Taking Aversion

Oleg Korenok, Edward L. Millner, and Laura Razzolini*
Department of Economics
Virginia Commonwealth University

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Abstract

We determine whether the moral cost of taking exceeds the moral cost of not giving. We design and conduct an experiment to determine whether a dictator prefers a giving game over a taking game when the payoff possibilities are identical and to measure the strength of the preference. We find that aversion to taking is prevalent and strong. Over 85% of the dictators in our experiment choose to play a giving game over a taking game when the payoff possibilities are identical and, on average, dictators are willing to sacrifice over 30% of their endowment to avoid taking.

Keywords: Taking; Dictator Game; Impure Altruism; Equivalent Variation
JEL Classifications: C91, D01, D64, H30, H41

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1. Introduction

Economists recognize that the institutional setting can affect social preferences. Andreoni and Miller (2002) write

> Let γ be a vector of *attributes of a game*. This could include the specific economic variables like rules of the game, as well as social variables like the level of anonymity, the sex of one's opponent, or the *framing of the decision*, all of which are known to affect the outcome. Future work will have to explore the more general assumptions that for a given γ the preferences $U_s = u_s(\pi_s, \pi_o; \gamma)$ are well-behaved with respect to (π_s, π_o) [*s* and *o* denote self and other] and that these preferences shift systematically as γ changes (p. 738, emphasis added).

Several studies confirm that the 'attributes of a game' and 'framing of the decision' affect outcomes in dictator games. Lazear, Malmendier, and Weber (2012), Dana, Weber, and Kuang (2007), Dana, Cain, Dawes (2006) and Andreoni, Rao and Trachtman (2011) all report evidence that individuals prefer settings where they do not have to choose how much to give. This finding implies that $U(\pi_D, \pi_R; G) \neq U(\pi_D, \pi_R; N)$, where D and R denote dictator and recipient, U(.) is the utility of the dictator, N denotes a setting where individuals do not have to choose how much to give, and G denotes a giving game.[1] In other words, these studies find that framing of the decision affects outcomes.

In this paper we also study whether framing as an attribute of a game matters. We ask whether in dictator games, $U(\pi_D, \pi_R; G) = U(\pi_D, \pi_R; T)$, where T denotes a taking game. A giving game endows the dictator with the money and the dictator chooses how much to give to the recipient. A taking game endows the recipient with the money and the dictator chooses how much to take from the recipient.[2] The two games have identical payoff possibilities when any payoff allocation in a giving game can be achieved in a taking game and vice versa.

[1] We recognize that the vector of attributes of a game include additional attributes besides the ability to give. We exclude them from the notation for convenience and because we focus on the attribute: "framing of the decisions."

[2] We focus on games where only one player receives the endowment and the dictator may transfer all of it. Other games may endow both players and some games limit how much the dictator may transfer.

Our hypothesis is that most people prefer a giving game to a taking game when the payoff possibilities are identical. This hypothesis is based on Levitt and List (2007) model of moral cost. We use a new experimental design that determines whether the dictator prefers a giving game and measures the strength of the preference. We find that most subjects prefer the giving game and that they are on average willing to sacrifice over 30% of their endowment to avoid taking. These finding imply that the preference for giving over not taking is prevalent and strong.

The next section discusses previous studies on dictator games that compare final allocations in giving and taking settings. Section 3 sets the theoretical predictions for a theory of taking aversion. Section 4 describes the experimental design and procedures, while Section 5 reports the results from the experiments. Section 6 concludes with a discussion of the results.

2. Previous Results on Giving and Taking Games

Several studies investigate giving and taking games by focusing on final payoffs. In these games, $\pi_D + \pi_R = E$, where E is the sum of the endowments. Given the budget constraint, the choice of π_R determines $\pi_D = E - \pi_R$. Therefore, in both games the utility function can be represented as $U(E - \pi_R, \pi_R; G)$ and $U(E - \pi_R, \pi_R; T)$.

To answer the question whether giving and taking games are equivalent institutional settings, several papers compare outcomes in a giving game to the outcomes in a taking game with identical payoff possibilities.[3] The results are mixed. Grossman and Eckel (2015), Dreber, Ellingsen, Johannesson and Rand (2013), Rubinstein (2014), and Kettner and Ceccato (2014) conduct experiments with a variety of procedures and fail to find significant differences in final outcomes. On the other hand, Korenok, Millner and Razzolini (2014), Oxoby and Sparragon (2008), and Cox, List, Price, Sadiraj and Samek (2015) find that the payoff to the recipient is greater in the taking game. Chowdhury,

[3] Another set of papers compares the outcomes in giving games to the outcomes of games that allow either giving or taking and find the outcomes not equivalent. See List (2007), Bardsley (2008), Cappelen, Nielsen, Sørensen, Tungodden, and Tyran (2013), and Korenok, Millner, and Razzolini (2014). Korenok, Millner, and Razzolini (2014) demonstrate that warm glow considerations imply that the outcomes may differ even when the utility function is identical in the two settings.

Jeon and Saha (2014) find support for both views. Eichenberger and Oberholzer-Gee (1998) report results in which the payoff to the dictator is greater in the giving game.

The details of these experiments differ. Grossman and Eckel (2015) use a real charity as the recipient and confront the dictator with a final allocation decision after starting from an initial allocation that gave $20 to the dictator or $20 to the charity. Dreber et al. (2013) conduct experiments in a physical laboratory and on online using Amazon's Mechanical Turk. Rubinstein (2014) conducts experiments online with no money. Kettner and Ceccato (2014) find no significant effects of framing when controlling for the gender of the dictator and recipient, with genders being public information. Korenok et al. (2014) use a within-sample design to compare the decisions dictators make in the two settings. Oxoby and Sparragon (2008) compare outcomes in a giving game when the dictator earns the endowment by answering correctly GMAT and GRE questions with outcomes in a taking game when the recipient earns the endowment. Chowdhury et al. (2014) find significantly greater payoffs to the recipient in the taking game when the dictator is female and insignificantly smaller payoffs when the dictator is male, so that any significant difference is eliminated in the pooled population. In Eichenberger and Oberholzer-Gee (1998), the dictator earns the endowment in both games.

Comparing final payoffs in the two games to determine whether $U(E-\pi_R, \pi_R; G) = U(E-\pi_R, \pi_R; T)$ is insufficient for three reasons. First, outcomes can be identical when the utility functions are not. For example, the same outcomes occur when $U(E-\pi_R, \pi_R; G) = U(E-\pi_R, \pi_R; T) + c$, where c is a constant. Adding a constant to the function changes the function, but does not change the marginal conditions that determine the optimal final payoffs. Second, payoff comparisons cannot reveal which utility is greater. For example, the maximum utility in the giving game, $U(E-\pi_R^*(G), \pi_R^*(G); G)$, may be greater than the maximum in the taking game, $U(E-\pi_R^*(T), \pi_R^*(T); T)$, when $\pi_R^*(G) > \pi_R^*(T)$ or $\pi_R^*(G) < \pi_R^*(T)$, where $\pi_R^*(G)$ is the optimal choice in the giving game and $\pi_R^*(T)$ is the optimal choice in the taking game. Finally, the comparison cannot reveal the magnitude of the difference. For example, if a person prefers giving to taking, the comparison of payoffs does not reveal whether the preference is strong or weak.

3. Theoretical Predictions

Levitt and List (2007) posit a mechanism through which changes in the institutional setting could affect utility. They develop a model that incorporates moral costs.

> The choice of action affects the agent's utility through two channels. The first effect is on the individual's wealth …. The second effect is the nonpecuniary moral cost or benefit associated with the action …. Decisions which an individual views as immoral, antisocial, or at odds with his or her own identity (Akerlof and Kranton, 2000, 2005) may impose important costs on the decision maker (see also Gazzaniga, 2005). …. Framing the problem of utility maximization in this way yields several predictions. …. … when the wealth-maximizing action has a moral cost associated with it, the agent will deviate from that action to some extent towards an action that imposes a lower moral cost. … We envision the agent trading-off morality and wealth (Levitt and List, 2007, p. 156-7).

We can represent the two channels of Levitt and List with quasi-linear utility functions $U(E- \pi_R, \pi_R ; G) = U(E- \pi_R, \pi_R) - MC_G$ and $U(E- \pi_R, \pi_R ; T) = U(E- \pi_R, \pi_R) - MC_T$, where $U(E- \pi_R, \pi_R)$ is a well-behaved utility function defined over the payoff possibilities and $MC_i > 0$ (i = G, T) is the "moral cost or benefit associated with the action" of not giving or taking. MC_i may depend on many factors or attributes of the game: giving or taking frame, payoffs to the recipient and the dictator, property rights over the endowment, size of the endowment, etc. We do not express MC_i as a function of these factors to simplify the notation.

When the moral cost of taking equals the moral cost of not giving, $MC_T = MC_G$, the dictator's preferences do not depend on the giving or taking setting, and the dictator is indifferent between a giving game and a taking game with identical payoff possibilities. When $MC_T = MC_G$, $U(E - \pi_R, \pi_R) - MC_G = U(E- \pi_R, \pi_R) - MC_T$ and the optimal choice is identical in the two settings, that is $\pi_R^*(G) = \pi_R^*(T)$. Therefore, $U(E- \pi_R^*(G), \pi_R^*(G); G) = U(E- \pi_R^*(T), \pi_R^*(T); T)$.

When the moral cost of taking is greater than the moral cost of not giving, $MC_T > MC_G$, the dictator prefers a giving game to a taking game with identical payoff possibilities. When $MC_T > MC_G$, $U(E- \pi_R, \pi_R; G) = U(E- \pi_R, \pi_R) - MC_G > U(E- \pi_R, \pi_R) - MC_T =$

$U(E-\pi_R, \pi_R; T)$. This implies that $U(E-\pi_R^*(G), \pi_R^*(G); G) \geq U(E-\pi_R^*(T), \pi_R^*(T); G) > U(E-\pi_R^*(T), \pi_R^*(T); T)$. Similarly, when the moral cost of taking is less than the moral cost of not giving, $MC_T < MC_G$, the dictator prefers a taking to a giving game, because $U(E-\pi_R, \pi_R; T) = U(E-\pi_R, \pi_R) - MC_T > U(E-\pi_R, \pi_R) - MC_G = U(E-\pi_R, \pi_R; G)$. This implies that $U(E-\pi_R^*(T), \pi_R^*(T); T) \geq U(E-\pi_R^*(G), \pi_R^*(G); T) > U(E-\pi_R^*(G), \pi_R^*(G); G)$.

The literature suggests that the moral cost of taking is generally greater than the moral cost of not giving, that is $MC_T > MC_G$. List (2007, p. 485) talks about a "moral cost" associated with decision involving taking. This moral cost can be interpreted as the desire "not to look like a jerk" even when behavior is not observed by anybody. Dreber et al. (2013) expected the dictator to be "averse to taking" and to be concerned about "violating other's entitlement." Oxoby and Spraggon "conjecture that the legitimizing of assets creates property rights which participants' observe" (2008, p. 704).

Our hypothesis, therefore, is that the moral cost of taking exceeds the moral cost of not giving, or that $MC_T > MC_G$ for most people. This means that most people prefer a giving game to a taking game with identical payoff possibilities; that is, $U(E-\pi_R, \pi_R; G) > U(E-\pi_R, \pi_R; T)$. This implies that endowment in the giving game can be decreased to the point where people are indifferent between the giving game with the lower endowment and the taking game with the original endowment.

As we vary the endowment, E, the optimal choice will depend not only on the giving or taking setting, but also on the size of E. Accordingly, we denote the optimal choices with $\pi_R^*(G,E)$ and $\pi_R^*(T,E)$. When $U(E-\pi_R^*(G,E), \pi_R^*(G,E); G) > U(E-\pi_R^*(T,E), \pi_R^*(T,E)$, a $\nu > 0$ exists such that $U(E-\nu-\pi_R^*(G,E-\nu), \pi_R^*(G,E-\nu); G) = U(E-\pi_R^*(T,E), \pi_R^*(T,E); T)$. Whenever the endowment in the giving game is greater than E-ν, the dictator prefers the giving game to a taking game with endowment equal to E. Whenever the endowment in the giving game is less than $E-\nu$, the dictator prefers the taking game with endowment E.

When given a choice between a giving and a taking game, the endowment ν that dictators are willing to sacrifice to play the giving game is similar to the equivalent variation in a standard consumer problem. In the consumer problem, the equivalent variation quantifies the change in utility between two regimes, usually involving two different prices. The equivalent variation is the change in income, holding price constant, required to reach the same level of utility attained under the price in the new regime. In our case, we measure the endowment change in the giving game that would give a dictator the same level of utility as that attained in the taking game. In what follows, we interpret ν as a measure of taking aversion.

We do not anticipate that all dictators prefer the giving game to a taking game when the payoff possibilities are identical. Some dictators may be indifferent and others may prefer the taking game. For the indifferent dictators, $\nu = 0$. For the dictators who prefer the taking game, $\nu < 0$ and satisfies $U(E- \pi_R^*(G,E), \pi_R^*(G,E); G) = U(E+\nu- \pi_R^*(T,E+\nu), \pi_R^*(T,E+\nu); T)$.

The hypothesis that the moral cost of taking exceeds the moral cost of not giving for most people leads to our two main predictions.

Prediction 1: More than 50% of the dictators prefer a giving game to a taking game when the payoff possibilities are identical.

Prediction 2: The equivalent variation is positive on average.

4. Experimental Design and Procedures

The experiment consists of three phases. Phase One confronts the dictator with a choice between a giving game and a taking game with identical endowments. Phase Two confronts the dictator with a series of choices between giving and taking games while decreasing the endowment in the preferred game by one dollar at the time. Phase Three requires the dictator to make an allocation decision in the games previously chosen.

Phase One

In Phase One, we offer a dictator the choice between a Give-only game and a Take-only game. This choice is shown as Decision 1 in Tables 1 and 2. In the Give-only game, the dictator has a $20 endowment, can give but cannot take, and the recipient has no endowment. In the Take-only game the dictator has no endowment, can take but cannot give, and the recipient has a $20 endowment. The two games have the same final payoff possibilities. In both, the payoff to dictators is bound by $0 and $20, and the sum of the payoffs to both players is $20.

Phase Two

Dictators' choices in Phase One suggest that utility is higher in one game than in the other, but we do not know how much higher. Phase Two quantifies the strength of the dictators' aversion to taking or giving. In Phase Two, dictators are offered ten additional choices between pairs of Give-only and Take-only games depending on their initial choice in Phase One.

Phase Two-Taking Aversion

If a dictator chooses the Give-only game in Phase One, in Phase Two she is offered ten additional choices between a Give-only game with decreasing endowments and the Take-only game with $20 endowment. Decision 2 in Table 1, for example, offers a choice between a Give-only game with $19 endowment and the Take-only game with $20. Decision 3 in Table 1 offers a choice between a Give-only game with $18 endowment and the Take-only game with $20. This continues until the Give-only game with $10 endowment is reached.

Table 1- Possible settings when the dictator chooses Give-only in Decision 1

Decision	Endowment in the Give-only setting		Endowment in the Take-only setting
1	$20	vs	$20
2	$19	vs	$20
3	$18	vs	$20
4	$17	vs	$20
5	$16	vs	$20
6	$15	vs	$20
7	$14	vs	$20
8	$13	vs	$20
9	$12	vs	$20

10	\$11	vs	\$20
11	\$10	vs	\$20

The sequence of choices in Phases One and Two implements the following procedure. We begin by asking whether a dictator prefers giving or taking. If a dictator prefers giving, we take away \$1 from her endowment and ask if she still prefers giving. If she does, we take away another \$1 and ask again. We continue reducing the dictator's endowment until she switches to the Take-only game or her endowment is reduced all the way to \$10. The endowment, ν, the dictator is willing to forego quantifies taking aversion.

Taking aversion is the utility loss suffered when the dictator moves from the Give-only game with a certain endowment to the Take-only game with \$20 endowment. The utility from the Give-only game right before the switch is approximately equal to the utility from the Take-only game with \$20 endowment. Thus, the difference in endowments between Decision 1 and the decision right before the switch quantifies the utility loss that dictators experience when moving from the Give-only to the Take-only regime. In other words, this difference shows how much endowment needs to be taken away from a dictator in the Give-only game to make her as miserable as she is in the Take-only game.

Consider, for example, a dictator who prefers the Give-only games with endowments of \$20, \$19 and \$18 and switches to the Take-only game when the endowment is reduced to \$17. These choices reveal that the dictator is willing to give up \$2 of endowment to avoid taking but not \$3. This means that her taking aversion is at least \$2. If a dictator who prefers the Give-only game switches in Decision 2 to the Take-only game, we conclude that her taking aversion is less than \$1. In other words, the dictator has similar utilities in the two games.

Phase Two-Giving Aversion

If a dictator chooses the Take-only game with \$20 endowment in Phase One, in Phase Two she is offered ten additional choices, shown in Table 2, between a Take-only game with decreasing endowments and a Give-only game with \$20 endowment. The difference

in endowments between Decision 1 and the decision right before the switch to the Give-only game quantifies giving aversion.

Table 2- Possible settings when the dictator chooses Take-only in Decision 1

Decision	Endowment in the Give-only setting		Endowment in the Take-only setting
1	$20	vs	$20
2	$20	vs	$19
3	$20	vs	$18
4	$20	vs	$17
5	$20	vs	$16
6	$20	vs	$15
7	$20	vs	$14
8	$20	vs	$13
9	$20	vs	$12
10	$20	vs	$11
11	$20	vs	$10

Phase Three

The experiment concludes by having the dictators make an allocation decision for each of the 11 chosen games and then selecting one game at random to determine the final payoffs to the dictators and the recipients. Having the payoffs depend on the preferences expressed creates an incentive for the dictators to express their preferences accurately. The allocation decisions also provide a basis for comparing the results in this experiment with results reported in the literature.

Experimental Procedures

The experiment was conducted in five sessions in the Experimental Laboratory for Economics and Business Research at Virginia Commonwealth University during the spring of 2014. A total of 121 subjects participated in the experiment. Upon arrival, subjects were randomly seated at visually isolated computer terminals and given a set of instructions, which were later read aloud by the experimenter. Instructions are provided in the Appendix. After reading the instructions, subjects were given a quiz to check understanding of how decisions in the experiments would affect final payoffs. Throughout the session, communication between subjects was prohibited; partitions around computer terminals prevented subjects to be observed by the experimenter and by

the other subjects and all information and choices were transmitted through computers using the program z-Tree (Fischbacher, 2007).

First, each participant selected one recipient from a list of ten charities. Next, in Phase One, the computer presented to each subject the first decision: the choice between the Give-only and the Take-only games, both with $20 endowment.[4] In Phase Two, the computer presented ten additional decisions: Decisions 2 to 11 in Table 1 or 2. All ten decisions appeared simultaneously on the computer screen and dictators were allowed to switch the regime only once.[5]

In Phase Three, the computer presented the subjects with the 11 games selected in Phases One and Two, and the subjects determined how much to give or to take in each game. The computer then randomly selected one of the 11 choices for payment and transmitted the outcome to the dictator. After the participants recorded the selected decision and the payoffs on their own personal record sheet and completed a questionnaire, to preserve anonymity, subjects proceeded to be paid privately by an assistant not involved with the experiment. Average earnings for the students were $17, which included a $5 participation fee. Average earnings for the charities were $6.74.

5. Results

Descriptive Statistics

Table 3 reports the number of dictators expressing preferences for the Give-only and Take-only games. The Table shows that 104 dictators choose the Give-only game in Decision 1, 9 of these are selfish and 95 non-selfish; while 17 non-selfish dictators choose the Take-only game in Decision 1. We classify as selfish nine participants who choose the giving game in Decision 1, give $0, switch immediately to the taking game when the endowment in the giving game is reduced to $19, and take $20. This set of choices always maximizes the dictator's monetary payoff. From the 112 non-selfish dictators, 72 switch games at some point during Decisions 2-11 (63 switch from the Give-only to the Take-only game, while 9 switch from the Take-only to the Give-only

[4] To account for a left-side bias, for 32 subjects, the screen display reversed the order in which the two choices were presented in Phase One, with the Take-only option listed first.
[5] In case of multiple switches, an error message appeared instructing the subject to revise her choices.

game), and 40 never switch. Finally, the last row of the Table shows that 113 dictators make a decision in the Give-only game with $20 endowment. Of these, 104 make it in Decision 1 and 9 make it when they switch from the Take-only to the Give-only game with $20 endowment.

Table 3 – Number of Subjects and their Choices

	Choose Give-only in Decision 1	Choose Take-only in Decision 1	Total
Total	104	17	121
Selfish	9	0	9
Non-Selfish	95	17	112
Non-Selfish Who Switch	63	9	72
Non-Selfish Who Never Switch	32	8	40
Make Decision in Give-only with $20	104	9	113

Table 4 shows the number of non-selfish dictators expressing preferences for the giving and taking games in each of the 11 decisions and the equivalent variations the choices reveal. It shows, for example, that 95 dictators chose the giving game in Decision 1, while 17 chose the taking game. Of the 95 dictators who prefer the giving game over the taking game when both endowments are $20, 85 also prefer the giving game when the endowment in the giving game is $19 and that the choices of the 10 who switched imply that the equivalent variation is between $0 and $1.

Table 4 – Choices and Equivalent Variations

Decision	# prefer giving game	# switch to taking game	v	# prefer taking game	# switch to giving game	v
1	95			17		
2	85	10	$0 \le v \le 1$	16	1	$-1 \le v \le 0$
3	81	4	$1 \le v \le 2$	16	0	$-2 \le v \le -1$
4	77	4	$2 \le v \le 3$	16	0	$-3 \le v \le -2$
5	75	2	$3 \le v \le 4$	16	0	$-4 \le v \le -3$
6	69	6	$4 \le v \le 5$	12	4	$-5 \le v \le -4$
7	51	18	$5 \le v \le 6$	11	1	$-6 \le v \le -5$
8	46	5	$6 \le v \le 7$	11	0	$-7 \le v \le -6$
9	41	5	$7 \le v \le 8$	11	0	$-8 \le v \le -7$
10	35	6	$8 \le v \le 9$	11	0	$-9 \le v \le -8$
11	32[6]	3	$9 \le v \le 10$	8[7]	3	$-10 \le v \le -9$

[6] $v \ge 10$ for the 32 dictators that prefer giving in decision 11.

The choices are heterogeneous. A strong majority (95 out of 112) prefers to give in Decision 1, but several dictators (17) prefer to take. Eleven non-selfish dictators switch in Decision 2 and, therefore, have equivalent variations that are within [–1, +1]. For 53 subjects, the equivalent variation is distributed non-uniformly in [1, 10] and for 8 subjects in [–1, –10]. Finally, $\nu \geq 10$ for 32 subjects and $\nu \leq -10$ for eight. This heterogeneity is consistent with Levitt and List's theory of moral cost. "When individuals follow different moral codes, they will generally make different choices when faced with the same decision problem" (Levitt and List, 2007, p. 157).

Table 5 contains the distribution of equivalent variations for the 112 non-selfish dictators when we use the most conservative estimate of the variation. The conservative estimate is the lower bound on how much endowment the dictator is willing to sacrifice in order to keep playing the game chosen in Decision 1. The last row of the table shows that the mean equivalent variation is 6.23, –7.53, and 4.14 for the dictators who, respectively, choose the giving game in Decision 1, the taking game in Decision 1, and all dictators.

Table 5 – Distribution of equivalent variations

Switch at Decision	# who switch to taking game	ν	# who switch to giving game	ν	All
2	10	0	1	0	11
3	4	1	0	-1	4
4	4	2	0	-2	4
5	2	3	0	-3	2
6	6	4	4	-4	10
7	18	5	1	-5	19
8	5	6	0	-6	5
9	5	7	0	-7	5
10	6	8	0	-8	6
11	3	9	3	-9	6
Never switch	32	10	8	-10	40
Total	95		17		112

[7] $\nu \leq -10$ for the 8 dictators that prefer taking in decision 11.

Mean ν	6.23	-7.53	4.14

Comparisons with Previous Studies

Before presenting our main findings, we compare our results to results reported in previous studies. We first compare our results with results from the traditional dictator game, in which the dictator gives from her endowment. The second comparison is with our results and results from other studies that compare the outcomes between giving and taking games with identical endowments.

The allocations in the giving game with $20 endowment are similar to the allocations previously observed in traditional dictator games. Many experimental studies (for a meta-study, see Engel 2011) report that in a traditional dictator game, on average, 70% of dictators give a positive amount and the average gift is about 25% of the dictator's endowment. Table 3 shows that a total of 113 dictators in our experiment make an allocation decision in the giving game with $20 endowment. In this game, 86.7% of these dictators give a positive amount. Table 6 shows that the average gift was $5.71, about 28.58% of the endowment. We attribute the somewhat higher percentage of givers to the fact that dictators give to a charity of their choice instead of giving to other participants in the experiment. This is consistent with Eckel and Grossman's (1996) original study on the effect of using charities as recipients in dictator games.

Table 6 – Average Payoff to Recipient

	# Dictators	**Average π_R in Give-only with $20 endowment($)**	**Average π_R in Take-only with $20 endowment($)**
Dictators who make a decision in Give-only with $20 endowment	113	5.71	
Dictators who make decisions in both Give-only and Take-only with $20 endowments	72	5.18	10.10

Our results are also consistent with previous studies by Korenok, Millner and Razzolini (2014), Oxoby and Sparragon (2008), and Chowdhury, Jeon and Saha (2014) that find

that the payoff to the recipient is greater in the taking game than the giving game when the endowments are identical. Table 3 shows that 72 non-selfish dictators make allocation decisions in both giving and taking games with $20 endowment.[8] Table 6 shows that the recipients' average payoff increases from $5.18 in the giving game to $10.10 in the taking game. Three tests (t-test, Wilcoxon sing-rank test, or the sign test) confirm that this difference is significant at the 5% significance level.

Main result: Are dictators averse to taking?

We now proceed to our main question: Are dictators averse to taking? The answer is yes – the majority of dictators does not like taking and taking aversion is strong.

Finding 1: Most dictators are averse to taking relative to giving when the endowments are identical.

The results support our first prediction that more than 50% of the dictators prefer a giving game to a taking game with identical endowments. When offered in Decision 1 the choice between two games with identical endowments and payoff possibilities, 86% of the participants, 104 out of 121, choose the giving game.[9] Using a binomial test, this percentage is greater than 50% at the 5% significance level.[10] If we exclude the nine selfish dictators, the percentage of dictators choosing the giving game in Decision 1 is 85%, 95 out of 112. This percentage is still greater than 50% at the 5% significance level.

The behavior of the selfish dictators is striking and consistent with a weak preference for giving over taking. All nine selfish dictators choose the giving game over the taking game in Decision 1 when the endowments are equal in the two games and switch to the taking game as soon as the endowment in the giving game is decreased by $1. This would occur when the equivalent variation is less than $1. Assuming dictators are indifferent

[8] The 40 dictators who never switch regimes make allocations decisions in only one type of game.
[9] The 104 dictators who choose giving game in Decision 1 include the 95 non-selfish and nine selfish dictators.
[10] The order in which the choice between Give-only and Take-only games was presented to the subjects did not matter; no statistical significant difference exists in subjects' behavior. Therefore, the data are pooled together.

between giving and taking, the probability that all nine choose the giving game in Decision 1 is $0.5^9 = 0.002\%$.

The results also support our second prediction that the equivalent variation tends to be positive. Table 5 shows that the conservative overall average of the equivalent variation for the 112 non-selfish dictators is $4.14. In other words, the mean equivalent variation of the utility loss suffered with the regime changes from giving to taking is just over 20% of the original $20 endowment. Two statistical tests confirm that the equivalent variation tends to be positive. The central tendency is significantly greater than $0 at the 1% level of significance using either a t-test for the mean or the Wilcoxon sign-rank test for the median.[11]

Finding 2: The aversion to taking is strong.

Table 5 reveals that each group has a strong aversion to the regime not chosen in Decision 1. The 95 dictators who choose to give in Decision 1 are willing to sacrifice, on average, at least $6.23, or 31% of the initial $20 endowment. This amount is significantly greater than zero at the 5% significance level using a t-test, a Wilcoxon sing-rank test, or the sign test. The 17 dictators who choose to take in Decision 1 are willing to sacrifice, on average, at least $7.53, or 38% of the initial $20 endowment. This amount is significantly greater than zero at the 5% significance level.

Another measure of the strength of the aversion to taking is the extent to which dictators are willing to sacrifice their own payoff to play a giving game instead of the taking game with a higher endowment. For the 95 dictators who choose the Give-only game in Decision 1 and switch to Take-only subsequently, the average payoff in the Give-only game in Decision 1 is $13.69, while their average payoff in the last Give-only game selected is $11.11. Thus, dictators, on average, sacrifice $2.58 of payoff, or about one-fifth of the average payoff attained when the endowment is $20.

[11] The p-values are both below 0.01%.

The aversion to giving is costly for the recipients. Since dictators sacrifice, on average, $6.23 of endowment and $2.58 of their own payoff to avoid switching to the taking game, recipients bear more than one-half of the reduction in endowment. Dictators bear about 40% of the reduction in endowment, while recipients bear the remaining 60%.

6. Discussion

We find that aversion to taking is prevalent and strong. A large majority of dictators express a preference to play a giving game over a taking game when the payoff possibilities are equal. When we exclude selfish dictators, we find that dictators are willing to sacrifice 31% of a $20 endowment to play a giving game instead of a taking game.

Our results support Levitt and List's (2007) model of social preferences. They suggest that action in a dictator game is affected by moral cost. We find evidence consistent with the hypothesis that the moral cost of taking is greater than the moral cost of not giving.

Evidence that charities fare better in terms of final payoff when the dictator allocation is framed as taking from the charity's endowment rather than as giving from her own endowment may suggest that framing charitable contributions as taking could potentially lead to higher donations. However, an implication of our findings is that aversion to taking may discourage potential donors from participating in campaigns when donations are framed as taking rather than giving. Consider, for example, a campaign that lists a suggested donation. Donors who want to contribute less may view the smaller contribution as taking from the charity. In that case, they may avoid the campaign completely.

The implications of our findings may extend to the debate on the origins of property rights. Aversion to taking is consistent with the contention that "the sense of ownership of property is hardwired into the human psyche and precedes and underlies the advent of formal legal institutions" (Eswaran and Neary, 2014, p. 203) and inconsistent with the contention that property rights exist only when the legal system assigns and enforces them. In our experiment, the probability of punishment is nil when the dictator takes.

"According to Stake (2004), a sense of property right is instinctive and has deep evolutionary roots; see also Gintis (2007) for a discussion of the relevant literature" (Dreber, 2013 p. 355). Aversion to taking is also consistent with the contention that social norms are sufficient to establish property rights. The finding is inconsistent with the labor theory of property since no one earns the property at risk in the experiment.

The implications may also extend beyond dictator games and charitable contributions because opportunities to take abound in society. Lazear, Malmendier and Weber (2012) and other studies show that dictators prefer not playing giving games when given a choice. We find that dictators prefer a giving game to a taking game. Together our results imply that dictators would prefer not playing a taking game when given a choice. Casual observation confirms that taking does not always occur when the option exists. Many people do not steal even when they have the opportunity to do so without detection. To the contrary, strangers often return lost items to their owners. Corruption levels vary and are low in many countries and cultures. We speculate that taking aversion limits the extent of corruption and theft. These issues are, of course, beyond the scope of the present paper. They do, however, suggest that a better understanding of other-regarding preferences and taking aversion may provide insights into questions that extend beyond dictator games and charitable giving.

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Appendix

INSTRUCTIONS

Please fill in the date, your social security or student ID number, your name, and your address on the top portion of the receipt while you wait for everyone to find a seat. Doing so reduces the time spend processing payments at the end of the experiment. The University requires receipts for accounting purposes. The monitor in the room does not collect or see them. You give them to an assistant sitting outside of the room when you leave to collect your payment for today's experiment.

You may read the following instructions silently after you complete the top portion of the receipt. The monitor reads them aloud after everyone is seated.

Welcome

The purpose of this experiment is to study decision-making related to economic situations. A research foundation has provided the funds for this experiment. We estimate that you will complete the experiment within one hour.

During the experiment you make decisions related to economic situations at your computer terminals. You will receive a $5 show-up fee. You may also earn additional money depending on the decisions that you and the other participants make.

Please raise your hand at any point if you have any questions about the instructions or if you wish to cease your participation. You may cease participation at any point; if you do you will receive the $5 show-up fee but will not receive any additional compensation.

Minimum age
Please visit the monitor if you are 17 years old or younger. Research protocols at VCU require participants to be at least 18 years old.

Anonymity
You participation will be anonymous. No one, including the researchers, will be able to identify your decisions once the experiment is completed. At the end of the experiment you are paid privately and in cash. In order to keep your decisions private, *please do not reveal your choices to any other participant.*

Risks, benefits, and cost
Participation in this experiment does not impose any risks in addition to those you encounter in your day-to-day activities. The primary benefit of the study is to advance our understanding of decision-making in economic settings. You may gain some educational benefit. The only cost to you of participation is your time.

Materials
You should have:
1. a piece of paper with a 5-digit code and
2. instructions
3. Survey

The 5-digit code is a unique identifier and helps preserve the anonymity of your decisions. It allows the monitors in the room to match you with your earnings without learning your name.

Charity
In today's experiment you will be paired with a charity of your own choosing selected from the list of ten different charities listed below. Your decisions today will determine whether and how much money you earn and whether and how much money a charity receives. When the experiment begins the computer asks you to indicate your choice of charity. You must select only one charity.

American Cancer Society
Provides many services to cancer patients and their families such as information, medical equipment, transportation to treatment locations, and a support system.

American Red Cross
Offers blood donation information and services, disaster relief, many helpful educational classes, as well as HIV/AIDS support groups.

Big Brothers Big Sisters
Provides one-to-one mentoring for youth and children residing in a one parent family for the purpose of creating confident and competent young adults.

Sierra Club
Protect and preserves environmentally sensitive areas.

Doctors Without Borders
Doctors and nurses volunteer to provide urgent medical care to some 70 countries to civilian victims of war and disasters regardless of race, religion, or politics.

YMCA
Provides parents visitation monitoring services and physical fitness services.

Feed the Children
Provides food, clothing, medical care, education and emergency relief to children in the United States and overseas since 1979.

Safe Harbor Shelter
Provides safe shelter to battered women and their children, as well as food and clothing, assistance with legal, medical and financial problems, and information/support groups in Richmond, VA.

Oxfam America
Invests privately raised funds and technical expertise in local organizations around the world that hold promise in their efforts to help poor move out of poverty: committed to long term relationships in search of lasting solutions to hunger, poverty, and social inequities.

National Public Radio
Non-profit media organization that reports on the environment, health, education, international news, and much more, each and every day.

After selecting a charity, you will make a series of decisions. At the conclusion of the experiment, the computer will pick one decision at random. The choice you make in this decision determines the charity's and your earnings. Since the computer may select any decision, you should make each choice carefully.

Decisions
You will make decisions in three phases.

Phase 1: In Phase 1 the computer shows you Decision 1 with two options:

Option A: You have $20 and you may give some to charity.
Option B: The charity has $20 and you may take some from charity.

You will choose which of the two options you prefer. How you choose between Option A and Option B is entirely a question of personal preference—there is no right or wrong answer.

Phase 2: In Phase 2 the computer presents you with ten more decisions that are similar to Decision 1 and you choose whether you prefer option A or option B.

Again, how you choose between Option A and Option B is a question of personal preference—there is no right or wrong answer. The only restriction on your choices

occurs if you choose Option B. If at some point you choose Option B, then, in all subsequent decisions you must keep choosing Option B. The reason is that, in subsequent decisions, Option B becomes relatively more attractive.

Phase 3: In Phase 3 you choose how much you actually want to give or to take in each of the options you chose earlier. On the computer screen you will see a table with two columns. The first column shows the options you have selected in Phase 2. In the second column, you will enter the amount to give or to take for each decision. How much you give or take is a question of personal preference—there is no right or wrong answer. The only restriction on your choices occurs if you choose Option B more than once in Phase 2. If you chose Option B more than once, you must enter the same amount for each decision where you chose Option B. The reason is that the Option B is always the same.

Earnings
After you complete Phase 3, the computer randomly selects one of the 11 decisions from Phase 3 to implement for payment. The decision you made there determines your earnings. If the computer selects a decision in which you choose to give, you earn the amount of money you had less what you gave and the charity receives what you gave to it. If the computer selects a decision in which you choose to take, you earn what you took and the charity receives whatever it had less what you took.

ID
The computer will ask to enter your 5-digit ID at the beginning of the experiment.

Payment to charity
At the end of the experiment, the experimenter will calculate the total amount received by each charity and will proceed to go online on each charity's website to make a credit card payment for the corresponding amount. Anyone who wishes to observe the payment is welcome stay at the conclusion of the experiment.

Please raise your hand if you have a question. We will now proceed to two Practice Scenarios.

Practice
Practice Scenario 1. Consider the following hypothetical scenario. You have chosen:

Option A: You have $3 and you may give some to charity.
In Phase 3 you will see the following:

Option Chosen	**GIVE $**
You have $3. How much do you want to give to the charity?	

What is the most you could give?
What is the least you could give?

The following shows four possible amounts you could give. Compute in each case the amount of money that you will earn and that the charity will receive.

Option Chosen	GIVE $	You earn $	Charity receives $
You have $3. How much do you want to give to the charity?	3		
You have $3. How much do you want to give to the charity?	2		
You have $3. How much do you want to give to the charity?	1		
You have $3. How much do you want to give to the charity?	0		

Practice Scenario 2. Consider the following hypothetical scenario. You have chosen:

Option A: The charity has $3 and you may take some from charity.
In Phase 3 you will see the following:

Option Chosen	TAKE $
Charity has $3. How much do you want to take from the charity?	

What is the most you could take?
What is the least you could take?

The following table shows four possible amounts you could take. Compute in each case the amount of money that you will earn and that the charity will receive.

Option Chosen	TAKE $	You earn $	Charity receives $
Charity has $3. How much do you want to take from the charity?	3		
Charity has $3. How much do you want to take from the charity?	2		
Charity has $3. How much do you want to take from the charity?	1		
Charity has $3. How much do you want to take from the charity?	0		

We now begin the experiment.