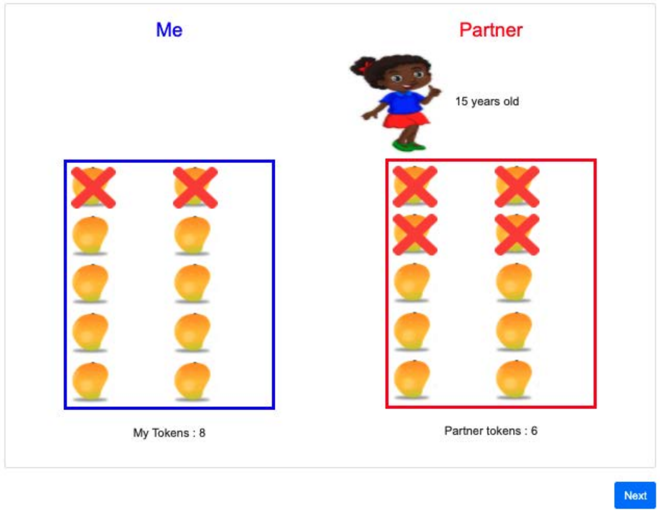
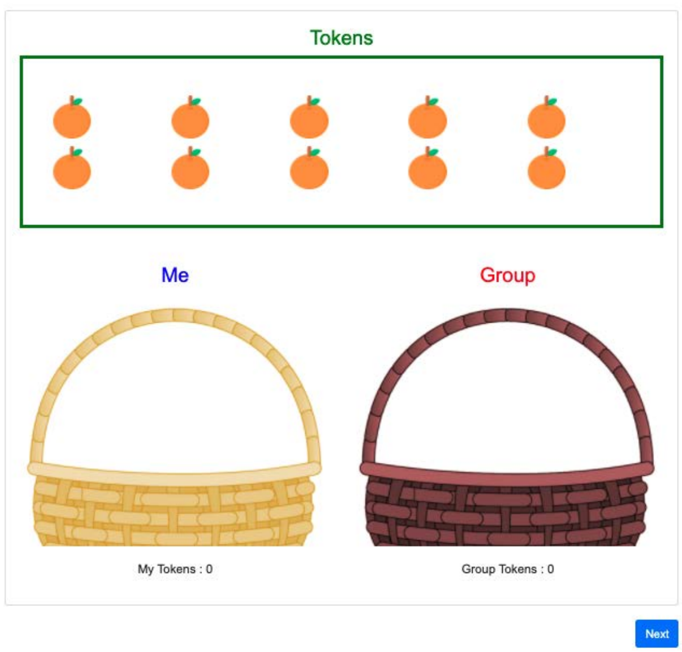
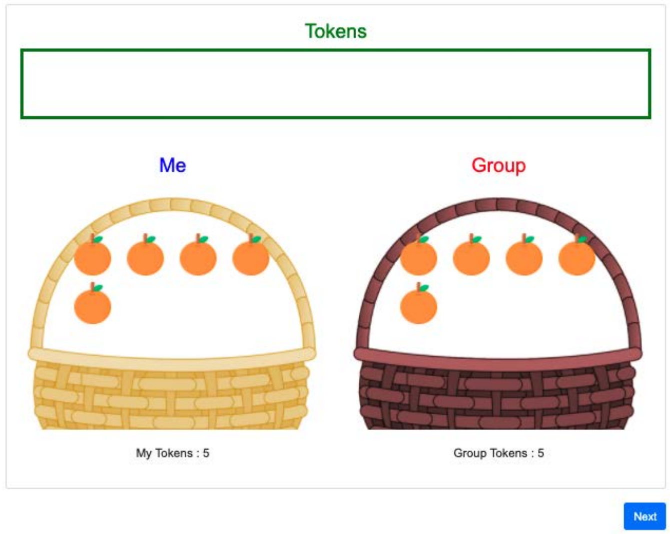


Figure C.6: Public Goods Game





3.3 Experimental Protocols

Text in italics are instructions for the enumerator that were not read aloud.

You have been selected to play five little games for a research project Busara is working on. In each game you can earn tokens, which you will be able to trade in for one or more of the prizes I have brought with me. The number of tokens you earn will depend on the choices you make during the activity, as well as the choices of other participants you play these activities with. Pay very careful attention to the instructions for each game, because the better you understand them, the more tokens you can earn, and the more tokens you have, the more things you will be able to buy.

If you want to stop playing at any point, that's fine. Just let me know and we'll stop, and you'll still get the tokens you earned on the games you did play. Do you want to play the games? [*Yes*/*No*]

3.3.1 Dictator Game

Instructions

Now I will explain how to play the [first/next/last] game. It is very important to pay attention because only those who understand the rules of the game well will be able to play.

In this game, there are two players: you and another child from a community like yours. We cannot tell you exactly who you are playing with, but we can tell you two things about the other child: their age and gender.

The other child will also not know exactly who you are, but they will also be told your age and gender.

I also don't know who you are playing with. There is only one person at Busara who knows exactly who plays with whom, and that person will never tell anyone.

In this game there are 10 tokens, which you must split between yourself and the other child. You can give between 0 and 10 tokens to the other child and you will keep the rest.

Examples

Now, we are going to run through some examples to show how this game can be played.

1. [*FO: Place 10 blocks on the table*]

Here is the first example.

[*FO: Push 2 of the blocks to one side of the table, and the other 8 blocks closer to the participant.*]

If you wanted, you could give 2 tokens to the other child. Then you would get 8 tokens and the other child would get 2.

2. [*FO: Push all 10 blocks into the middle of the table again.*]

Here is another example.

[*FO: Push 5 of the blocks to one side of the table, and the other 5 blocks closer to the participant.*]

If you wanted, you could give 5 tokens to the other child. Then you would get 5 tokens and the other child would get 5.

3. [*FO: Push all 10 blocks into the middle of the table again.*]

Here is the last example.

[*FO: Push all 10 blocks closer to the participant.*]

If you wanted, you could not give any tokens to the other child. Then you would get 10 tokens and the other child would get none.

Test Questions

Now, I am going to ask you some questions to be sure that you have understood.

Use the following list as test questions. Note whether the respondent gives the correct response. If the respondent gives an incorrect answer for a question, explain the correct answer slowly and carefully until the respondent can give the correct answer for that question.

1. What decisions does the other child make in this game?

   None, they simply receive the tokens you have decided to give them. [*Correct*]

   They can reject the tokens you give them. [*Incorrect*]

2. Imagine that you choose to give 4 tokens to the other child.

   How many tokens will the other child get? [*4 tokens*]

   How many tokens will you get? [*6 tokens*]

3. Now imagine that you choose to give 8 tokens to the other child.

How many tokens will you get? [2 *tokens*]

And how many tokens will the other child get? [*8 tokens*]

4. What pieces of information will you have about the other child?

   Age and gender [*Correct*]

   Age and name [*Incorrect*]

5. What pieces of information will the other child have about you?

   Age and gender [*Correct*]

   Age and name [*Incorrect*]

Activity

Okay, now that you understand the game, let's play.

The other child is a [XX]-year-old [boy/girl].

When I hand you the tablet, you will see a screen with ten tokens. You will also see two baskets. The one labeled "ME" represents how many tokens you will receive. The other basket labeled "OTHER CHILD" represents how many tokens you would like to give to the other child.

Please click and drag all ten tokens to one of the two baskets to show how many tokens you would like to give to the other child and how many tokens you would like to keep for yourself. You can always move a token from one basket to the other if you change your mind; just click on the token and it will return to the green box. And remember, if you like, you can decide to keep all ten tokens for yourself, or you can decide to give them all to the other child. And as a reminder, I won't know how many tokens you have kept for yourself and how many you gave to the other child.

When you are done dividing the tokens, please press the button at the bottom of the screen, and then hand the tablet back to me.

Check that the participant has understood the instructions, including how to complete the task on the tablet. Then, hand the tablet to the participant.

When they hand the tablet back...

If last game

And that was the last game, let's find out how many tokens you earned overall!

If not last game

That's the end of the game, thanks for playing!

3.3.2 Ultimatum Game

Instructions

Now we will move on to the [first/next/last] game. It is very important to pay attention because only those who understand the rules of the game well will be able to play.

In this game, there are two players: you and another child from a community like yours. We cannot tell you exactly who you are playing with, but we can tell you two things about the other child: their age and gender.

The other child will also not know exactly who you are, but they will also be told your age and gender. I also don't know who you are playing with. There is only one person at Busara who knows exactly who plays with whom, and that person will never tell anyone.

There are two rounds in this game. I will now explain to you the first round. In this round, there are 10 tokens which you must divide between yourself and the other child. You can give between 0 and 10 tokens to the other child, and then you will keep the rest.

However, if the other child does not like how many tokens they have received from you, they can turn down your offer. If the other child decides to do this, then neither you nor the other child will get any tokens.

Examples

Now, we are going to run through some examples to show how this game can be played.

1. Here is the first example.

[*FO: Place 5 blocks on one side of the table and 5 blocks on the other side*]

Imagine you choose to give 5 tokens to the other child. Now imagine the other child accepts this offer. This means the other child will get 5 tokens and you will get 5 tokens.

[*FO: Push the two piles of blocks further away from each other*]

2. Here is another example.

[*FO: Return the 10 blocks to the middle. Then, push 1 block to one side of the table and 9 blocks closer to the participant*]

Imagine you choose to give 1 token to the other child. Now imagine the other child turns down this offer. This means both you and the other child will not get any tokens.

[*FO: Take all the blocks away*]

3. Here is the last example.

[*FO: Place 10 blocks on the table. Then, push 2 blocks to one side of the table and 8 blocks closer to the participant*]

Imagine you choose to give 2 tokens to the other child. Now imagine the other child accepts this offer. This means the other child will get 2 tokens and you will get 8 tokens.

[*FO: Push the pile of 8 blocks closer to the participant and the pile of 2 blocks further away from the participant*]

Test Questions

Now, I am going to ask you some questions to be sure that you have understood. Then, we will begin to play.

Use the following list as test questions. Note whether the respondent gives the correct response. If the respondent gives an incorrect answer for a question, explain the correct answer slowly and carefully until the respondent can give the correct answer for that question.

1. What decisions do you make in this game?

How many of the 10 tokens to give to the other child. [*Correct*]

Nothing [*Incorrect*]

I receive tokens from the other child. [*Incorrect*]

2. What decisions does the other child make in this game?

How many tokens to send to you. [*Incorrect*]

Whether or not to accept your offer. [*Correct*]

3. Now imagine that you choose to give 4 tokens to the other child. The other child accepts this offer.

How many will the other child get? [*4*]

How many will you get? [*6*]

4. Now imagine that you choose to give 1 token to the other child. The other child turns down this offer.

How many will you get? [*0*]

How many will the other child get? [*0*]

5. Now imagine that you choose to give 4 tokens to the other child. The other child turns down this offer.

How many will the other child get? [*0*]

How many will you get? [*0*]

6. What pieces of information will you have about the other child?

Age and gender [*Correct*]

Age and name [*Incorrect*]

7. What pieces of information will the other child have about you?

Age and gender [*Correct*]

Age and name [*Incorrect*]

Round 1: Proposer

Okay, now we are going to start the game.

The other child is a [XX]-year-old [boy/girl].

On the tablet, you will see 10 tokens and two empty baskets on each side of the screen. One basket is labeled "ME" which represents how many tokens you will receive. The other basket is labeled "OTHER CHILD" which represents how many tokens you would like to give to the other child.

In a moment, I will hand you the tablet. You will then drag all 10 tokens to one of the two baskets. You can always move a token from one basket to the other if you change your mind; just click on the token and it will return to the green box. Remember, if you like, you can decide to put all 10 tokens into the same basket. But you must put all 10 tokens in one of the two baskets. And as a reminder, I won't know how many tokens you have kept for yourself and how many you gave to the other child.

When you are done, please press the button at the bottom of the screen, and then hand the tablet back to me.

Check that the participant has understood the instructions, including what to do on the tablet. Then, leave the participant alone until they are finished.

Round 2: Responder

While we wait for the other child to decide whether to accept or turn down your offer, we will play this game again. You will be paired with a new child. This time, the roles will be reversed, and you will be deciding whether or not to accept the offer you receive from another child.

Now, let me tell you about the other child.

The other child is [XX]-year-old [boy/girl].

When I hand you the tablet, you will see their offer on the screen. If you would like to accept the offer, please click the green button. If you would like to turn down this offer, please click the red button.

Remember, if you turn down this offer, both you and the other child will not get any tokens.

The other child has offered to give you [XX] tokens and kept [10 – XX] tokens for themselves.

Would you like to accept or reject this offer?

Hand the participant the tablet

If they accept the offer:

This means you will get to keep the [XX] tokens from the other child.

If they reject the offer:

Why have you decided to reject the offer? *Record answer*

Round 1: Outcome

Your offer from earlier was sent to the other child and [his/her] decision has come back. [He/She] has decided to [accept/reject] your offer.

If Player 2 accepted:

This means you will get to keep your tokens.

If Player 2 rejected:

This means both you and the other child will not earn any tokens.

If last game

And that was the last game, let's find out how many tokens you earned overall!

If not last game

That's the end of the game, thanks for playing!

3.3.3 Third Party Dictator Game

Instructions

Now we will move on to the [first/next/last] game. It is very important to pay attention because only those who understand the rules of the game well will be able to play.

In this game, you will make a decision for two other children from a community like yours. We cannot tell you exactly who they are, but we can tell you two things about them: their age and gender.

The other children will also not know exactly who you are, but they will also be told your age and gender.

I also don't know who you are playing with. There is only one person at Busara who knows exactly who plays with whom, and that person will never tell anyone.

In this game there are 10 tokens, and you must split them between the other two children. You cannot keep any of the tokens for yourself, you must give them all to the other children.

Examples

Now, we are going to go through some examples to show how this game can be played.

1. [*FO: Place 10 blocks on the table.*]

Here is the first example.

[*FO: Push 7 blocks to one side of the table and 3 blocks to the other side.*]

If you wanted, you could give 7 tokens to Child 1, then Child 2 would get 3 tokens.

2. [*FO: Return all 10 blocks to the middle.*]

Here is another example.

[*FO: Place 2 blocks on one side of the table and 8 blocks on the other side.*]

If you wanted, you could give 2 tokens to Child 1, then Child 2 would get 8 tokens.

3. [*FO: Return all 10 blocks to the middle.*]

Here is the last example.

[*FO: Push 5 blocks to one side of the table, and 5 blocks to the other side.*]

If you wanted, you could give 5 tokens to Child 1, then Child 2 would get 5 tokens.

Test Questions

Now, I am going to ask you some questions to be sure that you have understood.

Use the following list as test questions. Note whether the respondent gives the correct response. If the respondent gives an incorrect answer for a question, explain the correct answer slowly and carefully until the respondent can give the correct answer for that question.

1. What decisions do the other children make in this game?

   None, they simply receive the tokens you decide to give them. [*Correct*]

   They can turn down the tokens you decide to give them. [*Incorrect*]

2. How many of the 10 tokens can you keep for yourself?

   3 tokens [*Incorrect*]

   None, you must divide all of them between the two other children. [*Correct*]

   8 tokens [*Incorrect*]

3. Imagine that you give 10 tokens to Child 1.

   How many will Child 1 get? [*10*]

   How many will Child 2 get? [*0*]

4. Now imagine that you give 4 tokens to Child 1.

   How many will Child 1 get? [*4*]

   How many will Child 2 get? [*6*]

5. What pieces of information will you have about the other two children?

   Age and gender [*Correct*]

   Age and Name [*Incorrect*]

Activity

Okay, now that you understand the game, let's play.

Child 1 is a [XX]-year-old [boy/girl].

Child 2 is a [XX]-year-old [boy/girl].

When I hand you the tablet, you will see a screen with ten tokens. You will also see two baskets. The one labeled "CHILD 1" represents how many tokens you would like to give to the first child. The other basket labeled "CHILD 2" represents how many tokens you would like to give to the other child.

Please click and drag all ten tokens to one of the two baskets to show how many tokens you would like to give to Child 1 and how many tokens you would like to give to Child 2. You can always move a token from one basket to the other if you change your mind; just click on the token and it will return to the green box. And if you want, you can give all ten tokens to one of the two children. But remember, you cannot keep any of the tokens for yourself, you have to divide them all between the two other children. And as a reminder, I won't know how many tokens you have decided to give to each child.

When you are done dividing the tokens, please press the button at the bottom of the screen, and then hand the tablet back to me.

Check that the participant has understood the instructions, including how to complete the task on the tablet. Then, hand the tablet to the participant.

When they hand the tablet back...

If last game

And that was the last game, let's find out how many tokens you earned overall!

If not last game

That's the end of the game, thanks for playing!

3.3.4 Joy of Destruction Game

Instructions

Now we will move on to the [first/next/last] game. It is very important to pay attention because only those who understand the rules of the game well will be able to play.

In this game, there are two players: you and another child from a community like yours. We cannot tell you exactly who you are playing with, but we can tell you two things about the other child: their age and gender.

The other child will also not know exactly who you are, but they will also be told your age and gender. I also don't know who you are playing with. There is only one person at Busara who knows exactly who plays with whom, and that person will never tell anyone.

So, in this game, you and the other child will each get 10 tokens. But if you don't want the other child to have 10 tokens, you can change that. You can decide to remove some of the other child's tokens. But this will cost you some of your tokens. Specifically, you will have to pay 1 token for every 2 tokens you want to remove. So if you wanted the other child to only have 8 tokens, then you'd have to give up one of your tokens. Then, the other child would have 8 tokens, and you'd have 9.

You can decide to remove as many of the other child's tokens as you want. But you can also decide not to remove any of the other child's tokens if you want. In that case, both you and the other child would still receive 10 tokens.

The other child does not do anything in this game. They simply have to accept the number of tokens you would like them to have.

Examples

Now, we are going to run through some examples to show how this game can be played.

1. Here is the first example.

[*FO: Place 10 blocks on one side of the table and 10 blocks on the other side close to the participant*]

Imagine that you choose to remove 4 of the other child's tokens. This will cost you 2 tokens.

[*FO: remove 4 blocks from one of the piles and 2 blocks from the pile close to the participant*]

So, you will get 8 tokens and the other child will get 6 tokens.

2. Here is another example.

[*FO: put all the blocks back so there are 10 on each side*]

Imagine that you choose to remove all 10 tokens from the other child. This will cost you 5 tokens.

[*FO: remove 5 blocks from the pile close to the participant and all 10 blocks from the other pile*]

So, you will get 5 tokens and the other child will not get any tokens.

Test Questions

Now, I am going to ask you some questions to be sure that you have understood.

1. What decisions does the other child make in this game?

    They can remove some of your tokens. [*Incorrect*]

    None, they simply receive the tokens you decide to give them. [*Correct*]

2. If you want to remove two of the other child's tokens, how much do you have to pay?

    1 Token [*Correct*]

    2 Tokens [*Incorrect*]

    3 Tokens [*Incorrect*]

3. Imagine that you decide to remove 4 of the other child's tokens.

    How much will this cost you? [*2*]

    So how many tokens will you get in the end? [*8*]

    And how many will the other child get? [*6*]

4. Imagine that you decide to remove 8 of the other child's tokens.

    How much will this cost you? [*4*]

    So how many tokens will you get in the end? [*6*]

    And how many will the other child get? [*2*]

5. Imagine that you decide not to remove any of the other child's tokens.

    How much will this cost you? [*0*]

    So how many tokens will you get in the end? [*10*]

    And how many will the other child get? [*10*]

6. What information do you have about the other child?

   Age and gender [*Correct*]

   Age and name [*Incorrect*]

7. What information does the other child have about you?

   Age and gender [*Correct*]

   Age and name [*Incorrect*]

Activity

Okay, now that you understand the game, let's play.

The other child is a [XX]-year-old [boy/girl].

In a minute, I will ask you to take the tablet and make your decision about how many tokens you'd like the other child to have.

On the screen you will see two boxes, one labeled "ME" which represents how many tokens you have, and one labeled "OTHER CHILD" which represents how many tokens the other child has. In each box, you will see 10 tokens.

To remove the other child's tokens, click on the tokens in your box. Each of your tokens you click on will remove two of the other child's tokens. Tokens that have been removed will have an X on them.

If you change your mind, you can always click on one of your X'd out tokens again, and this will give two previously-removed tokens back to the other child, and it will give you back one previously-removed token.

If you want, you can also choose not to remove any of the other child's tokens. And remember, I won't know how many of the other child's tokens you decided to remove.

Once you are done with your decision, please press the button on the bottom of the screen and hand the tablet back to me.

Check that the participant has understood the instructions, including how to complete the task on the tablet. Then, hand the tablet to the participant.

When they hand the tablet back...

If last game

And that was the last game, let's find out how many tokens you earned overall!

If not last game

That's the end of the game, thanks for playing!

3.3.5 Public Goods Game

Instructions

Now we will move on to the [first/next/last] game. It is very important to pay attention because only those who understand the rules of the game well will be able to play.

This game is played in groups of 4: you will play with three other children from a community like yours. We cannot tell you exactly who you are playing with, but we can tell you two things about the other children: their age and gender. The other children will also not know exactly who you are, but they will also be told your age and gender.

I also don't know who you are playing with. There is only one person at Busara who knows exactly who plays with whom, and that person will never tell anyone.

So, in this game, each of the four children receives 4 tokens. Each child will decide how many of their 4 tokens to put in the group basket and how many to keep for themselves. You can put any amount between 0 and 4 tokens into the group basket, and you will keep the remaining tokens for yourself. Once everyone has made their decision, the total amount in the group basket gets doubled. This doubled amount then gets evenly divided amongst the four children. So you will get those tokens, plus the ones you decided to keep for yourself. It is important to know that each child gets the same number of tokens from the group basket regardless of how many they actually put in themselves. You might get back more than you put in, but you also might get back less. It all depends on what the other children in your group do. Also keep in mind that each child's decision is private, so nobody will know how many tokens the others have put in the group basket. I also won't know how many you or the other children have put in the group basket and kept for themselves.

Examples

Now, we are going to run through some examples to show how this game can be played.

1. Here is the first example.

[*FO: Make four piles of 4 blocks*]

Imagine that you put 2 tokens in the group basket, and the other three children put 2 tokens into the group basket as well. That means, in total there are 8 tokens in the group basket.

[*FO: Take 2 blocks from each pile and put them in the middle*]

This amount will be doubled, so now there are 16 tokens in the group basket.

[*FO: Add 8 blocks to the middle pile*]

You and the other three children will then receive an equal share of that amount, so that's 4 tokens each.

[*FO: Evenly divide the 16 blocks up, pushing 4 blocks to each of the four piles*]

Each child receives those 4 tokens in addition to the ones they kept for themselves, so at the end of the game, you and the other three children will each get a total of 6 tokens.

2. Here is another example.

[*FO: Make four piles of 4 blocks*]

Imagine that the other three children put all 4 tokens into the group basket, and you put in 2 tokens. That means, in total there are 14 tokens in the group basket.

[*FO: Take all 4 blocks from three piles, and 2 blocks from the pile closest to the participant, and put them in the middle*]

This amount will be doubled, so now there are 28 tokens in the group basket.

[*FO: Add 14 blocks to the middle pile*]

You and the other three children will then receive an equal share of that amount, so that's 7 tokens each.

[*FO: Evenly divide the 28 blocks up, pushing 7 blocks to each of the four piles*]

Each child receives those 7 tokens in addition to the ones they kept for themselves, so at the end of the game, the other three children who gave all their tokens will get 7 tokens. Since you gave 2 tokens and kept 2 tokens, you will now have a total of 9 tokens.

3. Here is the last example.

[*FO: Make four piles of 4 blocks*]

Imagine that three other children don't put any tokens into the group basket and you put in all 4 tokens. That means, in total there are 4 tokens in the group basket.

[*FO: Take all 4 blocks from the pile closest to the participant and put them in the middle*]

This amount will be doubled, so now there are 8 tokens in the group basket.

[*FO: Add 4 blocks to the middle pile*]

You and the other three children will then receive an equal share of that amount, so that's 2 tokens each.

[*FO: Evenly divide the 8 blocks up, pushing 2 blocks to each of the four piles*]

Each child receives those 2 tokens in addition to the ones they kept for themselves. So at the end of the game, the three children who didn't give any tokens will get 6 tokens and since you gave all 4 tokens, you will now have a total of 2 tokens.

Test Questions

Now, I am going to ask you some questions to be sure that you have understood how to play the game.

Use the following list as test questions. If it is necessary to ask more test questions, start again with the first example above and write "Repeated test questions" on your answer sheet.

1. How many tokens does each child have to divide between themselves and the group basket? [4]

2. Imagine that you put 2 tokens into the group basket. How many tokens do you keep for yourself? [2]

3. What happens to the tokens that are in the group basket?

   Nothing [*Incorrect*]

   They get doubled [*Correct*]

   They get tripled [*Incorrect*]

4. After the tokens in the group basket are doubled, what happens to them?

   They get evenly divided among the four children [*Correct*]

   I get all the tokens [*Incorrect*]

5. Imagine that one of the children didn't put any tokens into the group basket, they kept all 4 tokens for themselves. Does this child get the same number of tokens from the group basket as you do?

   Yes [*Correct*]

   No [*Incorrect*]

6. Will anybody in your group know how many tokens you put into the group basket?

   Yes [*Incorrect*]

   No [*Correct*]

Activity

Now that you understand how to play, we are going to start the game. Let me tell you about the other children.

Child 1 is a [XX]-year-old [boy/girl].

Child 2 is a [XX]-year-old [boy/girl].

Child 3 is a [XX]-year-old [boy/girl].

The other three children have already put their tokens into the group basket so in a moment I will hand you the tablet so you can make your decision as well.

On the screen, you will see 4 tokens. You will also see two baskets. The one labeled "ME" represents how many tokens you will receive. The other basket labeled "GROUP" represents how many tokens you would like to put into the group basket.

Please click and drag all 4 tokens to one of the two baskets to show how many tokens you would like to put into the group basket and how many you would like to keep for yourself. You can always move a token from one basket to the other if you change your mind; just click on the token and it will return to the green box. And remember, if you like, you can keep all 4 tokens for yourself, or you can put them all into the group basket. And keep in mind, the other children won't know how many tokens you have put into the group basket, and I won't know either.

When you are done, please press the button at the bottom of the screen and then hand the tablet back to me.

Check that the participant has understood the instructions, including how to complete the task on the tablet. Then, hand the tablet to the participant.

When they hand the tablet back...

In total, there are [XX] tokens in the group basket. This amount will be doubled meaning now there are [XX] tokens. This amount will be divided evenly between you and the other three children. This means you will get [XX] tokens, in addition to the tokens you kept for yourself.

If last game

And that was the last game, let's find out how many tokens you earned overall!

If not last game

That's the end of the game, thanks for playing!

3.4 Games Repeated with Partner Info

Now we are going to play some of the games again with new partners. Just like in the previous games, we cannot tell you exactly who you are playing with, but we can tell you some things about the other children: their age and gender. We can also now tell you one more thing about them, whether they come from a family that is richer or poorer than your family.

Now, I am going to ask you a question to be sure that you have understood what that means.

If Family A has 10 tokens and Family B has 5 tokens, which family is richer? [*Family A*]

And if Family A has 10 tokens and Family B has 15 tokens, which family is poorer? [*Family A*]

3.4.1 Dictator Game

Great! Now let's play the game where you split 10 tokens between yourself and another child. You can give between 0 and 10 tokens to the other child, and you will keep the rest. Do you remember how to play that game?

If no

Okay, here's an example.

[*FO: Place 10 blocks on the table. Push 2 of the blocks to one side of the table, and the other 8 blocks closer to the participant.*]

If you wanted, you could give 2 tokens to the other child. Then you would get 8 tokens and the other child would get 2.

Okay, let's play!

The other child you are playing with is a [XX]-year-old [boy/girl] who comes from a family that is [richer/poorer] than your family.

The process is exactly like it was before. When I hand you the tablet, you will again see a screen with ten tokens, and you will have to divide them between your basket and the other child's basket. When you are done dividing the tokens, please press the button at the bottom of the screen, and then hand the tablet back to me. And remember, I won't know how many tokens you have kept for yourself and how many you gave to the other child.

Check that the participant has understood the instructions, including how to complete the task on the tablet. Then, hand the tablet to the participant.

When they hand the tablet back...

Okay, now let's play that game one more time, this time with a different partner.

The other child you are playing with this time is a [XX]-year-old [boy/girl] who comes from a family that is [richer/poorer] than your family.

When I hand you the tablet, you will again see a screen with ten tokens, and you will have to divide them between your basket and the other child's basket. When you are done dividing the tokens, please press the button at the bottom of the screen, and then hand the tablet back to me.

When they hand the tablet back...

If last game

And that was the last game, let's find out how many tokens you earned overall!

If not last game

That's the end of that game, thanks for playing!

3.4.2 Ultimatum Game

Now let's play the game where you split 10 tokens between yourself and another child, but the other child can turn down your offer. If the other child decides to do this, then neither you nor the other child will get any tokens. Do you remember how to play that game?

If no

Okay, here's an example.

[*FO: Place 10 blocks on the table. Then, push 2 blocks to one side of the table and 8 blocks closer to the participant.*]

Imagine you choose to give 2 tokens to the other child. Now imagine the other child turns down this offer. This means both you and the other child will not get any tokens.

[*FO: Take all the blocks away.*]

Okay, let's play!

Proposer

The other child you are playing with is a [XX]-year-old [boy/girl] who comes from a family that is [richer/poorer] than your family.

The process is exactly like it was before. When I hand you the tablet, you will again see a screen with ten tokens, and you will have to divide them between your basket and the other child's basket, and then the other child will decide whether or not to accept your offer. When you are done dividing the tokens, please press the button at the bottom of the screen, and then hand the tablet back to me. And remember, I won't know how many tokens you have kept for yourself and how many you gave to the other child.

Check that the participant has understood the instructions, including how to complete the task on the tablet. Then, hand the tablet to the participant.

Okay, now let's play that game one more time, this time with a different partner.

The other child you are playing with this time is a [XX]-year-old [boy/girl] who comes from a family that is [richer/poorer] than your family.

When I hand you the tablet, you will again see a screen with ten tokens, and you will have to divide them between your basket and the other child's basket, and then the other child will decide whether or not to accept your offer. When you are done dividing the tokens, please press the button at the bottom of the screen, and then hand the tablet back to me.

When they hand the tablet back. . .

Responder

While we wait for the other children to decide whether to accept or turn down your offer, we will play this game again and you will be paired with new children. And this time, the roles will be reversed, and you will be deciding whether or not to accept the offer you receive from another child.

Now, let me tell you about the other child.

The other child you are playing with is a [XX]-year-old [boy/girl] who comes from a family that is [richer/poorer] than your family.

The process is exactly like it was before. When I hand you the tablet, you will see their offer on the screen. If you would like to accept the offer, please click the green button. If you would like to turn down this offer, please click the red button. Remember, if you turn down this offer, both you and the other child will not get any tokens.

The other child has offered to give you [XX] tokens and kept [10 – XX] tokens for themselves.

Would you like to accept or reject this offer?

Hand the participant the tablet

If they accept the offer:

This means you will get to keep the [XX] tokens from the other child.

If they reject the offer:

Why have you decided to reject the offer? *Record answer*

Okay, now let's play that game one more time, this time with a different partner.

The other child you are playing with this time is a [XX]-year-old [boy/girl] who comes from a family that is [richer/poorer] than your family.

When I hand you the tablet, you will again see their offer on the screen. If you would like to accept the offer, please click the green button. If you would like to turn down this offer, please click the red button. Remember, if you turn down this offer, both you and the other child will not get any tokens.

The other child has offered to give you [XX] tokens and kept [10 – XX] tokens for themselves.

Would you like to accept or reject this offer?

Hand the participant the tablet

If they accept the offer:

This means you will get to keep the [XX] tokens from the other child.

If they reject the offer:

Why have you decided to reject the offer? *Record answer*

Outcomes

Your offers from earlier were sent to the other child and their decisions have come back.

The other child from the first game has decided to [accept/reject] your offer.

If Player 2 accepted:

This means you will get to keep your tokens.

If Player 2 rejected:

This means both you and the other child will not earn any tokens.

The other child from the second game has decided to [accept/reject] your offer.

If Player 2 accepted:

This means you will get to keep your tokens.

If Player 2 rejected:

This means both you and the other child will not earn any tokens.

If last game

And that was the last game, let's find out how many tokens you earned overall!

If not last game

That's the end of that game, thanks for playing!

3.4.3 Third Party Dictator Game

Now let's play the game where you split 10 tokens between two other children, but you can't keep any of the tokens for yourself. Do you remember how to play that game?

If no

Okay, here's an example.

[*FO: Place 10 blocks on the table. Push 7 blocks to one side of the table and 3 blocks to the other side.*]

If you wanted, you could give 7 tokens to Child 1, then Child 2 would get 3 tokens.

Okay, let's play!

Child 1 is a [XX]-year-old [boy/girl] who comes from a family that is richer than Child 2's family.

Child 2 is a [XX]-year-old [boy/girl] who comes from a family that is poorer than Child 1's family.

The process is exactly like it was before. When I hand you the tablet, you will see a screen with ten tokens, and you will have to divide them between the two baskets from the two children. When you are done dividing the tokens, please press the button at the bottom of the screen, and then hand the tablet back to me. And remember, I won't know how many tokens you have decided to give to each child.

Check that the participant has understood the instructions, including how to complete the task on the tablet. Then, hand the tablet to the participant.

When they hand the tablet back...

Okay, now let's play that game one more time, this time with two different children.

This time, Child 1 is a [XX]-year-old [boy/girl] who comes from a family that is poorer than Child 2's family.

And Child 2 is a [XX]-year-old [boy/girl] who comes from a family that is richer than Child 1's family.

When I hand you the tablet, you will again see a screen with ten tokens, and you will have to divide them between the two baskets. When you are done dividing the tokens, please press the button at the bottom of the screen, and then hand the tablet back to me.

When they hand the tablet back...

If last game

And that was the last game, let's find out how many tokens you earned overall!

If not last game

That's the end of that game, thanks for playing!

3.4.4 Joy of Destruction Game

Now let's play the game where you and another child both have 10 tokens, and you can decide to remove some of the other child's tokens. And you will have to pay 1 token for every 2 tokens you want to remove. Do you remember how to play that game?

If no

Okay, here's an example.

[*FO: Place 10 blocks on one side of the table and 10 blocks on the other side close to the participant*]

Imagine that you choose to remove 4 of the other child's tokens. This will cost you 2 tokens.

[*FO: remove 4 blocks from one of the piles and 2 blocks from the pile close to the participant*]

So, you will get 8 tokens and the other child will get 6 tokens.

Okay, let's play!

The other child you are playing with is a [XX]-year-old [boy/girl] who comes from a family that is [richer/poorer] than your family.

The process is exactly like it was before. When I hand you the tablet, you will see a screen with two boxes, one for you and one for the other child, with ten tokens in each. If you want to remove the other child's tokens, click on the tokens in your box. Each of your tokens you click on will remove two of the other child's tokens. When you are done with your decision, please press the button at the bottom of the screen, and then hand the tablet back to me. And remember, I won't know how many of the other child's tokens you decided to remove.

Check that the participant has understood the instructions, including how to complete the task on the tablet. Then, hand the tablet to the participant.

When they hand the tablet back...

Okay, now let's play that game one more time, this time with a different partner.

The other child you are playing with this time is a [XX]-year-old [boy/girl] who comes from a family that is [richer/poorer] than your family.

When I hand you the tablet, you will again see a screen with two boxes with ten tokens in each, and you can decide how many of the other child's tokens to remove. When you have made your decision, please press the button at the bottom of the screen, and then hand the tablet back to me.

When they hand the tablet back. . .

If last game

And that was the last game, let's find out how many tokens you earned overall!

If not last game

That's the end of that game, thanks for playing!