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Does Generosity Generate Generosity? An Experimental Study of Reputation Effects in a Dictator Game

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Does Generosity Generate Generosity? An Experimental Study of Reputation Effects in a Dictator Game

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ABSTRACT.   This paper explores how information about paired subject's previous action affects one's own behavior in a dictator game. The first experiment puts dictators in two environments where they can either give money to the paired player or take money away from them: one where the recipient is a stranger and the other where the dictator has information on the recipient's reputation. Contrary to anecdotal evidence, the statistical tests show that the dictator's behavior toward a stranger is not statistically significantly different from their behavior toward an individual with an established reputation. The findings arise because a high proportion of dictators acted purely in their own self interest in both treatments. In the second experiment the dictators' choices were restricted to only generous actions. In such environment the dictators sent more money on average to recipients with a reputation for being generous than to recipients without a reputation.

(Keywords:)

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1   Introduction

There are numerous situations in social and economic life where reputation can play an important role. People might often wish to condition their actions on information they have about the other party. The 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.

This paper studies the influence of reputation on subject's behavior in a dictator game. In particular, I am interested in answering a question whether information about generosity (or selfishness) of an individual has an impact on the level of generosity of others towards this person. The first experiment places dictators in two environments where they can either give money to the paired player or take money away from them: in one treatment the paired player is a stranger and in the other treatment the dictator has information on the paired player's reputation. Contrary to anecdotal evidence, the statistical tests show that the dictators' behavior towards a stranger is not statistically significantly different from their behavior towards an individual with an established reputation. The findings arise because a high proportion of dictators acted purely in their own self interest in both treatments. In the second experiment the dictators' choices were restricted to only generous actions. In such environment the dictators sent more money on average to recipients with a reputation for being generous than to recipients without a reputation. The dictator game was chosen as a vehicle for investigating the effects of reputation in their possibly simplest form without strategic considerations. In addition, the subjects' decisions in the experiments were stripped down from any type of framing.

Interpretations of the data in this paper are be 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.

The effects of reputation have already been reported from several experimental settings. For example, Dale et al. (1999) and Schmidt et al. (1999) 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 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. In their experiment the dictator decides on an allocation of 0, 10 , 20, 30, 40, or 50 points out of the 100 points (= 30 CHF) endowment between herself and an anonymous and randomly paired recipient. For each pair, consisting of a dictator and a recipient, there is a bystander endowed with 50 points who observes the dictator's transfer to the recipient and can punish him after the allocation is made. Every point spent by the bystander on punishment reduces the dictator's payoff by 3 points. Fehr and Fischbacher find that roughly 60% of bystanders punish the dictators for violation of the norm 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. Falk 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.[1]

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[1]There are three other distinguishing features between Fehr and Fischbacher's third party punishment and the experiments presented in this paper: First, I do not use a punishment stage where the punishment is costly to the punisher. Subjects play another round of a dictator game instead. Second, Falk and Fischbacher make the whole structure of the game a common knowledge, i.e., all involved players know that there is a punishment stage, where as in this study the nature of future tasks remains unknown. Lastly, my

Berg et al. (1995) 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 paper, Grossman and Eckel (1996) find that history matters in other circumstances as well. Instead of having an anonymous recipient as in most of the related 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 the subjects increases. Grossman and Eckel explain that the American Red Cross has a long history of providing benefits and thus invites (directly) reciprocal behavior.

The non-strategic element of reputation in this papers distinguishes it from the vast theoretical literature on (strategic) reputation building when one type is pretending 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 has to be known to other players. Van Huyck, Battalio, and Walters (1995, 2001) studied a trust game between a peasant who must decide how much to plant and a dictator landowner who can confiscate the outcome or its part by taxation. They find very little trust in the discretion condition when the dictators 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 aspect of being observed by someone, thus implying strategic behavior of subjects, is explored by Seinen and Schram (2001). They experimentally study the helping game of Nowak and Sigmund (1998) and 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. Engelmann and Fischbacher (2002) 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

dictators are not explicitly told that their choices will be revealed to another subject.

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by strategic considerations. In their setting the strategic players do better than non-strategic ones and non-reciprocal players do better than reciprocal players. However, none of these above mentioned studies answers a question whether people react to reputation in a non-strategic environment.

The remainder of the paper proceeds as follows. The next section presents the first experiment on reputation employing a dictator game with an option to take. Section 3 describes the second experiment studying the reputation effects in a dictator game where only generous actions are feasible. The last section concludes.

2   Experiment 1: Reputation in a Dictator Game with an Option to Take

The experimental design includes a dictator game identifying the player's type and an identical dictator game with known reputation of the paired player. 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 first experiment was introduced by Cox et al. (forthcoming) in a triadic experimental design with dictator controls to identify alternative motivations behind the actions of the players in the moonlighting game (Abbink et al. 2000).

2.1   Stranger Treatment

In the stranger treatment subjects played the following version of a dictator game: At the beginning of the experiment, both the dictator and the recipient were endowed with $10. The dictator could send any whole dollar amount between 1 and 10 to the paired recipient, take any whole dollar amount between 1 and 5 from him, or do nothing and keep both endowments unchanged. Any amount sent was tripled by the experimenter; any amount

taken was not transformed. The recipient had no decision to make, thus the final allocation was entirely decided by the dictator.

2.2   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 the action taken by the recipient in the stranger treatment where he served as dictator himself. 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 takes the maximum amount of \$5 from the recipient, irrespective of whether the dictator knows the recipient's reputation or not and irrespective of what the reputation is.

2.3   Procedures

All sessions described in this paper 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.[2] Twenty eight undergraduate students served as subjects in the first experiment. In each session one person was randomly chosen to be the monitor and the rest were randomly divided into two groups X and Y.[3] 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 the envelopes with decision forms. 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. 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.

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[2]For a discussion on double blind payoff protocol see Hoffman et al. (1996).

[3]The monitors did not make any decisions, therefore are not included in the number of participating subjects.

The first experiment addresses the research question in a within-subjects design. In the stranger treatment the subjects were screened to obtain the reputation information which was later provided to their paired dictators in the reputation treatment.[45] Both treatments consisted of two tasks, called Blue and Green in the stranger treatment and Yellow and Orange in the reputation treatment. The tasks within the same treatment differed only in the assignment of roles. In Blue (stranger) and Orange (reputation) tasks, the subjects from group X made decisions as dictators and subjects from group Y took the role of recipients. In Green and Yellow tasks the roles were reversed.[6] The allocations made by dictators were revealed to their respective recipients after the completion of all tasks to avoid informational contamination. At the end of the actual experiment the subjects were asked to fill out a questionnaire about demographics, understanding of tasks, and decision rules.

2.4   Hypotheses and Heuristic Predictions

Based on anecdotal and scientific observations that people tend to be 'nicer' to 'nice' people (Albert et al., 2007) and 'not as nice' to selfish ones, the reputation might influence subjects' actions in the experiment. Fundamentally, I am interested in answering the question: "Do dictators' choices under a zero information structure in the stranger treatment differ from the choices in the reputation treatment?" If yes, then it is important to ask: What are the qualitative implications of such changes? In which direction does the behavior change depending on the reputation type of the recipient? To answer these questions, I first examine whether there are any differences in the amounts sent under the two informational structures. The null hypothesis is:

Hypothesis 1: The dictator sends the same amount to a stranger as to a

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[4]Other studies use a dictator game as a screen as well. See, for example, Cain [1998] and Charness [2000].

[5]The sequence in which the treatments follow poses a question of order effects. The current design is a compromise between the ability to observe the behavior of the same individuals in two different conditions and a possibility of a confounding order effect. The second experiment presented in this paper drops the within subject design and thus eliminates this problem. Such a change comes at a cost of not being able to observe the possible change of behavior directly.

[6]A similar procedure was used in a sequential dictator game by Cason and Mui (1998).

recipient with known reputation.

However, testing the null might not give much insight about the reputation because the effects of being paired with a taker and being paired with a giver might be confounded in the data. Such test does not detect in what direction the behavior changes after learning the specific reputation of a paired player. The existing literature provides evidence that a non-trivial fraction of dictators send positive amounts to recipients, anywhere from 10% to 50% on average.[7] According to Cox (2007), the amounts sent could potentially be magnified by the presence of an ongoing interaction. However, as Bardsley (2005), List (2007), and Cox (forthcoming) observe, the behavior of dictators changes dramatically when their action set includes an option to take money from the recipient. Thus, I expect the current design to create reputations of being a *giver,* if the subject sends a positive amount of money in the stranger treatment, and of being a *taker,* if he or she sends a non-positive amount.[8] Based on these two categories I form the following testable hypotheses:

Hypothesis 2: The dictator sends more to a giver than to a stranger.

Hypothesis 3: The dictator sends less to a taker than to a stranger.

2.5   Subjects' Behavior in Experiment 1

The choices of subjects who participated in the first experiment are depicted in Figure 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. The mean of amounts sent or taken by dictators in the stranger treatment was equal to -3.88 dollars and in the reputation treatment equal

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[7]See Camerer (2003) for a survey.

[8]The classification of subjects who send zero as takers is arbitrary, because such action could be perceived as 'nice' if the reference point is not taking money from the paired player or 'not nice' when the reference point is creating social surplus and giving money. I perform the statistical analysis both ways and do not find qualitatively different results for the effects of reputation.

to -3.50 dollars (see Table 1 for a summary of all relevant samples and sub-samples). The Means and Wilcoxon tests for paired data, presented in the seventh row of Table 1, report that this difference is statistically insignificant (p=0.63 and 0.89, respectively) and Hypothesis 1 cannot be rejected. In the stranger treatment, 19 out of 26 subjects took the maximum of five dollars from their paired players, 5 took amounts between two and four dollars, and 2 subjects gave exactly five dollars each.[9] In the reputation treatment, the 2 subjects who were paired with them responded to such conditional reputation information by sending positive amounts of three and five dollars, respectively. Because there are only two data points in this category, further evidence had to be gathered. An experiment producing reputations for generosity is described in the next section.

The remaining 24 subjects were classified as takers. In the reputation treatment, 21 out of 24 subjects (87.5%) who were faced with takers took the maximum of five dollars, 1 subject sent zero, 1 sent one dollar and 1 sent five. On average, the dictators paired with takers took 4.13 dollars from them. The comparison of means supports the prediction that the dictator sends more (takes less) to a stranger than to a taker. However, the Means and Mann-Whitney tests reported in the last row of Table 1 do not detect a statistically significant difference between the samples (p=0.37 and 0.14, respectively) and Hypothesis 3 is rejected.

The conclusion that a reputation of being a taker does not spark a higher degree of self-regarding behavior towards this person could seem to be in line with Cox et al. (forthcoming) who find that the direct negative reciprocity in a similar setting of a moonlighting game is not significant.[10] Yet, the current result is most likely driven by the lower bound of the action set that was imposed by the experimental design and the high number of self-regarding choices present in the data. The behavior of self-regarding dictators is further explored in the next subsection.

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[9]Two data points had to be excluded from the statistical analysis, one because of an error when recording the reputation information on the subject's decision form and the other one because the subject marked two answers.

[10]Note, that in the current design the 'not nice' behavior towards the recipient is not costly to the dictator in terms of monetary payoffs. Thus, taking money from the recipient cannot be interpreted as an indirect negative reciprocity, given the way it is typically referred to the literature.

Table 1. Reputation Results from Experiment 1

Data Category	Mean Amount Sent	Means Test	Wilcoxon Test	Mann-Whitney Test
Tr. Stranger	-3.88 [2.73] {26}			
Givers in Tr. Stranger	5.00 [0] {2}			
Takers in Tr. Stranger	-4.63 [0.82] {24}			
Tr. Reputation	-3.50 [3.26] {26}			
Paired with Givers in Tr. Reputation	4.00 [1.41] {2}			
Paired with Takers in Tr. Reputation	-4.13 [2.49] {24}			
Tr. Stranger vs. Tr. Reputation		-0.49 (.627)**	.14 (.892)**	.41 (.682)
Tr. Stranger vs. Paired with Takers		.33 (.373)*		1.10 (.136)*

Standard deviations in brackets.
Number of subjects in braces.
p-values in parentheses.
* one-tail test.
** paired test.

2.6 Do Self-Regarding Players Pay Attention to Reputation?

The data from the first experiment involve a significant number of self-regarding choices. Table 2 summarizes the frequencies of change in choices between stranger and reputation treatments. Cason and Mui's (1998) find that subjects with a more self-regarding first choice are less likely to change behavior between the treatments. Their finding receives considerable support in the present data as well. In particular, 17 out of 19 dictators (89.5%)

who took five dollars when paired with stranger did not change their decisions after being rematched with another recipient and learning about his or her reputation. This result is highly statistically significant (p-value $= 0.000$ Fisher's exact one-tail test). In contrast, all 7 dictators with a choice other than taking five dollars in the stranger treatment change their decision when confronted with the past action of their new recipient.

There are several possible explanations why the dictators, whose first choice is self-regarding, do not change their decision after they learn about the current recipient's reputation. First, and perhaps the most obvious one, is that the choice represents dictators' self-regarding preferences and for these subjects the reputation does not matter. Second, the pattern could be caused by subjects' beliefs about the rest of the population which they would correctly estimate to be highly self-regarding. A self-regarding choice then might be a perceived as a best response because social norms cannot be maintained. Third, the subjects could be minimizing the cognitive effort by ignoring the reputation information and sticking to the first decision. It could also represent their preference for fairness along the lines "I take now, you take next," observed also in other experimental settings (Cox and Walker (1998), Chan et al. (2003)). While all these (and perhaps some other as well) are feasible explanations of subjects' behavior, I do not offer a conclusive answer here. A more appropriate design aimed at the subjects' motivation and perhaps other psychological and physiological forces is needed.

Table 2. Frequency of Changes between Stranger and Reputation Treatments, by First Choice

	Change between Stranger and Reputation	No Change between Stranger and Reputation	Total
First choice = Take $5	2	17	19
First choice ≠ Take $5	7	0	7
Total	9	17	26

1-sided Fisher's exact test p-value = 0.000.

3 Experiment 2: Reputation for Generosity

The purpose of the second experiment was to produce reputations for generosity, i.e., to produce dictators who are givers when paired with a stranger. The design of the stranger and reputation treatments in experiment 2 differs from their experiment 1's analogues in the following respects: Only the dictator was endowed with $10, the recipient had $0. The dictator's action set was truncated to allow for only nonnegative amounts to be sent.[11] Given the new action set, the self-regarding subjects would keep the whole endowment, i.e., send zero. Also, the show-up fees of $5 were offered for completing the questionnaire after the experiment to ensure that some subjects would not walk out with a zero monetary payoff. The subjects in experiment 1 did not receive any show up fees, but were guaranteed at least $5 by the experimental design.

The second experiment was run across-subjects and thus involved only a single role reversal. 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, this design completely eliminated any possible order effects.

In the second experiment I test the following hypothesis:

Hypothesis 4: The dictator sends more to a generous person than to a stranger.

Provided that the conjectures about people being nicer to nice people are correct, one can anticipate a spillover effect in terms of generosity - a kindness will be rewarded by kindness even in conditions of absolute anonymity. However, the extent to which this will be observable in the data depends on the proportion of subjects responding to reputation.

3.1 Subjects' Behavior in Experiment 2

Altogether 68 dictators participated in the second experiment, 34 in the stranger treatment and 34 in the reputation one. Their behavior is depicted in Figure 2. In the stranger treatment the dictators sent on average 1.71 dollars. Seven out of the 34 (20.6%) participants sent zero. The remaining

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[11]A similar dictator game was used by Cox (2004).

27 subjects chose to send money to their 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 (in parentheses) as follows: ($0) two dictators also sent zero to selfish recipients, three sent $2, one sent $4, and one sent $5; ($1) two sent zero, one sent $1, three sent $3, and one sent $4; ($2) one sent zero, one sent $2, five sent $3, three sent $5, and one sent $6; ($3) one sent $2, one sent $3, one sent $4, and one sent $10; ($4) one sent $1 and one sent $10; ($5) one sent $3; giving on average 3.03 dollars.

A parametric and a nonparametric statistical tests in Table 3 analyze the effect of reputation for generosity. Both 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. Hence, the data from the second experiment provide evidence for the effect of reputation for generosity on the dictators' behavior.

Table 3. Reputation for Generosity Results from Experiment 2

Data Category	Mean Amount Sent	Means Test	Mann-Whitney Test
Tr. Stranger	1.71 [1.27] {34}		
Tr. Reputation	3.03 [2.39] {34}		
Tr. Stranger vs. Tr. Reputation		-2.85 (.003)*	-2.70 (.003)*

Standard deviations in brackets.
Number of subjects in braces.
p-values in parentheses.
* one-tail test.

4 Discussion

This paper reports two laboratory experiments aiming at reputation effects in an environment exhibiting salient fairness considerations. The experiments were designed to pick up differences in behavior of dictators towards strangers and individuals with an established reputation. I find mixed evidence on the importance of reputation. In the first experiment, a majority of dictators took money from a stranger. In the next treatment the recipient's reputation of being a taker caused the dictators to take even more money, but this difference was statistically insignificant. On the other hand, the reputation for generosity caused the dictators in the second experiment to send significantly larger amounts to generous recipients than to strangers. This result points to the conclusion that a virtue could be contagious, having 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 action on social norms.

After making an observation that generosity of first dictators generated more generosity by the new ones, 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 inform about the past actions of a subject, but it also carries two additional features. First, it provides information about the paired recipient, therefore identifying him. Small and Loewenstein (2003), Yamamori et al. (forthcoming), and several other studies show that identification itself can result in a more generous behavior. Second, the reputation can signal beliefs that the general population holds regarding 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 as appropriate and change their behavior. The experiment presented in Servátka (2007) separates these three motivations and concludes that the reputation has stronger effect than social influence and identification.

A final issue concerns the question why the reputation of being a taker did not play a role in one dictator game but the reputation for generosity did in another one. Unfortunately, the current design does not offer a more detailed explanation; neither has it suggested how general this finding is.

More research, both theoretical and experimental, studying what triggers the relevance of reputation in some scenarios but does not in others, is needed.

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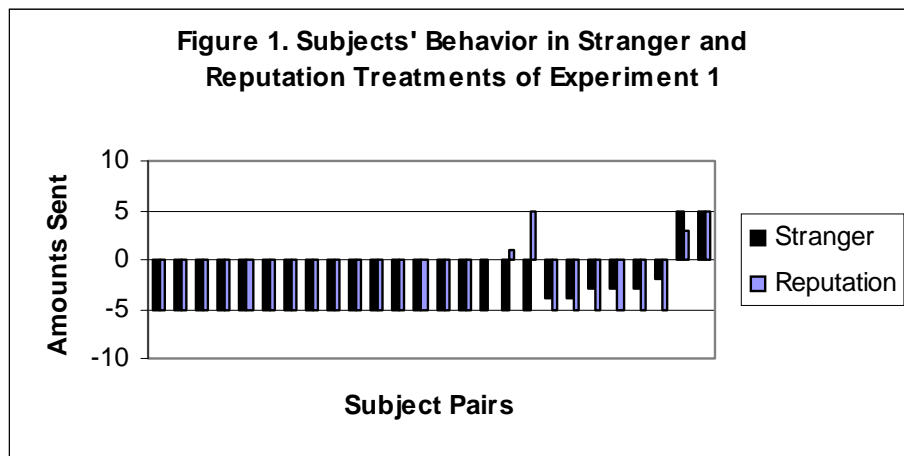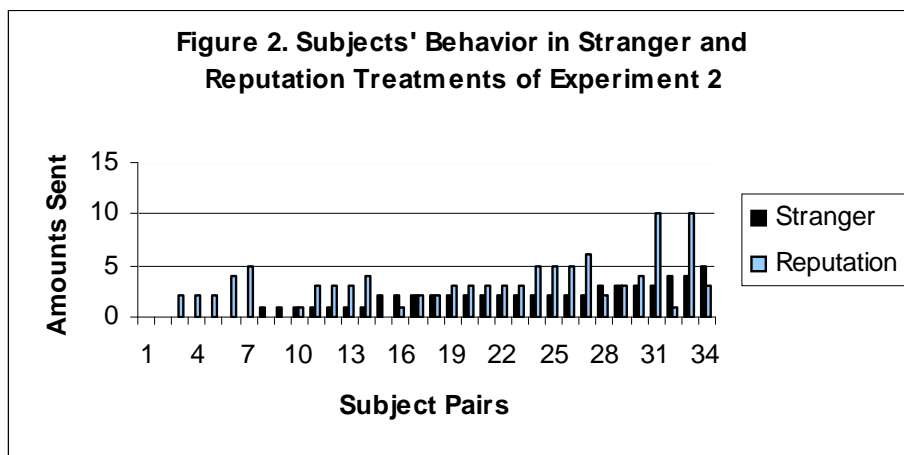
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5   Appendix

5.1   Figures

Figure 1. Subjects' Behavior in Stranger and Reputation Treatments of Experiment 1

Figure 2. Subjects' Behavior in Stranger and Reputation Treatments of Experiment 2

5.2 Instructions

5.2.1 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

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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.

Initial Account Balances

Each person in each group will be credited with 10 experimental dollars at the beginning of each experimental task.

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 contain 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.

5.2.2   Blue Task Instructions – Experiment 1

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 can not be changed any more.

Initial Account Balances
Each person in each group will be credited with $10 at the beginning of this task. The $10 credit will be in your dollar account.

What Happens if a Group X Person Decides to Decrease the Other's Account Balance?
If Person X decides to decrease the Y Person's account balance by $1 then the X person's account balance increases by $1. The Group X person cannot decrease the Y person's account balance by more than $5.

What Happens if a Group X Person Decides to Increase the Other's Account Balance?

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.

Review of the Decision Task of a Person from Group X

Each person in Group X will choose a column from the TABLE X. Each column summarizes how much both matched X and Y persons get or lose, and their resulting account balances.

	You can *decrease* the Other Person's Account as follows					You can *increase* the Other Person's Account as follows										
If you change your Account by	+5	+4	+3	+2	+1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Then the Y person's Account changes by	-5	-4	-3	-2	-1	0	+3	+6	+9	+12	+15	+18	+21	+24	+27	+30
Y person's Account Balance becomes	5	6	7	8	9	10	13	16	19	22	25	28	31	34	37	40
Your Account Balance becomes	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Review of the Group Y Decision Task

Group Y Persons have no decision to make. This means that their final account balance is determined by the Group X Persons.

Examples

Initial account balances for both X and Y group people are 10 dollars.

If Person X decides to change his/her account balance by +4, say, person Y's account changes by -4. The payoffs for this task will yield 14 dollars for Person X and 6 dollars for Person Y.

If Person X decides to change his/her account balance by 0, person Y's account does not change. The payoffs for this task will yield 10 dollars for Person X and 10 dollars for Person Y.

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 4 dollars for Person X and 28 dollars for Person Y.

5.2.3 Blue Task Decision Form for a Person from Group X

Your and your paired Group Y's person initial account balance for this task is $10 each.

Please choose a column from the following table. Indicate your choice by drawing an arrow that points at the bottom of the column you have chosen

	You can *decrease* the Other Person's Account as follows					You can *increase* the Other Person's Account as follows										
If you change your Account by	+5	+4	+3	+2	+1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Then the Y person's Account changes by	-5	-4	-3	-2	-1	0	+3	+6	+9	+12	+15	+18	+21	+24	+27	+30
Y person's Account Balance becomes	5	6	7	8	9	10	13	16	19	22	25	28	31	34	37	40
Your Account Balance becomes	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

5.2.4 Orange Task Instructions - Experiment 1

Decisions

You are matched with a different person than in the previous tasks. 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 can not be changed any more.

Initial Account Balances

Each person in each group will be credited with $10 at the beginning of this task. The $10 credit will be in your dollar account.

What Happens if a Group X Person Decides to Decrease the Other's Account Balance?

If Person X decides to decrease the Y Person's account balance by $1 then the X person's account balance increases by $1. The Group X person cannot decrease the Y person's account balance by more than $5.

What Happens if a Group X Person Decides to Increase the Other's Account Balance?

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.

Review of the Decision Task of a Person from Group X

Each person in Group X will choose a column from the TABLE X. Each column summarizes how much both matched X and Y persons get or lose, and their resulting account balances.

	You can *decrease* the Other Person's Account as follows					You can *increase* the Other Person's Account as follows										
If you change your Account by	+5	+4	+3	+2	+1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Then the Y person's Account changes by	-5	-4	-3	-2	-1	0	+3	+6	+9	+12	+15	+18	+21	+24	+27	+30
Y person's Account Balance becomes	5	6	7	8	9	10	13	16	19	22	25	28	31	34	37	40
Your Account Balance becomes	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Review of the Group Y Decision Task

Group Y Persons have no decision to make. This means that their final account balance is determined by the Group X Persons.

5.2.5   Orange Task Decision Form for a Person from Group X

You are matched with a different person than in the previous tasks. The Group Y person you are paired with for this task has previously made the following decision as the first mover:

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

Your and your paired Group Y's person initial account balance for this task is $10 each.

Please choose a column from the following table. Indicate your choice by drawing an arrow that points at the bottom of the column you have chosen

	You can **_decrease_** the Other Person's Account as follows					You can **_increase_** the Other Person's Account as follows										
If you change your Account by	+5	+4	+3	+2	+1	0	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
Then the Y person's Account changes by	-5	-4	-3	-2	-1	0	+3	+6	+9	+12	+15	+18	+21	+24	+27	+30
Y person's Account Balance becomes	5	6	7	8	9	10	13	16	19	22	25	28	31	34	37	40
Your Account Balance becomes	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

5.2.6 Blue Task Instructions - Experiment 2

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.

Group Y 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.

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If the Group X Person Gives	The Experimenters Triple the Amount	And the Group Y Total Payoff is
0	3 * 0	0
1	3 * 1	3
2	3 * 2	6
3	3 * 3	9
4	3 * 4	12
5	3 * 5	15
6	3 * 6	18
7	3 * 7	21
8	3 * 8	24
9	3 * 9	27
10	3 * 10	30

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

5.2.7 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

5.2.8 Yellow Task Instructions

Initial Account Balances

If the Group Y Person Gives	The Experimenters Triple the Amount	And the Group X Total Payoff is
0	3 * 0	0
1	3 * 1	3
2	3 * 2	6
3	3 * 3	9
4	3 * 4	12
5	3 * 5	15
6	3 * 6	18
7	3 * 7	21
8	3 * 8	24
9	3 * 9	27
10	3 * 10	30

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.

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.

5.2.9 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