Does generosity generate generosity? An experimental study of reputation effects in a dictator game∗

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A B S T R A C T

Previous experimental literature on reputation studies its effects in environments where they are often confounded with strategic behavior. This paper explores how information about the paired subject’s previous action affects one’s own behavior in a non-strategic environment of a dictator game. The experiment consists of two treatments in which dictators can give money to the paired player: one where the recipient is a stranger and the other where the dictator has information on the recipient’s reputation. The data provide evidence that on average the dictators send more money to recipients with a reputation for being generous than to recipients with no reputation. The results contribute to our understanding of how impulses towards generous (or selfish) behavior might arise.

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2 Alexander (1987) states that indirect reciprocity occurs whenever rewards or punishments come from individuals or groups other than those directly involved in a social interaction involving investment or exploitation. He argues that indirect reciprocity works through reputation and status.

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1. Introduction

There are numerous situations in social and economic life where reputation can play an important role. Recently, one-shot interactions with an anonymous partner have become more frequent and have replaced the traditional repeated (often face-to-face) play with family members or members of the same community. Especially in one-shot interactions taking place in global markets or in large cities where people might wish to condition their actions on information they have about the other party. A reputation does not have to be observed directly, but could be conveyed by a third party as in many feedback mechanisms (e.g., eBay and other internet market places) or referral systems (e.g., doctor’s referral system, job referral, references in the school application process). As a part of the social capital, the reputation might have significant payoffs—it can affect trust and trustworthiness and thus have non-negligible implications for outcomes in bilateral and multilateral interactions. Moreover, the reputation of a person might cause people to behave towards him or her in a similar manner as he or she behaved to others, implying indirectly reciprocal behavior. However, many such interactions might involve the building or shaping of one’s own reputation, thus making it hard to distinguish whether observed behavior is a strategic action or a reaction to someone else’s reputation or both.

The current paper explores how information about the paired subject’s previous action affects one’s own behavior in a non-strategic environment of a dictator game. The experiment places dictators in two settings where they can give money to the paired player: in one treatment the paired player is a stranger and in the other treatment the dictator has information on the recipient’s reputation. Based on anecdotal and scientific observations that people tend to be ‘nicer’ to ‘nice’ people (Albert et al., 2007), the reputation should influence subjects’ actions in the current setup. Using the data from the experiment I test a hypothesis that dictators give more money to a person with reputation for being generous than to a stranger.

Interpretations of the data in this paper are based on defining reputation as the decision made by a dictator at one moment of the game. The reputation is not referred to as what people in general think or say about someone nor as strategically taken (series of) action(s) as in many non-cooperative game theoretic models. The focus of the current paper is on the effects of reputation in the
light of social preferences, more specifically on generating indirectly reciprocal behavior. The main advantage of using a specific action as a proxy for reputation is that it is easy to generate in the laboratory. Moreover, it also controls for what particular information the subjects respond to. From the methodological point of view this experiment is a conservative test for the effects of reputation because the information provided to the subjects is minimal. If evidence for its effects is found under such conditions, one can expect that the effects will be amplified if more information is provided.

Arguably, the distributional models of social preferences (e.g., Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000) could be considered a natural choice when predicting subjects’ behavior in the dictator game. However, neither of these models (like the model of self-regarding preferences) allow for the possibility that the predictions vary with different types of information available to the dictator and in particular with information about the recipient. Therefore, one ought to explore possible alternative motivations behind subject’s behavior and the mechanisms through which they operate. One such mechanism through which generosity can spill over is the already mentioned indirect reciprocity. Provided the conjecture about people being nicer to nice people is accurate, one can anticipate that in the experiment a reputation for generosity will be rewarded by generosity of another dictator. Such prediction is supported by Levine (1998) whose model can also be interpreted as a model of indirect reciprocity. In his setup the level of empathy towards another individual depends on the generosity of that person which could be inferred from that person’s behavior towards a stranger, i.e., from his or her reputation.

2. Literature review

The aspect of being observed by someone, thus implying strategic behavior of subjects, is explored by Seinen and Schram (2006). They experimentally study indirect reciprocity in the helping game by Nowak and Sigmund (1998) in which agents are rewarded for having a reputation of being generous and punished for having a reputation of being selfish. Seinen and Schram observe that indirect reciprocity is important because many donors base their actions on the image score of the recipient and on their own score as well if the game is played repeatedly. Engelmann and Fischbacher (forthcoming) introduce two types of players—with and without the image score and separate pure indirect reciprocity from incentives for strategic reputation building on the helping rate. They find that pure indirect reciprocity is relevant but also that the helping choice seems to be influenced by strategic considerations. In Engelmann and Fischbacher’s setting, strategic players do better than non-strategic ones and non-reciprocal players do better than reciprocal ones. Similar research has been conducted by Wedekind and Milinski (2000) who find that the cooperation arises when players know the number of times the receiver has been generous and selfish in the past and that they are likely to give to those who were generous. In accordance with this result Milinski et al. (2002) find that the need to preserve reputation maintains contributions to the public good at a high level. Bolton et al. (2005) also use a similar setup and observe that for low costs of giving, providing information about a partner’s immediate past action through an image score decreases cooperation. However, if the costs of giving are high, the cooperation increases. Interestingly, providing an additional layer of recursive information about a partner’s last partner’s behavior is even more effective in increasing cooperation. Recent field studies by Gneezy and List (2006), List (2006), Falk (2007), Regner and Barria (2009) and others, supported by ample evidence from laboratory experiments on gift exchange and direct reciprocity, show that generosity by the first mover is often being rewarded by the second mover. However, to the best of my knowledge, none of the above mentioned papers examines the arguably purest form of reputational effects in a non-strategic environment.

The non-strategic element of reputation in this paper distinguishes it from the vast theoretical literature on (strategic) reputation building where one type can pretend to be something he is not in order to maximize his payoffs. Moreover, there are only a few experimental studies that touch on the connections between reputation and fairness. Such games require a history of moves that have to be known to other players. Van Huyck et al. (1995, 2001) studied a trust game between a peasant who decides how much to plant and a dictator landowner who can confiscate the outcome or its part by taxation. They find little trust in the discrepancy when the landowners make their decisions after the peasants’ decisions when compared with a precommitment condition. The inclusion of reputation building with repeated matching in the game yields results closer to precommitment condition. The effects of reputation have already been reported from several other experimental settings: Bolton et al. (2004) compare trading in a market with online feedback (i.e., reputation) to a market without feedback, as well as to a market in which interaction takes the form of a repeated play and observe that the feedback mechanism induces an improvement in transaction efficiency. Dale et al. (2002) and Schmidt et al. (2003) find that the reputation enhances coordination. In Weimann (1994), Croson (1995) and many other public goods experiments, the contribution levels change after players learn about the contributions by all participants. The most closely related study to the current one in terms of the design is by Fehr and Fischbacher (2004) who also employ a dictator game to examine whether third party would punish a dictator for violating a distribution norm. Fehr and Fischbacher find that roughly 60% of bystanders do punish and that the punishment increases with the severity of the violation. Because the focus of their paper is on costly punishment by a third party, it does not offer a prediction how much would the bystander allocate if he were to become a dictator himself with the previous dictator taking a place of the recipient. Fehr and Fischbacher’s experiment does not also permit a conclusion as to whether the dictator would be rewarded by a bystander for being generous; an issue explored by the current experimental design.

Berg et al. (1995) also draw on the past behavior of subjects to investigate the effects of social history in an investment game. The social history is used to provide common information about the use of trust within a group of undergraduate subjects and is understood as a trust-encouraging factor to achieve a Pareto improvement when reciprocity is available. This approach can also be interpreted as examining the group reputation effect on the decision maker; however, Berg et al. focus on internalization of social norms and not on indirect reciprocity. In another related paper, Eckel and Grossman (1996) find that history matters in other circumstances as well. Instead of having an anonymous recipient as in most dictator games, they inform the subjects that the money will be contributed to the American Red Cross. This is a significant treatment as the amount of money donated by subjects increases. Grossman and Eckel explain that the American Red Cross has a long history of providing benefits and thus invites reciprocal behavior.

The rest of the paper proceeds as follows. Section 3 lays out the experimental design and procedures. Section 4 details the results and Section 5 concludes. The experimental instructions are presented in Appendix A.

3. Experimental design

The experimental design includes a dictator game identifying the player’s type and an identical dictator game with known reputation.
tion of the paired player.\textsuperscript{3}\textsuperscript{4} The use of a dictator game is important in order to rule out possible within-game strategic interdependence of the subject’s monetary payoff on both one’s own action and others’ actions as well. This feature is critical to the design because the subjects can make decisions based on their moral rules, values, and beliefs without having to consider possible reactions of the paired player. The comparison of a subjects’ behavior in a treatment where they play with a stranger, and in the reputation treatment where they have information on the other player, highlights the reputation effects. The modification of the dictator game used in the experiment was introduced by Cox (2004) in a triadic experimental design with dictator controls to identify alternative motivations behind the actions of the players in the investment game (Berg et al., 1995).

3.1. Stranger treatment

In the stranger treatment subjects played the following version of a dictator game: At the beginning of the experiment, the dictator was endowed with $10 and the recipient with $0. The dictator could send any whole dollar amount between 1 and 10 to the paired recipient or do nothing and keep both endowments unchanged. Any amount sent was tripled by the experimenter. The recipient had no decision to make, thus the final allocation was entirely decided by the dictator. Given the action set, the self-regarding subjects would keep the whole endowment, i.e., send zero.

3.2. Reputation treatment

In the reputation treatment subjects again played the dictator game described above with the only difference that the dictator was acquainted with the reputation of the currently paired recipient. The reputation was represented by an action taken by the recipient in the stranger treatment where he/she served as a dictator himself/herself. It is important to note that this action was taken towards a third person and not towards the current dictator. The prediction for self-regarding preferences implies that the dictator sends zero to the recipient, irrespective of the recipient’s reputation.

3.3. Procedures

Four experimental sessions were conducted in the Economic Science Laboratory at the University of Arizona under double blind payoff protocol in which a subject’s decisions are never linked to the subject’s identity.\textsuperscript{5} Seventy-two undergraduate students served as subjects in the experiment. In each experimental session one person was randomly chosen to be the monitor and the rest were randomly divided into two groups X and Y. Group X subjects were seated in the front row of the laboratory in cubicles.

Group Y subjects were seated in identical cubicles at the back of the room. The monitor was in charge of distributing and collecting envelopes with the decision forms inside. In the general instructions the subjects were told they would participate in a multiple task experiment without specifying the nature of each task up front (i.e., the dictators in the Stranger treatment were not explicitly told that their choices would be revealed to the dictators in the Reputation treatment). They were also informed about the random matching procedures for each task to create an environment where one-shot games are played in an ongoing social interaction. To control for wealth and portfolio effects, the subjects were told that a single task would be selected randomly for payoffs at the end of the experiment. Once the experiment started, a new set of individual instructions were provided for each subject upon completion of each task.

In the stranger treatment a half of subjects were screened to obtain reputation information which was later provided to their paired dictators in the reputation treatment.\textsuperscript{6} The experiment was run across-subjects and involved a role reversal executed in the following way: In the first task, called Blue, group X people played the dictator game with a stranger from group Y. In the second task, called Yellow, people from group Y acted as dictators towards recipients with a reputation from group X. Because each group only made one decision, the design completely eliminated any possible order effects.\textsuperscript{7}

The allocations made by dictators were revealed to their respective recipients after the completion of both tasks to avoid informational contamination (Ben-Ner et al., 2004). At the end of the actual experiment the subjects were asked to fill out a questionnaire about demographics, understanding of tasks, and decision rules for which they were given $5 to ensure that some subjects would not walk out with zero monetary payoffs.

4. Subjects’ behavior in the experiment

Altogether 68 dictators participated in the experiment. 34 in the stranger treatment and 34 in the reputation treatment. Their behavior is depicted in Fig. 1. The amounts sent by dictators in the stranger treatment are represented by the solid black bar for each subject pair. The subjects are portrayed as they were paired in the reputation treatment. The patterned bar represents the amounts sent by dictators in the reputation treatment after having observed choices of their paired recipients, i.e., the adjacent solid black bar. In the stranger treatment the dictators sent on average 1.71 dollars with the median of $2. Seven out of the 34 (20.6%) participants sent zero. The remaining 27 subjects chose to send money to their

\textsuperscript{3} See Camerer (2003) for a survey on dictator games.

\textsuperscript{4} As explained below, all subjects participate in two tasks but only in one of them they make a decision as dictators; in the other task they participate as recipients. The multiplicity of tasks creates a rich social context studied in Cox (2009). Cox states that a future play which does not involve a repeated game with the same person introduces into the experiment a feature of everyday life in large cities where much social interaction involves play of one shot games with future interactions but without repeated games with the same individuals. He shows that the variation of social context indeed affects trust and altruism of the experimental subjects. Cox conjectures that one of the possible reasons why people might behave more generously in an environment characterized by a rich social context is that they might anticipate that generosity can be contagious. While the current experiment does not explore whether this is what the subjects really think, it provides a direct test of generosity being contagious via observing someone else’s reputation for being generous.

\textsuperscript{5} For a discussion on double blind payoff protocol see Hoffman et al. (1996).

\textsuperscript{6} Other studies use a dictator game as a screen as well. See, for example, Cain (1998) and Charness (2000).

\textsuperscript{7} However, one has to acknowledge that the dictator in the stranger treatment (Blue task) made their decisions at a different time than the dictators in the reputation treatment (Yellow task).
Table 1
Amounts sent by the dictators and expected payoffs.

<table>
<thead>
<tr>
<th>Strnger treatment</th>
<th>Reputation treatment</th>
<th>Expected payoff to a dictator from the stranger treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0: 7$ dictators</td>
<td>$0: 2$ (dictators)</td>
<td>$6.07$</td>
</tr>
<tr>
<td>$1: 7$ dictators</td>
<td>$0: 2$</td>
<td>$5.50$</td>
</tr>
<tr>
<td>$2: 13$ dictators</td>
<td>$0: 1$</td>
<td>$7.42$</td>
</tr>
<tr>
<td>$3: 4$ dictators</td>
<td>$0: 1$</td>
<td>$5.88$</td>
</tr>
<tr>
<td>$4: 2$ dictators</td>
<td>$0: 1$</td>
<td>$5.75$</td>
</tr>
<tr>
<td>$5: 1$ dictator</td>
<td>$0: 1$</td>
<td>$4.00$</td>
</tr>
</tbody>
</table>

Recipient: Seven subjects sent $1$, thirteen sent $2$, four sent $3$, two sent $4$, and one subject sent $5$. The dictators in the reputation treatment responded to the reputation information provided to them by sending on average 3.03 dollars with the median of $3$. Interestingly, only two out of the seven dictators who observed a reputation of zero also sent zero to the paired recipients. The other five sent on average $2.14$. Dictators who observed a positive reputation sent on average $3.26$. The full distribution of dictators’ choices conditional on the observed reputation of the paired recipient is presented in the first two columns of Table 1.

Parametric and nonparametric statistical tests in Table 2 analyze the effect of reputation for generosity. All of them report a statistically significant difference between the two treatments ($p < 0.01$). The correlation coefficient between amounts sent by dictators in the reputation treatment and the choices of their paired recipients that they observed prior to making a decision is equal to 0.36. The Spearman’s rank correlation test rejects the null that choices in the stranger and reputation treatments are independent. This result is robust to looking at the data with a positive reputation only (correlation coefficient = 0.35). Hence, the data from the experiment provide evidence for the effect of reputation for generosity on the dictators’ behavior.

The bottom part of Table 2 reports tobit estimates of the parameters of the following relation between the AmountSent by a dictator to a recipient with reputation for generosity and the recipient’s Reputation:

$$\text{AmountSent}_t = \alpha + \beta \cdot \text{Reputation}_t + \epsilon_t$$  \hspace{1cm} (1)

with the bounds for the tobit estimation imposed by the experimental design:

$$\text{Choice}_t \in [0, 10]$$  \hspace{1cm} (2)

The estimated effect of the recipient’s reputation on the amount sent by the dictator, $\hat{\beta}$, is positive (0.89) and significant ($p = 0.025$). Hence, the tobit analysis supports the conclusion that the dictators’ generosity increased with the reputation of paired recipients and thus provides evidence for the argument presented in Cox (2009) that virtue can be contagious.

A closer look at the experimental data provides a couple of relevant findings. First, the dictator actually earns the most in expectation when he gives $2 to a stranger. That is, in this case his or her generosity is rewarded on average by $6.83 (calculated ex post) in the reputation treatment when he or she acts as the recipient. This reward more than compensates the dictator for the ex post

### Table 2
Tests for reputation effects.

<table>
<thead>
<tr>
<th>Data category</th>
<th>Mean amount sent</th>
<th>Median amount sent</th>
<th>Means test</th>
<th>Mann–Whitney test</th>
<th>Median test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parametric and nonparametric tests for reputation effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tr. Stranger</td>
<td>$1.171$ (34)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tr. Reputation</td>
<td>$2.39$ (34)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tr. Stranger vs. Tr. Reputation</td>
<td>$-2.85$ (0.003)</td>
<td>$-2.70$ (0.003)</td>
<td>10.38 (0.001)</td>
<td>(0.001) b</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>$\hat{\alpha}$</th>
<th>$\hat{\beta}$</th>
<th>L.R. test</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1.33$ (1.09)</td>
<td>$0.89$ (0.025)</td>
<td>5.37 (0.020)</td>
</tr>
</tbody>
</table>

Standard deviations in brackets. Number of subjects in braces. $p$-Values in parentheses.

a One-tail test.

b Fisher’s exact test.
This observation poses a question about alternative motivations of behavior to indirect reciprocity. I discuss some of them in the next section.

5. Discussion

This paper reports on a laboratory experiment aiming at reputation effects in an environment exhibiting salient fairness considerations. It contributes to the literature on generosity and dictator giving by studying how information about other individual influences dictator’s decision in a non-strategic setting. It is an important step in understanding how impulses toward generous (or selfish) behavior might arise. The experiment was designed to pick up differences in behavior of dictators towards strangers and individuals with an established reputation for being generous. I find that providing information on the previous action by the recipient caused the dictators to send significantly larger amounts to a generous recipient than to a stranger. This result points to the conclusion that virtue can be contagious not only because being generous might be in the best interest of the dictator. Such finding has an important implication for economic modeling of interpersonal relations within social networks—a behavioral model situated in an environment with ongoing social interaction should incorporate the spillover effect of one’s action on the rest of the population. This is particularly relevant when the decision maker is aware of the possibly long lasting consequence of his or her action on social norms.

After making an observation that not only the reputation for generosity but also the reputation for being selfish generated more generosity by the new dictators, it is essential to ask: What motivated the new dictators to give more than the first ones? Were they trying to reward the generous behavior or was their motivation different? The reputation does not only provide information about past actions of a subject, but it also carries two additional features. First, it provides information about the paired recipient, therefore identifying him or her. Small and Loewenstein (2003), Yamamori et al. (2008), and several other studies show that identification itself can result in a more generous behavior. Secondly, the reputation can signal beliefs that the general population holds in consideration of what type of behavior is socially appropriate. If the reputation is regarded as socially relevant information, it can influence the dictators’ beliefs about what is considered appropriate and change their behavior (Cason and Mui, 1998). The experiment presented in Servátka (2009) separates these three motivations and concludes that the reputation indeed triggers indirectly reciprocal behavior and has a stronger effect than social influence and identification.

Nevertheless, the presented laboratory results are to be interpreted with caution as the results of a dictator game are known needed. This is particularly relevant when the decision maker is aware of the possibly long lasting consequence of his or her action on social norms.

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Nevertheless, the presented laboratory results are to be interpreted with caution as the results of a dictator game are known to be very sensitive to different procedures and setups. Moreover, they may vary in different contextual and strategic environments in which the interaction between transacting parties is embedded. Also, the nature and the extent of scrutiny by others as well as self-selection of individuals making the decisions might influence the observed behavior in other settings (Levitt and List, 2007). Finally, it is important to note that reputation as presented in this paper is just a proxy for what it represents in the outside-the-lab world. Therefore, more research specifically aimed at connecting the experimental results from the current experiment and other similar games with the data in the field is needed.

Appendix A.

A.1. Instructions

A.1.1. General Instructions

No talking allowed: Now that the experiment has begun, we ask that you do not talk or communicate any longer with each other. Because we will not be available to assist you, it will not be possible for you to ask questions. In case there is still something that you do not understand, you are kindly requested to read the instructions again.

Monitors and two groups: A monitor has been selected randomly from among those of you who came here today. The rest of you have been divided randomly into two groups, called Group X and Group Y. Group X people are seated in the front row A. Group Y people are asked to sit at the back of the room (row D).

Multiple tasks: You will be asked to participate in multiple tasks during the experiment. The instructions for each task will be given to you after finishing the previous one. The end of the experiment will be announced to you after completing certain number of tasks. Anonymity: Each person in Group X will be randomly matched with a person in Group Y. No one will learn the identity of the person he/she is matched with. In each task a person in Group X will be matched to a different person in Group Y. There is no chance of being matched with the same person more than once during the entire experiment.

Money payoffs: The information about final account balances in each task will be recorded by the experimenters. At the end of the experiment a die will be rolled in front of you to decide the task for which you will be paid in cash. The remaining balance in your dollar account from the randomly selected task will be paid to you in cash at the rate of 1 U.S. dollar per 1 experimental dollar.

Complete privacy: This experiment is structured so that no one, neither the experimenters nor the other subjects nor anyone else will ever know the personal decision of anyone in the experiment. This is accomplished by the following procedure. You will collect your money payoff contained in a sealed envelope, from a mailbox that only you can open (with your key). Your privacy is guaranteed because neither your name nor your student ID number will appear on any form that records your decisions in this experiment. The only identifying mark in all records will be your seat number and the number engraved on your key which is known only by you. However, although the experimenters will not know your identity, they have a way to map your decisions into your own payoff correctly. At the end of the experiment, you will walk one by one to the waiting room where the mailboxes are to collect your money payoff envelope. The key and mailbox are labeled with the same number. But you will be the only person in possession of that key and the only one who knows your key number. When collecting the envelope from your mailbox, you are kindly requested not to open it immediately. You should wait until you leave the building. After collecting the envelope, you must return your key by throwing it in a key-return box next to the waiting room door.

Your private label: At the end of the experiment you will be given a key in a sealed envelope. There will be a 5-digit number engraved on your key. The entered number will be used to select the box that your key can open, which will contain a sealed envelope with your earnings inside.

The role of the monitor: A monitor was randomly chosen from among the students who volunteered for today’s experiment. The monitor will be in charge of distributing and collecting the envelopes with decision form sheets inside little boxes that con-
tain the envelopes containing mailbox keys. The monitor will also be asked to watch and make sure that the experimenters actually follow the procedures that have been explained here.

**Decision forms:** Prior to each task you will be given a decision form on a colored paper. After completing the task, please put the decision form in the enclosed envelope, seal it and give it to the monitor. If you did not get a decision form, you are not making a decision in that task. In such case, please return the empty envelope.

Please, read the instructions for each task very carefully.

**A.1.2. Blue task instructions**

**Initial account balances:** Each person in Group Y is credited with 0 (zero) experimental dollars. Each person in Group X is credited with 10 (ten) experimental dollars. As explained below, each Group X person will have a decision to make about what to do with his/her Blue Task endowment.

**Decisions:** Each Group X person has a single decision to make. He/she can decide to change or not the dollar account balances of both people. The Group Y person has no decision to make. Hence, after the Group X person makes his/her decision, the task ends and the account balance of both persons for this task cannot be changed any more.

The **Group X decision task:** Every dollar given by a person in Group X to a person in Group Y will be tripled by the experimenters. If Person X decides to increase the Y Person's account balance by $3 then the X person's account balance decreases by $1. The Group X person cannot increase the other person's account balance by more than $30. The following table shows how this works.

<table>
<thead>
<tr>
<th>Initial account balances</th>
<th>Decision forms</th>
<th>And the Group Y total payoff is</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$0</td>
<td>0</td>
</tr>
<tr>
<td>$1</td>
<td>$3*1</td>
<td>3</td>
</tr>
<tr>
<td>$2</td>
<td>$3*2</td>
<td>6</td>
</tr>
<tr>
<td>$3</td>
<td>$3*3</td>
<td>9</td>
</tr>
<tr>
<td>$4</td>
<td>$3*4</td>
<td>12</td>
</tr>
<tr>
<td>$5</td>
<td>$3*5</td>
<td>15</td>
</tr>
<tr>
<td>$6</td>
<td>$3*6</td>
<td>18</td>
</tr>
<tr>
<td>$7</td>
<td>$3*7</td>
<td>21</td>
</tr>
<tr>
<td>$8</td>
<td>$3*8</td>
<td>24</td>
</tr>
<tr>
<td>$9</td>
<td>$3*9</td>
<td>27</td>
</tr>
<tr>
<td>$10</td>
<td>$3*10</td>
<td>30</td>
</tr>
</tbody>
</table>

**Group X has no decision to make:** The Group Y people do not have any decision to make in Blue Task. This means that they will keep all of the tripled amount sent to them by individuals in Group X.

**Examples**

- If Person X decides to change his/her account balance by -6, Person Y's account changes by +18. The payoffs for this task will yield 10 dollars for Person X and 0 dollars for Person Y.
- If Person X decides to change his/her account balance by 0, Person Y's account decreases by 0. The payoffs for this task will yield 10 dollars for Person X and 0 dollars for Person Y.

**A.1.3. Blue task decision form for a person from group X**

My initial account balance is $10. The paired person from Group Y initial account balance is $0. Each dollar I give to the paired person is multiplied by 3 by the experimenter.

My decision is to give the following amount to the paired person.

(please circle one.)

$0 $1 $2 $3 $4 $5 $6 $7 $8 $9 $10

**A.1.4. Yellow task instructions**

**Initial account balances**

Each person in Group X is credited with 0 (zero) experimental dollars. Each person in Group Y is credited with 10 (ten) experimental dollars. As explained below, each Group Y person will have a decision to make about what to do with her/his Yellow Task endowment.

**Decisions:** Each Group Y person has a single decision to make. He/she can decide to change or not the dollar account balances of both people. The Group X person has no decision to make. Hence, after the Group Y person makes his/her decision, the task ends and the account balance of both persons for this task cannot be changed any more.

The **Group Y decision task:** Every dollar given by a person in Group Y to a person in Group X will be tripled by the experimenters. If Person Y decides to increase the X Person's account balance by $3 then the Y person's account balance decreases by $1. The Group Y person cannot increase the other person's account balance by more than $30. The following table shows how this works.

<table>
<thead>
<tr>
<th>If the Group Y person gives</th>
<th>The experimenters triple the amount</th>
<th>And the Group X total payoff is</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$3*0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>$3*1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>$3*2</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>$3*3</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>$3*4</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>$3*5</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>$3*6</td>
<td>18</td>
</tr>
<tr>
<td>7</td>
<td>$3*7</td>
<td>21</td>
</tr>
<tr>
<td>8</td>
<td>$3*8</td>
<td>24</td>
</tr>
<tr>
<td>9</td>
<td>$3*9</td>
<td>27</td>
</tr>
<tr>
<td>10</td>
<td>$3*10</td>
<td>30</td>
</tr>
</tbody>
</table>

**Group X has no decision to make:** The Group X people do not have any decision to make in Yellow Task. This means that they will keep all of the tripled amount sent to them by individuals in Group Y.

**Examples**

- If Person Y decides to change his/her account balance by 0, person X’s account does not change. The payoffs for this task will yield 10 dollars for Person Y and 0 dollars for Person X.
- If Person Y decides to change his/her account balance by -6, person X’s account changes by +18. The payoffs for this task will yield 4 dollars for Person Y and 18 dollars for Person X.

**A.1.5. Yellow task decision form for a person from Group Y**

**Information:** You are matched with a different person than in the previous task. The Group X person you are paired with for this task has previously made the following decision:

He/she changed his/her own account balance by ………… , therefore, changing the account balance of the paired person by …………

**Decision:** My initial account balance is $10. The paired person from Group X initial account balance is $0. Each dollar I give to the paired person is multiplied by 3 by the experimenter.

My decision is to give the following amount to the paired person.

(please circle one.)

$0 $1 $2 $3 $4 $5 $6 $7 $8 $9 $10

**References**


