On the interpretation of giving in dictator games

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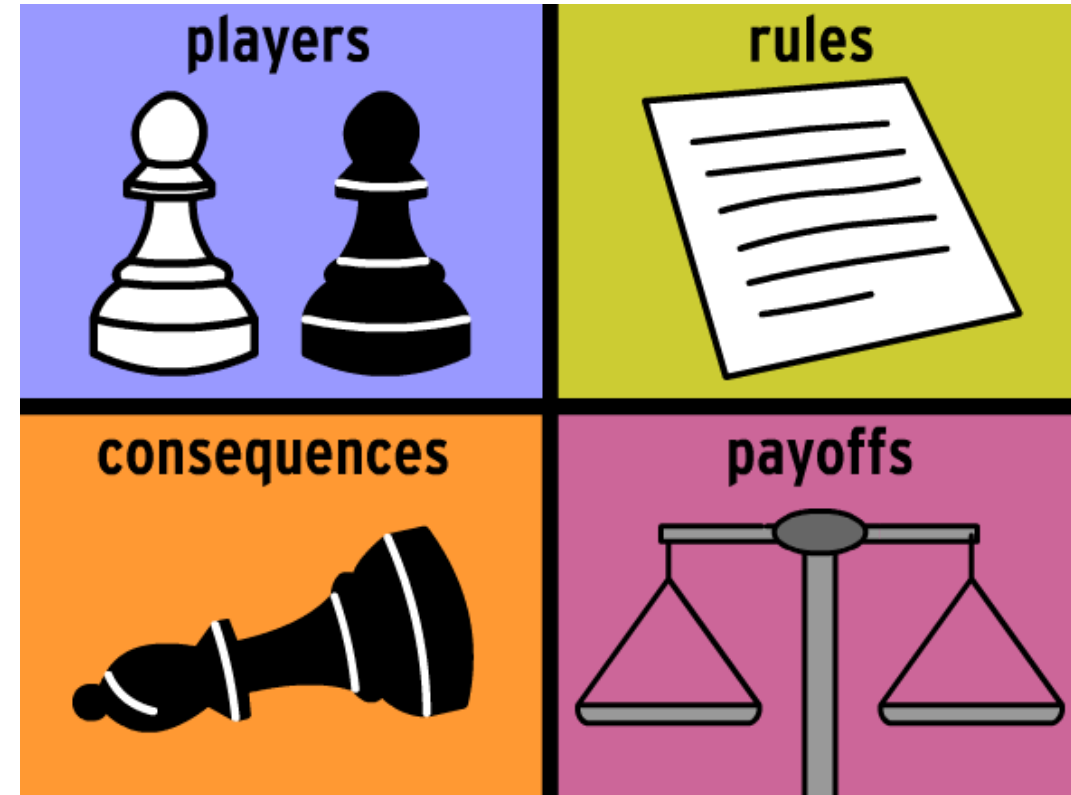
Game Theory

Ultimatum game

→ Dictator game

Proposer

$$0 \xrightarrow{x} 10$$

Responder

Yes / \ No

$$\binom{10-x}{x} \qquad \binom{0}{0}$$

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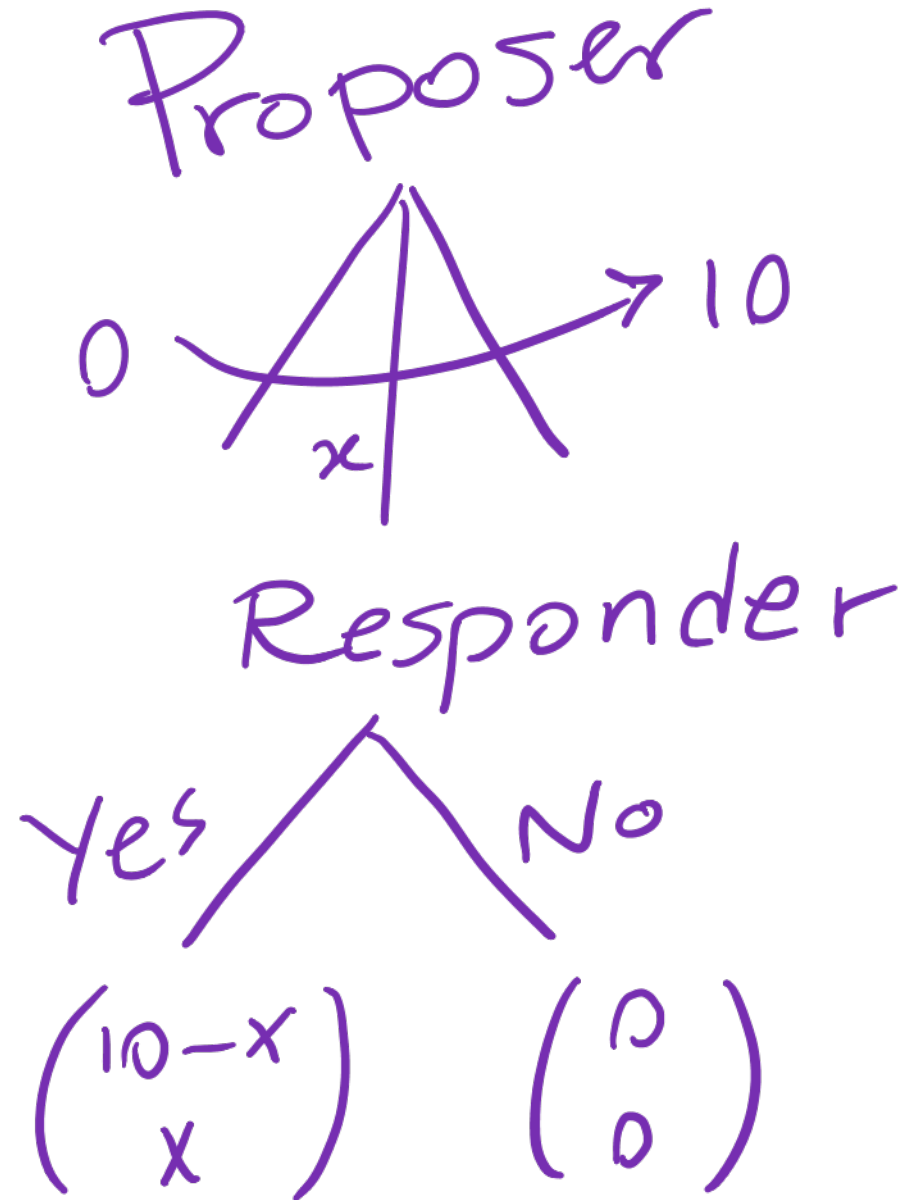
Trust game

Sequential prisoner's dilemma

✓ Nash Equilibrium
✓ Backward Induction

First Mover

0 ⟶ 10

x

� : Second Mover

0 ⟶ $x(1+r)$

y
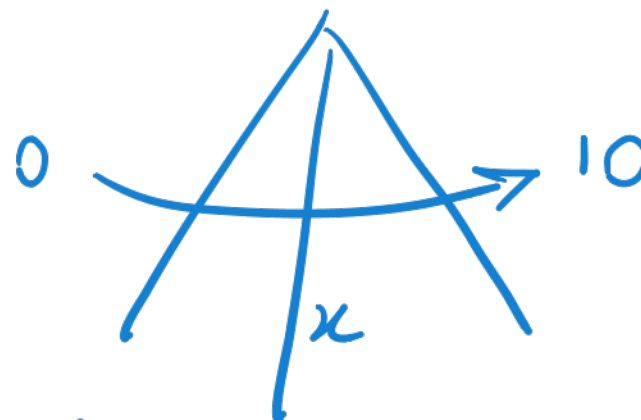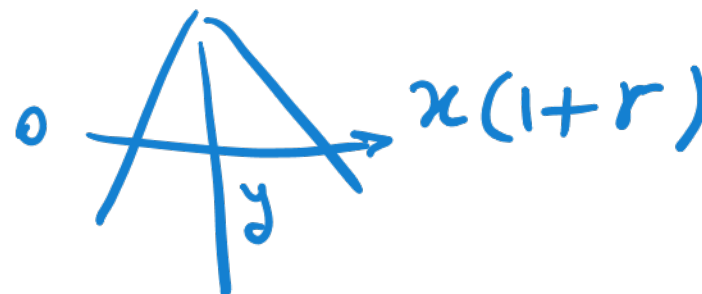
$$\begin{pmatrix} 10-x+y \\ x(1+r)-y \end{pmatrix}$$

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# People care not only about their own payoffs but also...

Henrich et al.'s (2004) abstract:

"Over the past decade, research in experimental economics has emphatically falsified the textbook representation of Homo economicus, with hundreds of experiments that have suggested that people care not only about their own material payoffs but also about such things as fairness, equity, and reciprocity."

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20 percent of the endowment!!!
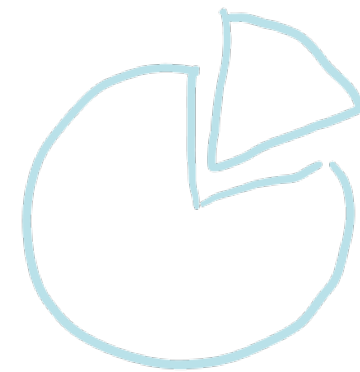
The first dictator game experiment in economics is due to Kahneman, Knetsch, and Thaler (1986)

Forsythe et al. (1994) → with real stakes & less discrete action set

Camerer (2003, 57, table 2.4): Usually more than 60 percent of subjects pass a positive amount of money, with the mean transfer roughly 20 percent of the endowment.

Similar behavior observed in other related strategic games—for example, trust and gift exchange games—has been interpreted as evidence that agents behave in a manner that is at odds with the standard Nash equilibrium posited by economists.

200 Dictators

The evidence is drawn from nearly 200 dictators in treatments that varied the action set and the origin of endowment (earned vs. unearned). The action set variation includes choices in which the dictator can "take" money from the other player.

The simple manipulation of the action set → drastic changes in behavior

Many fewer agents are willing to give money when the action set includes taking.

Agents do not ubiquitously choose the most selfish outcome.

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Institutions

Beyond questioning the standard interpretation of data from thisclass of games, these results suggest that "institutions" matter a great deal, not simply in an obvious manner that only permissible actions will be observed, but that restrictions of the action set affect behavior more profoundly:

The distribution of offers in the positive quadrant shifts, depending on whether or not the negative quadrant is in the permissible set. In this way, the results begin to provide insights into how we can (and cannot) use dictator game experiments to ultimately understand generosity outside of the lab.

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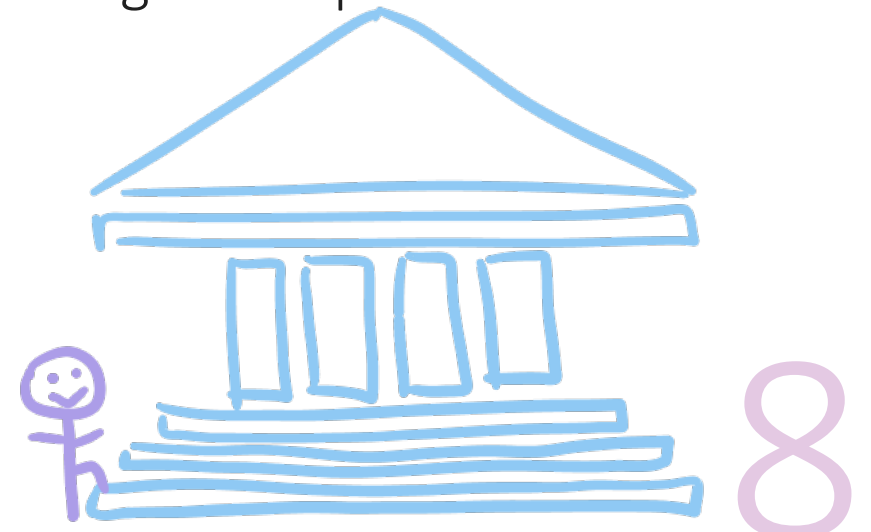
The properties of the situation

Levitt and List argue that behavior is crucially linked to not only the preferences of people but also the properties of the situation. Levitt and List (2007)

In the dictator game, the traditional action set invokes expectations of the givers and receivers that seemingly "demand" a positive gift, since a zero transfer is equivalent to being entirely selfish with money that an authoritative figure has just kindly endowed. In lieu of the fact that this same authoritative figure asks the subject if she would like to share the endowment, the wheels of motion for giving are set in place.

In the Levitt and List framework, this effect is denoted as "social norms," and they argue that the power of such norms can move choices consistently and significantly away from the subgame-perfect refinement.

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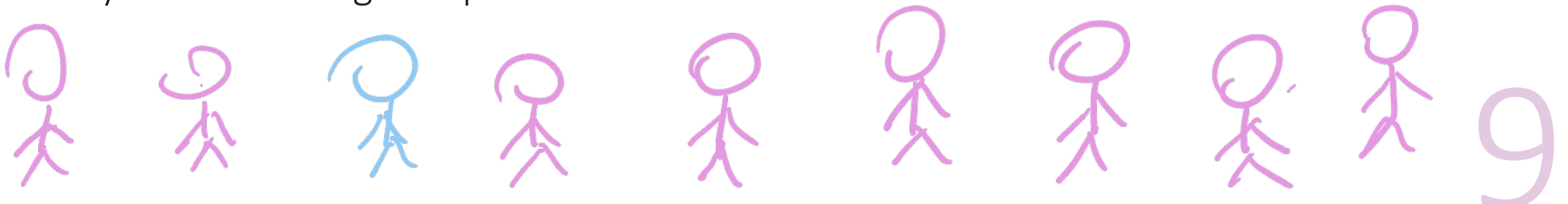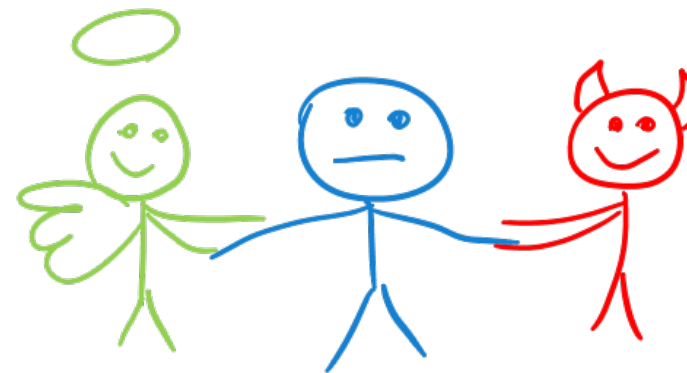
Moral authority

By allowing choices that are not entirely selfish in the nonpositive domain, the social norms of the game change, providing the dictator with the "moral authority" to give nothing.

In addition, the dictator now has many choices that signal she is not entirely selfish. One can therefore more cleanly distinguish between theories of giving in such games. For example, by using a choice set only over the positive domain, the researcher cannot cleanly interpret the meaning of a positive gift: is it that the subject has preferences over the other agent's outcomes or the subject is merely acting on signaling or self-signaling motives to avoid appearing completely selfish?

New theoretical framework

In this light, the observed data patterns provide evidence of the importance of social preferences in this domain, but not as currently modeled in the oft-cited literature.

If this argument extends to other related games, then it places the current interpretation of lab experiments purporting to measure individual propensities that apply broadly on shaky ground.

A more appropriate theoretical framework must be advanced and subsequently tested in order for the meaning of giving to be more fully understood.

This study provides one step in furthering our understanding of the psychological and economic properties of people and situations that might aid in constructing such a framework.

I. Experimental Design and Results

My experimental design is most similar to that of Bardsley (2005), who showed that willingness to give is vulnerable to taking options.
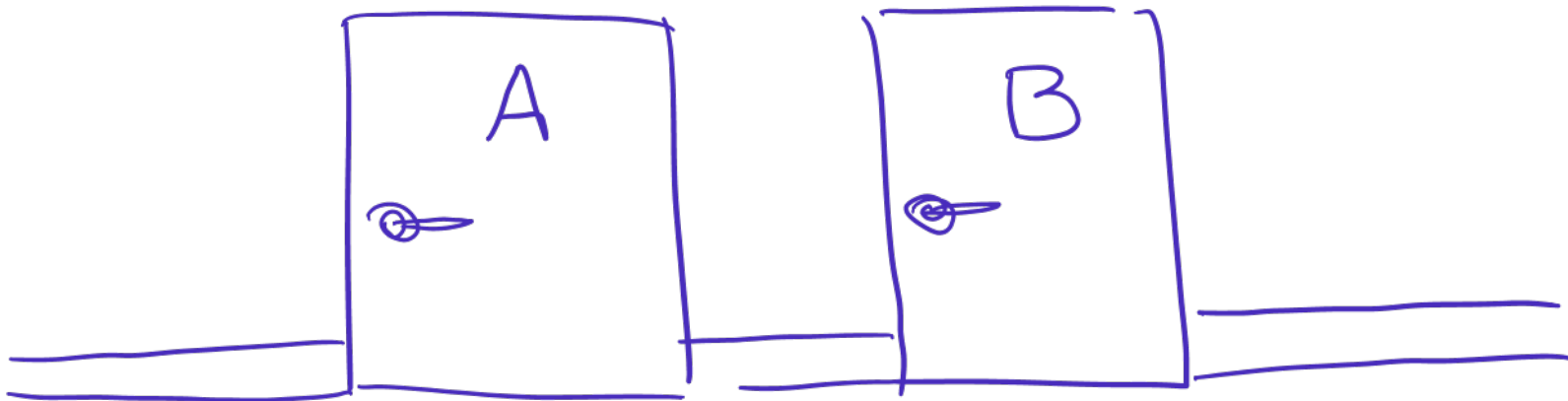
[-2,+7]

List extends this design by varying both the origin of the endowment and the level of units that can be taken—from an **asymmetric to a symmetric** treatment.

"Moral cost function"

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A. Design

Subjects were recruited from the undergraduate student body at the University of Maryland in the spring of 2005.

Participants were randomly assigned to two groups: one placed in room A and the other placed in room B.

Baseline

A   [0, 5]   B

$5 (+ $5) $\longrightarrow$ + $5

Take($1)

A   [-1, +5]   B

$5 (+ $5) $\longrightarrow$ (+ $5)

Take($5)

A   [-5, +5]   B

$5 (+ $5) $\longrightarrow$ (+ $5)
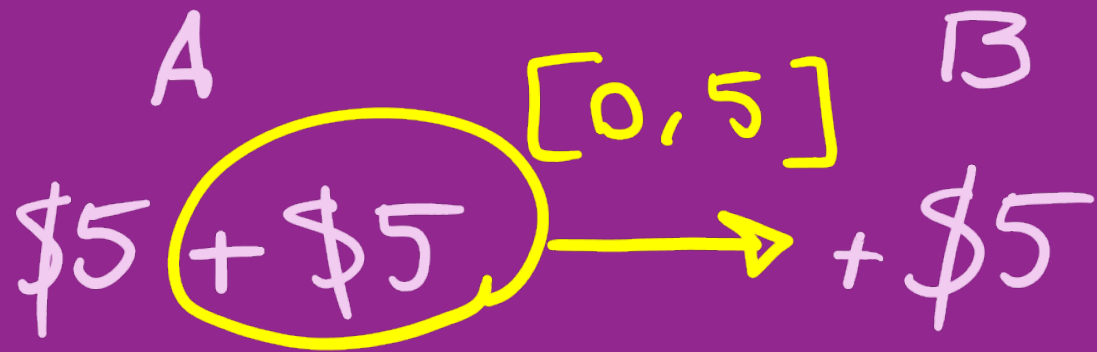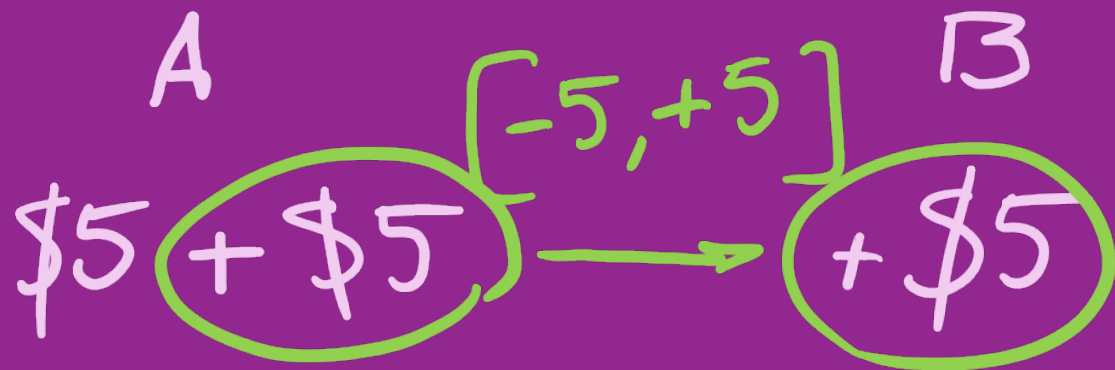
Erning

B. Results

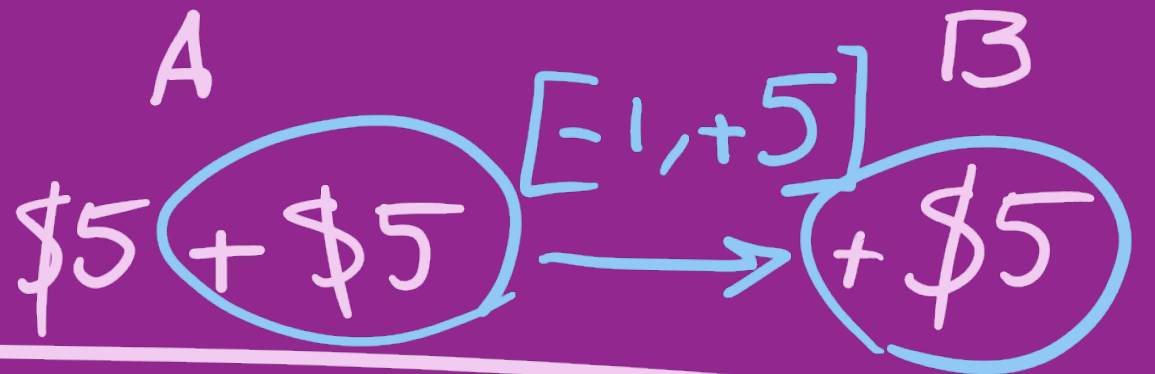Of first note is the finding that the baseline data are qualitatively similar to results reported in other dictator games: 17 of 24 dictators gave a nonzero amount, and the mean amount given was roughly 25 percent of the endowment ($32 of $120 was given).

If behavior in the baseline treatment is due to social preferences…

, then simply manipulating the choice set should have no influence on outcomes. Yet, it has considerable effects.

Allowing taking significantly shifts the distribution leftward.

Individual Data

TABLE 1
AGGREGATE BEHAVIOR

Treatment (N)	Rate of Positive Offers	Median Offer	Mean Offer	Average Positive Offer*
Baseline (24)	.71	$1.00	$1.33	.38
Take ($1) (46)	.35	$0.00	$0.33	.31
Take ($5) (50)	.10	−$4.50	−$2.48	.42
Earnings (47)	.06	$0.00	−$1.00	.40

* Reported as a percentage of the total amount available in the allocation decision (average positive offer ignores zero and negative offers).

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The baseline treatment

FIG. 1.—Baseline treatment (data online table B1)
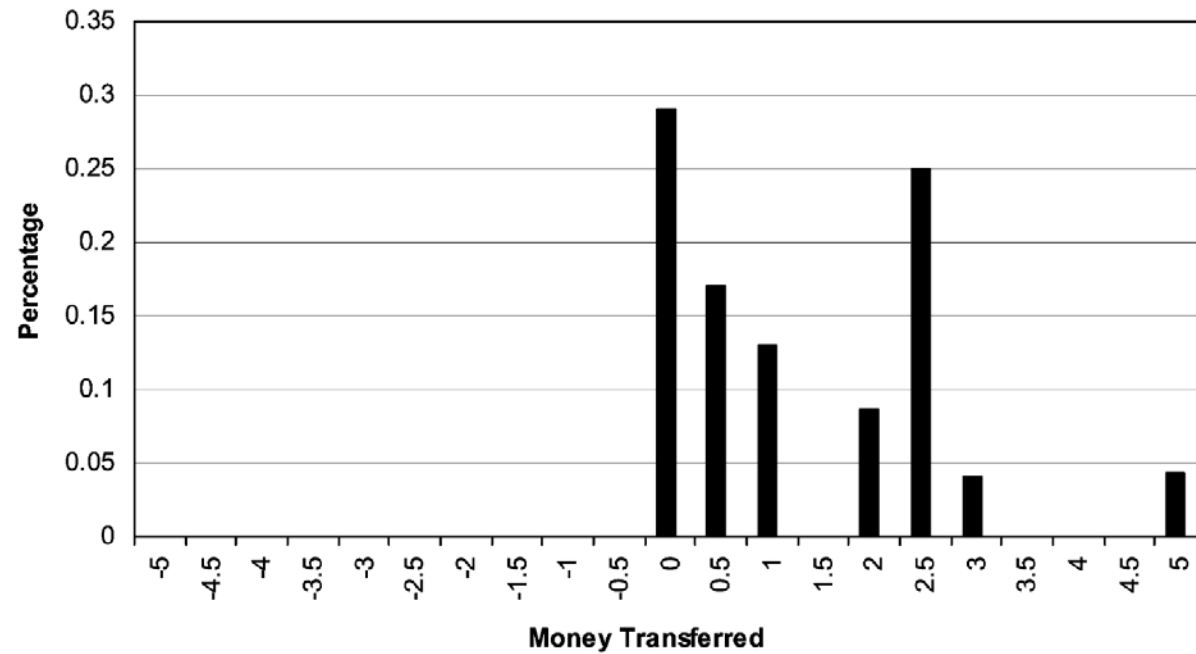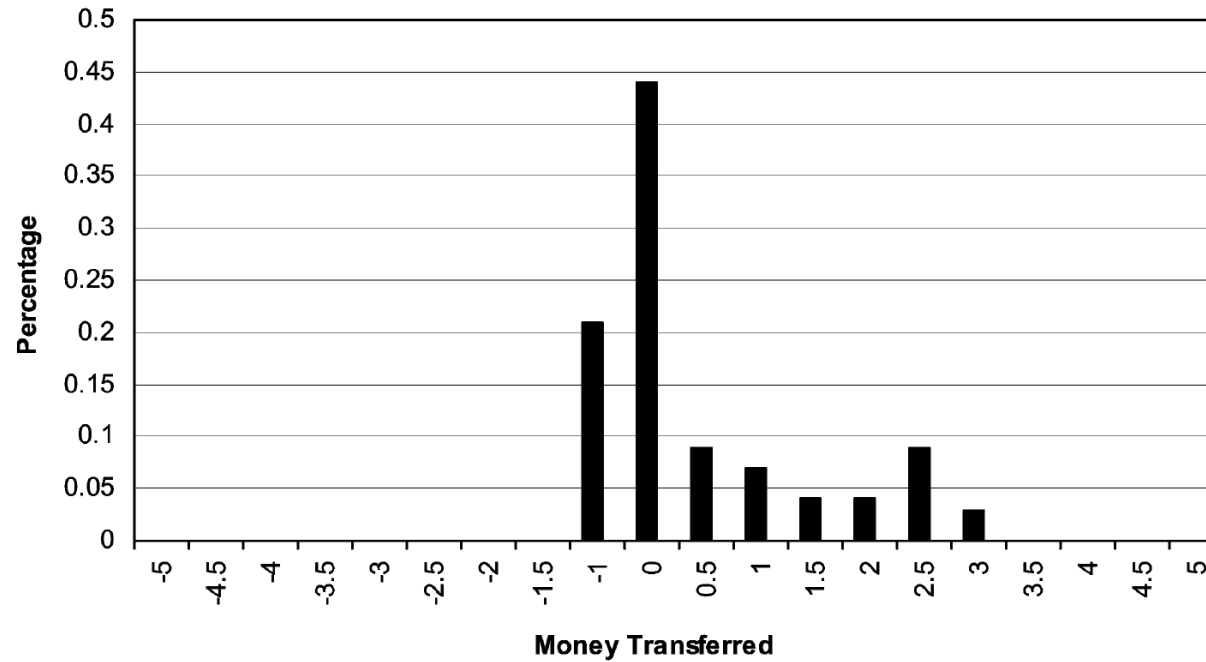
Treatment Take ($1)

Fig. 2.—Treatment Take ($1) (data online table B2)

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This result shows that when one simply makes the action set symmetric nearly all giving vanishes. An interesting further result is that the data show that when the choice set is expanded, agents continue to avoid the most selfish allocation.
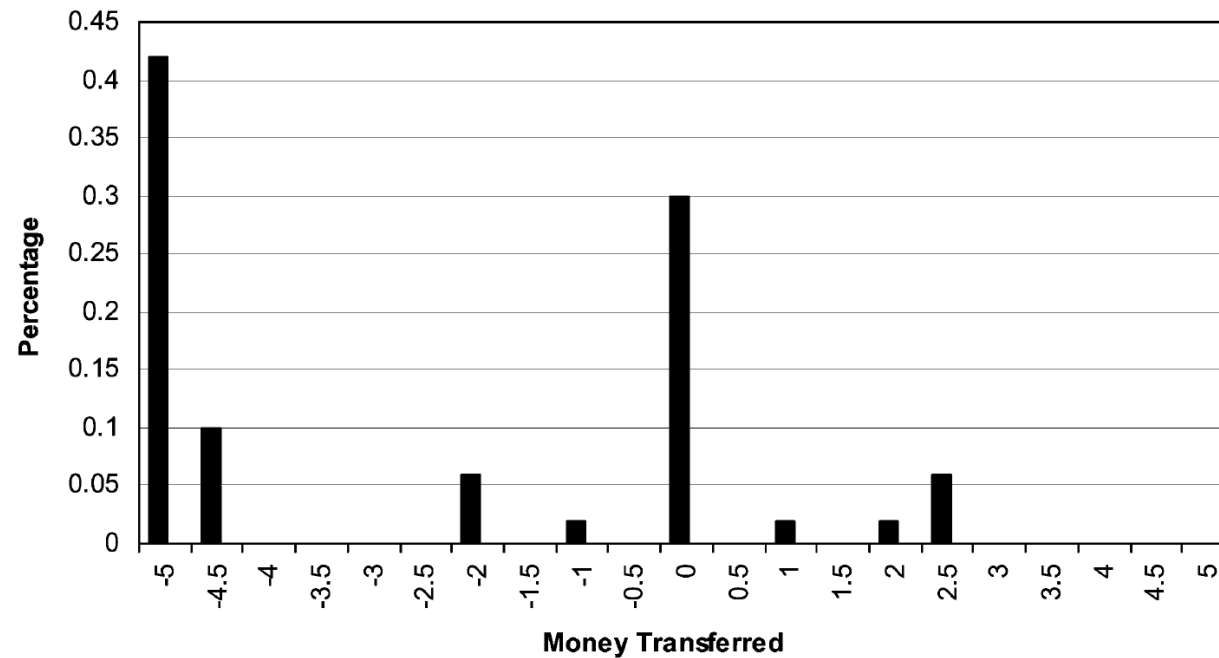
Fig. 3.—Treatment Take ($5) (data online table B3)

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Figure 4 shows that when individuals might view it as "morally wrong" to take or the social norm considerably changes, the vast amount of play (66 percent occurs at the neutral point, neither taking nor giving. In this case, only 13 of 47 individuals take, a significantly lower proportion than observed taking in Treatment Take ($5). This result, which is consonant with the results in List and Cherry (2007), highlights that simply changing the origin of endowment to one of earning money versus playing over "windfall" money causes a number of dictators to abstain from taking.

FIG. 4.—Treatment earnings (data online table B4)

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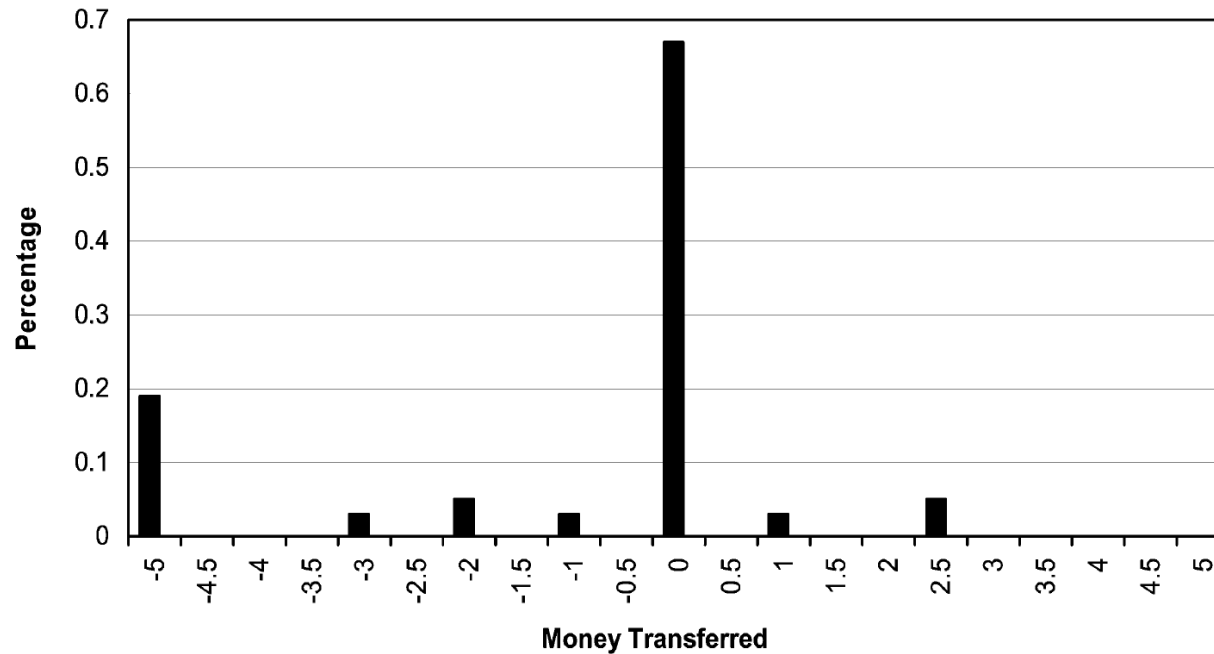The authors argue that there is a moral cost of behaving selfishly in such games that can move behavior away from the wealth-maximizing choice.

If one considers the moral cost to be fixed over the range of actions in this experiment, then the empirical results reveal that there are many more subjects for whom the cost is less than $5 than there are subjects for whom the cost is less than $1: nearly twice as many subjects take $5 in Treatment Take ($5) as take $1 in Treatment Take ($1).

Alternatively, in comparisons of the baseline results to those of the take treatments, there appears to be a different type of moral cost to not giving anything, which operates differently than taking everything. This represents a fruitful area for future research.

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II. Discussion

A recent surge of research in economics uses the laboratory as a tool to measure preferences. One stylized fact from this literature is that a majority of agents in standard dictator games pass a portion of their funds to an anonymous agent, and the amount is nontrivial—roughly **20 percent** of the endowment.

Utility theories that invoke social preferences have been forwarded to explain such data patterns. One puzzling feature of everyday life, however, is that even though scores of students around the world have outwardly exhibited their preferences for equality in laboratory experiments by sending anonymous cash gifts to anonymous souls (in some cases not even knowing that such a soul actually exists), why is it rare to find such data patterns in the extra-lab world?

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Action set

Origin of the endowment

The action set variation includes choices in which the dictator can take money from the other player. This simple manipulation permits me to trace out certain points along the "moral cost function." By crossing these treatments with a treatment wherein subjects earn their monies, I can effectively analyze an exogenous increase in the moral cost of taking since taking earned money is likely met with greater social disdain than taking the experimenter's money. Similar to Bardsley (2005), I find that such manipulations lead to drastic changes in behavior, since many fewer agents give money when the action set includes taking, and the earnings treatment leads to intuitive changes in behavior as well.

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Several lessons...

First, the data suggest that current interpretations of dictator game data likely need revision.

Rather than representing social preferences as currently modeled in the oftcited literature, the data are consistent with the power of changing the giver and recipient expectations. While a speculative interpretation, this follows from the choice sets functionally invoking different social norms. In this manner, the choice set is a particularly subtle way to influence expectations, but unduly powerful, in much the same way that expanding the choice set has been shown to influence choices in other settings, such as consumer purchases (see, e.g., Simonson 1989; Simonson and Tversky 1992).

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Several lessons…

Second, understanding how this change of expectation occurs is very important and **can potentially allow us to more accurately predict when we should expect generosity outside of the lab**.

Given the special features of the laboratory situation, one might wonder whether the dictator game has any useful parallels in the extra-lab world. It is true that few of us receive anonymous envelopes stuffed with cash, but in the standard dictator game, several reasons beyond the specificities of the choice set vary across the lab and the field.

Dangers of generalizing laboratory results

This fact underscores the dangers of generalizing laboratory results without a proper theoretical framework that accounts for both the psychological and economic properties of people and situations.

In much the same way that the experimental environment of the traditional dictator game induces subjects to give money to an anonymous recipient— an authoritative figure who has credibility in the eyes of the subjects inquires into whether they would like to share money with someone who did not receive as much money—when nature randomly pairs us with individuals in a field setting that suggests we are responsible for their well-being (an old lady crossing the street), our behavior accords with social norms.

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We must be more cognizant of using theory

One approach is to recognize explicitly the situational features that vary across environments and detail how they induce important behavioral changes (see, e.g., Harrison and List 2004; Levitt and List 2007).

Putting subjects on an artificial margin in the laboratory, for example, necessarily limits the ability of the experimenter to make direct inference about markets of interest. Indeed, if the experimenter does not understand how subjects react to such factors, invalid conclusions might be drawn. We can, and should, however, explore to what extent this artificial margin influences behavior, for this knowledge is necessary to provide an empirical account of behavioral principles that are shared across domains.

How institutions affect behavior

One important insight gained in this regard is that range restrictions influence behavior in important and unexpected ways.

The need for future empirical efforts is clear, since further treatments are necessary to figure out what these restrictions mean for social preference models and what they teach us about related field applications.

We can learn something about giving in the "real world" from dictator games, and suitable manipulations will yield that fruit.

To Be Continued...

Thank you!