

## **Impact of Social Risk Aversion and Audience Effects on Generosity to the Poor**

Shweta Suresh<sup>\*</sup>  
Carnegie Mellon University  
ssuresh@andrew.cmu.edu

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## **Abstract**

This paper seeks to contribute to our understanding of audience effects and another effect called social risk aversion. I conduct dictator games in a panel design to collect between-subject and within-subject comparisons. My experiment modifies Christina Fong and Felix Oberholzer-Gee's prior experimental design in order to better identify how the two separate phenomena of social risk aversion and audience effects work to alter donors' decisions, especially when they are given the option to purchase information about the welfare recipient. Results show that giving decreases when donors decide not to buy information about recipients in the first period, but bounces back up if they make this decision in later periods. Social risk aversion is unable to explain this observation; however, a plausible explanation is that the audience effect is weakened during the first period but remains strong during later periods. Understanding these motivations behind people's decision to donate is important because this information allows governments and non-governmental organizations to better structure transfer programs.

## 1. Introduction

It is not clear whether producing costly information about recipients is the best course of action for charitable organizations to attract more donations. Research shows that donors do care about the characteristics of their recipients.<sup>1</sup> Fong and Oberholzer-Gee (2011) demonstrate that when donors are allowed to purchase information about their recipients, those that purchase the information go on to reward more preferred types. However, Fong and Oberholzer-Gee (2011) also show that average giving is substantially lowered when subjects are given a choice to purchase information compared to a control treatment where information is provided for free. In light of this, it is not very clear whether producing costly information has a positive impact on social welfare. In order to understand this relationship better, it is important to understand the cause for low giving when information is offered to donors. Thus, this paper focuses on researching two potential explanations for the effect of endogenous information on mean transfers to the poor.

The main question driving my research stems from two puzzling observations in Fong and Oberholzer-Gee's experiment. Their experiment consisted of playing dictator games – games that involve two participants, a dictator and a recipient, in which the dictator is given a sum of money to divide between himself and the recipient. In Fong and Oberholzer-Gee's experiment, dictators were asked to donate money to a recipient who was either a disabled person or a drug user. From previous research on the subject, we can expect dictators to donate more money to disabled people than drug abusing people. However, this still leaves two important questions unanswered. First, how important is the information about the recipient to potential donors? Second, how is average giving affected by this information? Fong and Oberholzer-Gee's experiment aimed to address these questions. To investigate this, Fong and Oberholzer-Gee (2011) recorded the donations made by dictators with no

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<sup>1</sup> See, for instance, Eckel and Grossman (1996).and Fong and Luttmer (2011).

information about their recipient, and compared it with donations made by dictators who had chosen to acquire this information at a price.

The first puzzling observation from their experiment is that dictators who do not have information about whether they will be paired with a deserving or undeserving recipient—but know that they could be paired with either type—give as much as they would if they were paired with a deserving type for sure. This brings up the question: Why don't they give less to account for the probability that they might be paired with an undeserving recipient? The second observation is that dictators who are offered the choice to buy information about their recipient but choose not to do so, reduce their transfers drastically, as if they are paired with an undeserving recipient for sure. This brings up a second question: Why don't they give more to account for the probability that they might be paired with a deserving recipient?

A possible explanation for these unusual observations is the presence of a weakening audience effect. An audience effect is a phenomenon in which dictators alter their giving because of the influence of an audience. This audience may be the recipient who the dictator is transferring money to, the experimenter who is observing the donation, or even the dictator himself. Thus, under the influence of the audience, the dictator feels obligated to give more. In Fong and Oberholzer-Gee's experiment, when the dictator chooses not to buy information about the recipient, the lack of information reduces his obligation to pay and gives him an excuse to act selfishly. Thus, in this case, the audience effect is weakened. Another possible explanation for these observations is a phenomenon that Fong and Oberholzer-Gee call social risk aversion. Social risk aversion is a situation in which even if the dictator does not know whether the recipient is a drug abuser or a disabled person, he still transfers a large portion of the wealth because he does not wish to wrongly punish a deserving recipient (Fong and Oberholzer-Gee, 2010).

Fong and Oberholzer-Gee did not anticipate the possibility of audience effects or social risk aversion coming into play, so their experiment was not designed to test them. My experiment is focused on answering these questions and understanding the variables affecting people's donations under different information conditions more clearly. I have designed a new experiment to directly test the presence of social risk aversion and audience effects in this setting. Understanding how information about recipients affects donors is important to many governments and NGOs that seek funding through donations. It is also important in the construction of transfer programs. The results of Fong and Oberholzer-Gee (2011) showed that providing information can reduce overall offers, because once people have the information, they give much less to less preferred types compared to how much they would give if they did not have the information. Thus, further research into how donors use information can prove to be very useful.

This paper shows that dictators who are given the choice to buy information first, and decline to buy this information, reduce their giving compared to a control treatment in which no information is provided. However, surprisingly, when dictators decline to buy information in later periods of the game their giving bounces back up. This pattern of giving is not consistent with social risk aversion--since social risk aversion is a time invariant effect--but it is consistent with audience effects. It is plausible that the audience effect is being weakened in the first period but not in the later periods by the combined effect of a binary switch in giving in the other treatments and stickiness in giving. The weakened audience effect could also possibly be because people care about what the prevailing norm of giving is. Thus, first-time donors tend to give less when they know that their recipients may belong to a less preferred type. Donors who have been giving for a while seem to be unaffected by this information.

The rest of the paper is organized in the following way. Section 2 provides key arguments from relevant literature addressing audience effects and social risk aversion. Section 3 explains the experiment design. Section 4 summarizes the data analysis and draws up the main results and Section 5 concludes.

## **2. Background**

The impact of audience effects on dictators' decisions is an important topic of research and has a large amount of literature devoted to understanding it. Social risk aversion, on the other hand, is a concept proposed by Fong and Oberholzer-Gee (2010) to understand the puzzling observations seen in their previous experiment. Thus, currently, there is no literature focused on this idea. Hence, I will briefly review the literature pertinent to audience effects.

Andreoni and Bernheim (2009) argue that the main reason why equal division of monetary rewards is the norm is that subjects have a desire to be perceived as fair. When dictators know that their decisions are observable, they tend to donate more because they would like to appear fair to the audience. However, when their decisions remain anonymous or their role in the decision-making process is obscured, dictators are found to act more selfishly and redistribute very little. Thus, Andreoni and Bernheim (2009) conclude that "choices depend on observability," and experiments that result in increased anonymity or obscurity of the dictator's role have weaker audience effects and thus give dictators an excuse to be more selfish.

Benabou and Tirole's (2004) argument is along the same lines as Andreoni and Bernheim's (2009) hypothesis, but differs in that they assert that dictators not only care about being perceived as fair but also care about their self image and reputation. They cite evidence from Dana et al. (2003) as support for their argument. Dana et al. (2003) use an experiment to show how an increase in ignorance on the part of the dictator about the outcomes of his/her

actions results in increased selfishness. The researchers create three manipulations of the same experiment by modifying the transparency between the dictator's actions and their ultimate outcomes. On comparing the results, the data shows that dictators are more selfish when they are not entirely sure about the outcomes that their actions will have. Thus, Dana et al. (2003) conclude that "people care about fairness but will capitalize on uncertainty to be more selfish." They also echo the argument made by Andreoni and Bernheim (2009) about some dictators caring about the appearance of being fair more than the fair outcome.

In the paper "What you don't know won't hurt me: Costly (but quiet) exit in dictator games," Dana et al. (2006) further the argument that dictators care about not appearing selfish by adding that they also care about meeting the expectations of the recipient. The dictators play a \$10 dictator game but are also given the option to exit the game for \$9. If they exit the game, the recipients will have no knowledge about the existence of the game. The results show that a third of the participants were willing to exit the game and take the \$9 pay-off instead. This outcome doesn't make much logical sense when the possibilities of a higher pay-off of (10,0) or an equivalent pay-off of (9,1) can be obtained by playing the game. Thus, Dana et al. (2006) conclude that if there is a chance that the dictator can make sure that the recipient will never find out about the existence of the dictator game, then he will take the chance because this implies that the recipient has no expectations and thus, the dictator will not have to donate. Thus, the recipients' expectations of payments are an important factor in influencing how much a dictator donates.

Koch and Normann (2008), however, provide some competing evidence regarding the impact of the two effects—the desire to appear fair and preserve self-respect, and the need to fulfill the recipient's expectations—on the magnitude of giving. Koch and Normann (2008) argue that given that the experiment is double-blind, i.e., the experimenter has no way of knowing the dictator's decisions; dictators do not care about appearing fair or fulfilling the

recipient's expectations. Similar to Dana et al (2003), Koch and Normann (2008) perform an experiment that modifies the obscurity of the dictators' actions and compares it with their transfers. Koch and Normann (2008) achieve this by directly changing how much information the recipient has about the dictator's decisions. They run two separate treatments: *Aware Recipient* and *Ignorant Recipient*. Under *Aware Recipient*, the recipients are provided with the dictator game instructions. Under *Ignorant Recipient*, recipients are provided with no information; in fact, they are actually unaware that they are taking part in the experiment. Results show that there is uniform giving across both the treatments. Thus, the fact that the recipients had different levels of information did not cause the dictators to change their levels of transfer. Hence, Koch and Normann (2008) conclude that as long as the experiment consists of complete anonymity, external effects such as those discussed above do not play a role.

### **3. Experimental Design**

The experiment's design retains key elements from Fong and Oberholzer-Gee's method. The experiment consists of playing dictator games with dictators from the Pittsburgh university community and welfare recipients residing in public housing in Pittsburgh. The dictators are recruited by Carnegie Mellon's Center for Behavioral and Decision Research which recruits from a sample pool consisting of students from Carnegie Mellon University and the University of Pittsburgh, as well residents in the university area. The recipients are recruited from low-income neighborhoods in Pittsburgh, and have indicated that they are being held back economically either due to drug or alcohol abuse or due to disability.<sup>2</sup> As in Fong and Oberholzer-Gee's experiment, the dictator game randomly assigns each dictator to

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<sup>2</sup> See Fong and Oberholzer-Gee (2011).



a recipient and involves them making choices about how much to donate, given that they may be paired with a disabled person or a drug or alcohol user.

This experiment improves on Fong and Oberholzer-Gee’s experiment by decreasing the number of assumptions. A drawback in Fong and Oberholzer-Gee’s experimental design was that each dictator played only one game—thus, it was not possible to directly compare how a person would donate when given free information and when given a choice to buy information. This led Fong and Oberholzer-Gee to make two assumptions: that offers are independent and identically distributed, and that the dictators’ choices are independent of irrelevant alternatives (IIA). According to Fong and Oberholzer-Gee, the second assumption is a “commonly imposed principle of rationality” and implies that, for example, dictators who donate a certain sum of money under *EXOG-NO INFO* will donate the same amount of money if they decline the offer to buy information in *CHOICE*. In the new experiment, we avoid making these assumptions by having all the dictators play all four treatments: *CHOICE*, *EXOG-NO INFO*, *EXOG-INFO* (\$9 and \$10 games). Thus, we have collected enough data to be able to analyze how each dictator responds to different levels of information about his recipient.

The experiment also differs in that the dictator games are now computerized. More information about this procedural change has been provided in Section 3.2.

### 3.1. Treatments

The four treatments are identical to those in Fong and Oberholzer-Gee’s experiment. Participants are given a sum of \$9 or \$10—depending on the treatment—to allocate to a public housing resident. Each participant will play all the four treatments with four different recipients. In the *CHOICE* treatments, participants are given \$10 to donate and the option to buy information about their recipient for \$1. In the *EXOGENOUS NO INFO* treatment,

participants are given \$10 and no information about their recipient. In the *EXOGENOUS INFO* treatment, participants are told whether their recipient is a disabled person or a drug or alcohol user. This treatment is conducted in two different stakes of \$9 and \$10. The two stakes are included to be able to econometrically identify the difference between having \$9 and \$10 at the time of making the decision to donate.<sup>3</sup>

### 3.2 Procedures

As mentioned above, dictators were recruited with the help of Carnegie Mellon's Center for Behavioral and Decision Research, which recruits from a sample pool consisting of students from Carnegie Mellon University and the University of Pittsburgh, as well residents in the university area. The dictators were paid a \$7 show-up fee. All the dictator games were conducted electronically using a computer program called ztree. The program allowed the dictators to click through different screens of instructions. (A transcript of the instructions has been provided in Appendix A.) The dictators were also provided with a hard copy set of instructions for reference at any time. The computer program randomly assigned the order of treatments for each dictator. Prior to starting the games, the dictators did not have any knowledge about the number of games they would be playing, and even during the course of the experiment they did not know there would be four treatments until they were done. As in Fong and Oberholzer-Gee's experiment, an exit survey was conducted at the end of the experiment in order to collect demographic information.<sup>4</sup> (The survey is provided in Appendix B).

The order in which the treatments are presented affects the behavior of the dictators. Thus, to eliminate any order effects, the order of treatments for different dictators is randomly

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<sup>3</sup> See Fong and Oberholzer-Gee (2011).

<sup>4</sup> Due to the small sample size, the demographic information is not included in the regressions in this paper. This information will be utilized in a future paper once more data is collected.

assigned by the computer program. Since there are four treatments, one of 24 different orders of treatments can be assigned by the computer program to each of the dictators.

Payment is made at the end of experiment. There are two experimenters—one that fills envelopes with the payment amounts, writes the corresponding dictator's ID number on the front of the envelope, and has no interaction with the dictators; and another that delivers the envelopes to the dictators and has no knowledge of the contents. The payment envelope is padded in order to protect the dictator's anonymity regarding their payment amount. When playing each treatment, the dictators enter the recipient's ID into the computer program. This information is stored by the program and later, the amount is mailed to the corresponding recipient. Thus, the experiment is designed to protect the dictator and the recipient's information, and since there is no exchange of information between them, the experiment is double blind.

#### **4. Results**

The experiments were conducted during April 2011 with a total of 156 participants. The summary statistics of the data have been provided in Table 1. Since each dictator played four treatments in the experiment, there are four different time periods of data collection. Hence, the statistics have been broken down according to time period. Table 2.1 summarizes the mean transfers for each treatment condition in the first period. The table further separates the transfers according to whether the recipient was faced with a disabled or a drug or alcohol abusing recipient. The mean transfers for the remaining periods have been presented in Table 2.2, 2.3 and 2.4. On comparing the mean transfers across the periods, a distinct pattern of giving is observed. Average giving by dictators who decline to buy information in the *CHOICE* treatment is much lower than average giving by dictators in the *EXOG-NO INFO* treatment in the first period. This was the same observation made by Fong and Oberholzer-

Gee (2011) in their data set. Contrary to expectations, however, in the rest of the periods, average giving by dictators who chose not to buy information bounces back up and is not significantly different from the mean transfers of dictators who are given no information.

A comparison of average giving between the first and fourth period highlights this pattern of giving. From Table 2.1, we can see that giving is significantly higher in *EXOG-NO INFO* than in *CHOICE* without information. Average giving in the *CHOICE* treatment when no information is purchased is \$1.71, while that in the *EXOG-NO INFO* treatment is \$3.50. Thus, giving in *EXOG-NO INFO* is \$1.79 higher and this difference is significant at the 5% significance level. On the other hand, this difference is much smaller in the fourth period. According to Table 2.4, the average giving in the *CHOICE* treatment when no information is purchased has risen to \$3.19, while that in the *EXOG-NO INFO* treatment is \$3.42. This difference is not significant, implying that giving in the *EXOG-NO INFO* treatment is not significantly higher than giving in the *CHOICE* treatment with no information in the fourth period.

As is clear from the two tables, the gap between giving in *EXOG-NO INFO* and giving in *CHOICE* with no information has narrowed between the first and fourth period. Furthermore, according to the data, this gap begins narrowing in the second period itself, and continues to do so through the third and the fourth periods. By looking at the data closely, it is clear that the reason for the narrowing of this gap is not because giving is going down in the *EXOG NO INFO* treatment; but rather, it is because giving in the *CHOICE* treatment with no information is going up.

Social risk aversion cannot explain this pattern of giving because it is a time invariant effect. If it was in play, dictators who do not know about their recipient type should choose to give more no matter which time period they play the *CHOICE* treatment in. But, since the

giving is increasing across the time periods, the effect that social risk aversion causes does not match up with the observed effect.

An alternative explanation for this observation is the audience effect. The low giving in the first period can be interpreted as a weakening of this audience effect, allowing the dictator to selfishly keep a larger portion of the endowment for himself without harming his self-image. The higher giving in the remaining periods, however, indicates that the even though the dictators decline the information, the audience effect is not weakened. Thus, there seem to be specific conditions under which the audience effect is weakened.

A plausible explanation for the conditions is that once a dictator has decided to give, he feels obligated to give again. A simple way to think about this is to imagine people who donate to charities every year. Reducing their giving suddenly would be harmful to not only their public image but also their self-image. Thus, once a dictator starts giving, he feels obligated to continue. If these conditions are true, the only situation in which the audience effect is weakened in the *CHOICE* treatment is in the first period. In the first period, the dictator has not seen any other treatment condition and thus, does not feel obligated to give under *CHOICE* if he does not buy information. Thus, this is the only condition under which dictators are able to act on this excuse to behave selfishly. If *CHOICE* is played in any other period, the dictator would have already transferred money under the previous treatments and thus, would feel obligated to give in this treatment as well. Thus, this hypothesis accurately explains the observation of low giving in *CHOICE* with no information in the first period and high giving in later periods.

The mean transfers in the rest of the treatments do not vary across the periods. Table 3 summarizes regressions with the offer as the response variable and the period dummies as explanatory variables. As is clear from the table, the average offers in all treatments except *CHOICE* are unaffected by the time period. The data also confirms the findings from Fong

and Oberholzer-Gee's previous experiment. Since Fong and Oberholzer-Gee's experiment contained only one period of data, I compare their results with the findings using only the first period of data. From Table 2.1, it is clear that even with relatively small sample sizes for each treatment, the mean transfers in almost all cases closely resemble those obtained by Fong and Oberholzer-Gee. Average giving is higher when paired with a disabled person and lower when paired with a drug or alcohol user across almost all treatments.<sup>5</sup>

## 5. Conclusion

Compared to Fong and Oberholzer-Gee's data, this sample shows a higher willingness to pay for information, with roughly 40% of the participants—as opposed to 30%—choosing to buy information about their recipients. The data reveals an interesting pattern of giving: dictators who choose not to buy the information give less in the first period, but if they choose not to buy the information later in the game, their giving bounces back up. Social risk aversion is not a good explanation for the increased giving in the later stages of the game because it is a time invariant phenomenon. A more consistent explanation is that the audience effect is only weakened when the option to buy information is declined in the first period. In the later periods, giving is still high because the audience effect remains strong. This explanation is plausible, given that the following assumptions are true: people feel obligated to give in the rest of the treatments and that once a person has started giving, he feels obligated to continue giving. It is also plausible that a high prevailing norm about how much to give is preventing the audience effect from weakening. Since the norm is to give a lot, the excuse to not give

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<sup>5</sup>In the *EXOG-INFO* with \$10 treatment, average giving to drug or alcohol users is higher than that to disabled people. This is an unusual observation given that the sample size for this treatment is relatively large with 41 participants. The observation disappears, however, when I look at the mean transfers for this treatment in other periods. It is also not present in the *EXOG-INFO* with \$9 treatment in any of the periods. Thus, since this observation cannot be explained by any specific effect, it is my expectation that further experimentation leading to a larger sample size will correct this observation.

requires a demanding set of conditions to be met. These conditions are only met in the first period, and thus, giving is low in the first period and high in the rest.

However, regardless of the true reasons preventing the weakening of the audience effect in later periods, it is interesting to note that the pattern of giving is such that giving is high for the majority of the periods and low in just one. The data could have given different results in which people could have given less in most circumstances and given more only when it was most difficult to avoid the moral obligation to give, but this is not the case. This conclusion has interesting policy implications because it appears that new donors are reluctant to donate when they know that their recipients could belong to a less preferred type. Thus, governments and charitable organizations should keep this in mind since it could negatively impact social welfare.

## References

- Andreoni, J., Bernheim, B.D., 2009. Social image and the 50-50 norm: A theoretical and experimental analysis of audience effects. *Econometrica*. 77, 1607-1636.
- Bénabou, R., Tirole, J., 2006. Incentives and prosocial behavior. *American Economic Review*. 96, 1652-1678.
- Dana, J., Cain, D., Dawes, R., 2006. What you don't know won't hurt me: Costly (but quiet) exit in dictator games. *Organizational Behavior and Human Decision Processes*. 100, 193-201.
- Dana, J., Weber, R.A., Kuang, J.X., 2007. Exploiting moral wiggle room: Experiments demonstrating an illusory preference for fairness. *Economic Theory*. 33, 67-80.
- Fong, C., Oberholzer-Gee, F., 2011. Truth in Giving: Experimental Evidence on the Welfare Effects of Informed Giving to the Poor. *Journal of Public Economics*. 95, 436-444.
- Koch, A.K., Normann, H., 2008. Giving in dictator games: regard for others or regard by others? *Southern Economic Journal*. 75, 223-231.



**Tables:**

Table 1 – Summary Statistics

|                       | Observations | Mean | Standard<br>Deviation | Min | Max |
|-----------------------|--------------|------|-----------------------|-----|-----|
| Transfer              | 624          | 3.11 | 2.83                  | 0   | 10  |
| Drug abuse            | 624          | 0.49 | 0.50                  | 0   | 1   |
| Bought<br>information | 624          | 0.10 | 0.30                  | 0   | 1   |
| Knows type            | 624          | 0.60 | 0.49                  | 0   | 1   |
| Funds = \$9           | 624          | 0.35 | 0.48                  | 0   | 1   |

Table 2.1: Mean transfers for 1<sup>st</sup> period

|                                               |                                  | Information<br>Does the Dictator Know His Recipient Type? |                        |                        |
|-----------------------------------------------|----------------------------------|-----------------------------------------------------------|------------------------|------------------------|
|                                               |                                  | Yes                                                       |                        | No                     |
|                                               |                                  | \$10                                                      | \$9                    |                        |
| Cannot Buy Information                        | Paired with disabled             | 2.70<br>(2.58)<br>N=19                                    | 4.39<br>(2.95)<br>N=18 | 3.5<br>(2.86)<br>N=36  |
|                                               | Paired with drug or alcohol user | 3.76<br>(2.94)<br>N=22                                    | 2.57<br>(2.33)<br>N=18 |                        |
| Can Buy Information                           | Paired with disabled             |                                                           | 4.18<br>(2.56)<br>N=11 | 1.71<br>(2.28)<br>N=25 |
|                                               | Paired with drug or alcohol user |                                                           | 1.57<br>(2.15)<br>N=7  |                        |
| Note: Standard deviations are in parentheses. |                                  |                                                           |                        |                        |

Table 2.2: Mean transfers for 2<sup>nd</sup> period

|                        |                                  | Information<br>Does the Dictator Know His Recipient Type? |                         |                        |
|------------------------|----------------------------------|-----------------------------------------------------------|-------------------------|------------------------|
|                        |                                  | Yes                                                       |                         | No                     |
|                        |                                  | \$10                                                      | \$9                     |                        |
| Cannot Buy Information | Paired with disabled             | 4.75<br>(2.73)<br>N=19                                    | 4.42<br>(2.79)<br>N= 18 | 3.04<br>(2.83)<br>N=46 |
|                        | Paired with drug or alcohol user | 2.45<br>(2.69)<br>N=19                                    | 1.14<br>(1.54)<br>N=20  |                        |
| Can Buy Information    | Paired with disabled             |                                                           | 3.67<br>(2.07)<br>N= 6  | 2.77<br>(3.11)<br>N=22 |
|                        | Paired with drug or alcohol user |                                                           | 1.75<br>(2.19)<br>N=6   |                        |

Table 2.3: Mean transfers for 3<sup>rd</sup> period

|                        |                                  | Information<br>Does the Dictator Know His Recipient Type? |                         |                        |
|------------------------|----------------------------------|-----------------------------------------------------------|-------------------------|------------------------|
|                        |                                  | Yes                                                       |                         | No                     |
|                        |                                  | \$10                                                      | \$9                     |                        |
| Cannot Buy Information | Paired with disabled             | 3.65<br>(3.98)<br>N=17                                    | 4.34<br>(2.64)<br>N= 18 | 3.15<br>(2.57)<br>N=41 |
|                        | Paired with drug or alcohol user | 1.74<br>(2.17)<br>N=22                                    | 2.00<br>(2.81)<br>N=17  |                        |
| Can Buy Information    | Paired with disabled             |                                                           | 4.68<br>(1.89)<br>N=10  | 3.06<br>(3.15)<br>N=21 |
|                        | Paired with drug or alcohol user |                                                           | 2.20<br>(2.20)<br>N=10  |                        |

Table 2.4: Mean transfers for 4<sup>th</sup> period

|                        |                                  | Information<br>Does the Dictator Know His Recipient Type? |                         |                        |
|------------------------|----------------------------------|-----------------------------------------------------------|-------------------------|------------------------|
|                        |                                  | Yes                                                       |                         | No                     |
|                        |                                  | \$10                                                      | \$9                     |                        |
| Cannot Buy Information | Paired with disabled             | 5.50<br>(3.19)<br>N=18                                    | 3.54<br>(3.56)<br>N= 23 | 3.42<br>(2.37)<br>N=33 |
|                        | Paired with drug or alcohol user | 1.95<br>(2.11)<br>N=20                                    | 1.76<br>(2.13)<br>N=24  |                        |
| Can Buy Information    | Paired with disabled             |                                                           | 6.29<br>(2.43)<br>N= 7  | 3.19<br>(2.87)<br>N=25 |
|                        | Paired with drug or alcohol user |                                                           | 1.33<br>(1.21)<br>N=6   |                        |

Table 3: Regressions

| Dependent variable<br>Model              | (1)<br>Transfer in<br><i>EXOGEN INFO \$9</i><br>(OLS) | (2)<br>Transfer in<br><i>CHOICE</i><br>(OLS) | (3)<br>Transfer in<br><i>EXOGEN INFO \$10</i><br>(OLS) | (4)<br>Transfer in<br><i>EXOGEN NO INFO</i><br>(OLS) |
|------------------------------------------|-------------------------------------------------------|----------------------------------------------|--------------------------------------------------------|------------------------------------------------------|
| Period 2                                 | -0.787<br>(0.670)                                     | 0.428<br>(0.634)                             | 0.332<br>(0.681)                                       | -0.460<br>(0.600)                                    |
| Period 3                                 | -0.274<br>(0.684)                                     | 0.923<br>(0.603)                             | -0.694<br>(0.677)                                      | -0.354<br>(0.612)                                    |
| Period 4                                 | -0.847<br>(0.638)                                     | 1.143*<br>(0.615)                            | 0.365<br>(0.681)                                       | -0.833<br>(0.646)                                    |
| Constant                                 | 3.479<br>(0.480)                                      | 2.321<br>(0.421)                             | 0.365<br>(0.681)                                       | 3.5<br>(0.447)                                       |
| Observations                             | 156                                                   | 156                                          | 156                                                    | 156                                                  |
| R-Squared                                | 0.0153                                                | 0.0268                                       | 0.0198                                                 | 0.0051                                               |
| * denotes significance at the 10% level. |                                                       |                                              |                                                        |                                                      |

## **Appendix A**

[NOTE: The first two pages of instructions in this document were provided in hard copy and not on screen. We wanted subjects to be able to refer to the paper instructions throughout the experiment and in our rehearsal we found it distracting to have both paper and screen instructions. The computerized part of the experiment begins where it says “Screen 1”]

### **Instructions**

Please follow along as the experimenter reads these instructions aloud.

You are about to participate in an economics experiment. No talking is allowed in this experiment. If you have a question, please raise your hand.

Each of you has been assigned a random four digit ID number and has been be paid \$7.00 for participating in this experiment. You will have the opportunity to earn additional money based on your decisions in the experiment. Your decisions will remain completely de-identified; nobody will be able to match your decisions to your name or face. All decisions will be entered into the computer with your experiment ID numbers and not with your name.

In this experiment, you will be given a sum of money and will have an opportunity to give any amount of that sum, from zero to 100% of it, to another person. We will refer to this person as your “counterpart.”

You will enter your decision about how much to keep for yourself and how much to give to your counterpart by computer. When you do this please read all of the information carefully before confirming your decision. A confirmed decision is final.

When you are finished, the computer will instruct you to leave this room. Once all of you have left this room, we will use the following procedure to pay you. A research assistant who does not have any interaction with you will enter this room, access the earnings data on each computer, and then enclose and seal your payments in the envelopes on your desks. Please take a moment now to write your four digit ID number on your envelope.

The research assistant will then give the envelopes to the experimenter, who will not know how much you are being paid or the decisions you entered. You will give your experiment ID card to the experimenter and he or she will give you your payment envelope. Then you will be free to leave.

The counterparts in this experiment are not present and you will not meet them. They are all black men recruited from low income areas of Pittsburgh. The men are on welfare or they live below the poverty line without public assistance. When they signed up to participate, they were given a brief description of the experiment, but they will receive no further information. In particular, they will receive no information about you. If you allocate money to a counterpart, we will match his ID number to his mailing address and mail him all of the money you decided to give.

The low-income men who participate in this experiment completed a short survey prior to the experiment. Some said they have a physical disability that has held them back economically.

Others said they do not have a physical disability but have been held back by drug or alcohol use. We recruited an equal number of each. Thus, there is a 50 percent chance that a counterpart reported a physical disability, and a 50 percent chance that he reported drug or alcohol abuse.

Before beginning this experiment, you will be randomly matched with one of these low-income men by a drawing. You have a deck of 10 cards on your desk. Each card represents one counterpart. Please draw one of them. The individual whose ID number is listed on your index card will be your counterpart in the experiment. The counterparts whose cards you did not choose will not be paired in this experiment. Each low-income man will participate in at most one interaction in this experiment.

Just one final note before we begin: There will be no deception in this experiment. Among other things, all information provided about the counterparts is true, and all of the money that you choose to give to them will be mailed to them as stated.

A Carnegie Mellon staff member not involved with this research will be verifying the payment amounts and witnessing the mailing of payments to the counterparts. The staff member will be signing a document confirming each payment. If you are interested in viewing this document, please let us know. We will be happy to contact you once the payments have been mailed and allow you to view the document.

## **Screen 1**

### **Instructions**

The experimenter will read the instructions aloud. Please follow along.

Please also take a few moments to study the instructions at your own pace.

When you are ready to begin, please click “Continue.”

## Screen 2

Please raise your hand and the experimenter will stop by and enter your ID number.

Enter Experiment ID Number: \_\_\_\_\_



### **Screen 3**

You are now about to begin the experiment. On the next screen you will be given a sum of money and will have an opportunity to give any amount of that sum, from zero to 100% of it, to your counterpart.

Please read all of the information before confirming your decision because a confirmed decision is final.

## TEN DOLLAR EXPERIMENT

For this interaction, you have been given TEN dollars.

On the next screen, please enter the ID number of your counterpart. You will receive a confirmation that this person is in our database of participants who reported being held back economically either by drug or alcohol abuse (50%) or physical disability (50%). The computer will also confirm that this person reported one of these factors.

Then you will decide how much of your ten dollars, from 0.00 to 10.00, to give to this person.

Please enter the ID number from the index card and then place the index card in the discard bowl on your desk.

ID number from index card: \_\_\_\_\_

Confirmation: The person with ID number XXX is in our database of participants who reported being held back economically either by drug or alcohol abuse (50%) or physical disability (50%).

**This person reported one of these factors.**

You may give any amount of your ten dollars, from 0.00 to 10.00, to this person.

Please enter your decision below:

I would like to give the following amount to my counterpart (\$): \_\_\_\_\_

I would like to keep the following amount for myself (\$): \_\_\_\_\_

(The two amounts must add up to exactly 10.00.)

Once you leave this screen, your decision will be entered into our database and cannot be changed. Please click the Submit button when you are ready.

You will now have an opportunity to do another experiment that is very similar to the one you just did.

Please draw a new index card from the bowl containing the ID numbers of the low-income men. The individual whose ID number is listed on your index card will be your counterpart in this experiment.

Remember that each low-income man will participate in at most one interaction in this experiment.

## TEN DOLLAR EXPERIMENT

For this interaction, you have been given TEN dollars.

On the next screen, you will enter the ID number for your counterpart. You will receive a confirmation that this person is in our database of participants who reported being held back economically either by drug or alcohol abuse (50%) or physical disability (50%). The computer will also inform you whether this person reported drug or alcohol abuse or physical disability.

Then you will decide how much of your ten dollars, from 0.00 to 10.00, to give to this person.

Please enter the ID number from the index card and then place the index card in the discard bowl on your desk.

ID number from index card: \_\_\_\_\_

The person with ID number XXX is in our database of participants who reported being held back economically either by drug or alcohol abuse (50%) or physical disability (50%).

**This person reported [PHYSICAL DISABILITY][DRUG OR ALCOHOL ABUSE].**

You may give any amount of your ten dollars, from 0.00 to 10.00, to this person.

Please enter your decision below:

I would like to give the following amount to my counterpart (\$): \_\_\_\_\_

I would like to keep the following amount for myself (\$): \_\_\_\_\_

(The two amounts must add up to exactly 10.00.)

Once you leave this screen, your decision will be entered into our database and cannot be changed. Please click the Submit button when you are ready.



You will now have an opportunity to do another experiment that is very similar to the one you just did.

Please draw a new index card from the bowl containing the ID numbers of the low-income men. The individual whose ID number is listed on your index card will be your counterpart in this experiment.

Remember that each low-income man will participate in at most one interaction in this experiment.

## NINE DOLLAR EXPERIMENT

For this interaction, you have been given NINE dollars.

On the next screen, you will enter an ID number for a counterpart. You will receive a confirmation that this person is in our database of participants who reported being held back economically either by drug or alcohol abuse (50%) or physical disability (50%). The computer will also inform you whether this person reported drug or alcohol abuse or physical disability.

Then you will decide how much of your nine dollars, from 0.00 to 9.00, to give to this person.

Please enter an ID number from an index card and then place the index card in the discard bowl on your desk.

ID number from index card: \_\_\_\_\_

The person with ID number XXX is in our database of participants who reported being held back economically either by drug or alcohol abuse (50%) or physical disability (50%).

**This person reported [PHYSICAL DISABILITY][DRUG OR ALCOHOL ABUSE].**

You may give any amount of your nine dollars, from 0.00 to 9.00, to this person. Please enter your decision below:

I would like to give the following amount to my counterpart (\$): \_\_\_\_\_

I would like to keep the following amount for myself (\$): \_\_\_\_\_

(The two amounts must add up to exactly 10.00.)

Once you leave this screen, your decision will be entered into our database and cannot be changed. Please click the Submit button when you are ready.

You will now have an opportunity to do another experiment that is very similar to the one you just did.

Please draw a new index card from the bowl containing the ID numbers of the low-income men. The individual whose ID number is listed on your index card will be your counterpart in this experiment.

Remember that each low-income man will participate in at most one interaction in this experiment.

## TEN DOLLAR EXPERIMENT

For this interaction, you have been given TEN dollars.

On the next screen, you will enter an ID number for a counterpart. You will receive a confirmation that this person is in our database of participants who reported being held back economically either by drug or alcohol abuse (50%) or physical disability (50%).

You have two options for what will happen next:

OPTION A: You may pay 1.00 dollar and the computer will inform you whether your counterpart reported drug or alcohol abuse or physical disability.

Then you will decide how much of your nine dollars, from 0.00 to 9.00, to give to this person, knowing whether he reported drug or alcohol abuse or physical disability.

OPTION B: You may pay 0.00 dollars and the computer will confirm that your counterpart reported one of these factors but not inform you which one was reported.

Then you will decide how much of your ten dollars, from 0.00 to 10.00, to give to this person not knowing whether he reported drug or alcohol abuse or physical disability.

Please enter your choice below:

I prefer OPTION A. I would like to pay 1.00 dollar and learn whether my counterpart reported drug or alcohol abuse or disability. I will then choose how much to give him out of 9.00 \_\_\_\_\_

I prefer OPTION B. I would like to pay 0.00 dollars and not learn whether my counterpart reported drug or alcohol abuse or disability. I will then choose how much to give him out of 10.00 \_\_\_\_\_

Once you leave this screen, your decision will be entered into our database and cannot be changed. Please click the Submit button when you are ready.

Please enter an ID number from an index card and then place the index card in the discard bowl on your desk.

ID number from index card: \_\_\_\_\_

If they choose OPTION A:

Confirmation:

The person with ID number XXX is in our database of participants who reported being held back economically either by drug or alcohol abuse (50%) or physical disability (50%).

**Your counterpart reported being held back economically by [PHYSICAL DISABILITY][DRUG OR ALCOHOL ABUSE].**

You may give any amount of your nine dollars, from 0.00 to 9.00, to this person.

Please enter your decision below:

I would like to give the following amount to my counterpart (\$): \_\_\_\_\_

I would like to keep the following amount for myself (\$): \_\_\_\_\_

(The two amounts must add up to exactly 9.00.)

Once you leave this screen, your decision will be entered into our database and cannot be changed. Please click the Submit button when you are ready.



If they choose OPTION B

Confirmation:

The person with ID number XXX is in our database of participants who reported being held back economically either by drug or alcohol abuse (50%) or physical disability (50%).

**This person reported one of these factors.**

You may give any amount of your ten dollars, from 0.00 to 10.00, to this person.

Please enter your decision below:

I would like to give the following amount to my counterpart (\$): \_\_\_\_\_

I would like to keep the following amount for myself (\$): \_\_\_\_\_

(The two amounts must add up to exactly 10.00.)

Once you leave this screen, your decision will be entered into our database and cannot be changed. Please click the Submit button when you are ready.

The experiment is now finished. Thank you for your participation.

Please click the Finish button.

Please gather your belongings, exit the room and see the experimenter outside. You will be asked to fill out an exit survey. Please complete it at your own pace. You will be paid once everyone has completed the experiment.

## Appendix B

### Exit Survey (To be formatted for computer entry)

1. We would like to know how important it was to you to know whether your recipient was held back by a disability or drug or alcohol abuse. When you were not given the information for free, how much would you have been willing to pay for it?  
\_\_\_\_\_
2. Have you yourself ever felt like you were held back by disability or drug or alcohol abuse?  
Yes \_\_\_\_\_  
No \_\_\_\_\_
3. If so, which factors held you back? Drug or Alcohol Abuse \_\_\_\_\_  
Disability \_\_\_\_\_ Both \_\_\_\_\_
4. Are you: male \_\_\_\_\_ or female \_\_\_\_\_?
5. How old are you? \_\_\_\_\_
6. What is your year in school? (Please check the appropriate option.) Undergraduate: 1st yr \_\_\_\_\_ 2nd yr \_\_\_\_\_ 3rd yr \_\_\_\_\_ 4th yr \_\_\_\_\_ 5th yr or beyond \_\_\_\_\_ Graduate: Master's student \_\_\_\_\_ Doctoral student \_\_\_\_\_ Professional degree student (e.g., law student, med student) \_\_\_\_\_ Other: Please specify \_\_\_\_\_
7. What is your major and/or degree program? (e.g., business, public policy, computer science, etc.) \_\_\_\_\_
8. What classes are you taking this semester? For each course, list course number, title, and when it is offered: \_\_\_\_\_
9. What is your race? White \_\_\_\_\_ Black \_\_\_\_\_ Asian \_\_\_\_\_ Hispanic \_\_\_\_\_ Other \_\_\_\_\_
10. Were you born in the United States? Yes \_\_\_\_\_ No \_\_\_\_\_
11. Where did you grow up? City and country (if it was multiple places, just tell us the one that you identify most strongly with, or the one that feels most like home). \_\_\_\_\_
12. How long have you been living in the United States? \_\_\_\_\_
13. What is your political identification, if any? Republican \_\_\_\_\_ Democrat \_\_\_\_\_ Independent \_\_\_\_\_ Other \_\_\_\_\_ None of the above \_\_\_\_\_ Don't know \_\_\_\_\_
14. What was the total annual household income of your parents or legal guardians when you were a senior in high school, in US Dollars? If you can, give us the household income before taxes and government transfers (e.g., Social Security). Otherwise, give us your household's take-home income.  
Less than \$30,000 \_\_\_\_\_, \$30,000 to \$49,999 \_\_\_\_\_, \$50,000 to \$74,999 \_\_\_\_\_, \$75,000 to \$99,999 \_\_\_\_\_, \$100,000 to \$149,999 \_\_\_\_\_, \$150,000 to \$199,999 \_\_\_\_\_, \$200,000 to \$299,999 \_\_\_\_\_, \$300,000 to \$400,000 \_\_\_\_\_, Over \$400,000 \_\_\_\_\_
15. Was this your household's income before taxes and transfers or after? Before \_\_\_\_\_ After \_\_\_\_\_
16. Please explain what considerations you made when making your decisions in the experiment. What thoughts or considerations did you have? \_\_\_\_\_
17. Finally, please write down any other comments, questions, or thoughts you have about this experiment. \_\_\_\_\_