Altruism: Dictator Games and beyond

Summer 25

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Altruism: an old and fascinating issue

Behavior is normally described as altruistic when it is motivated by a desire to benefit someone other than oneself for that person's sake.

- *"[M]any souls are so compassionately disposed that, without any further motive of vanity or self-interest, they find an inner pleasure in spreading joy around them."*

  Immanuel Kant-*Grundlegung zur Metaphysik der Sitten*.

Important questions about altruism in social sciences

- Does it exist?
- Can it be pure? Or mixed with other feeling? How can it disentangled from them?
- How can it happen? And where it comes from?

Behavioral GT can help address these questions.

The dictator game as a starting point

Standard dictator game

Player 1 (the dictator) receives a budget of B tokens and decides how many tokens $s \in \{0, \ldots, B\}$ to transfer to player 2. If each token is worth x cents to either player, the final payoff profile is

$$(\pi_1, \pi_2) = ((B - s)x, sx).$$

Why this game is useful

- The recipient does not move: no rejection threat, no bargaining...
- Isolates **unilateral distributive choice**.

But the key measurement problem already appears here

- If a subject transfers $s > 0$, this rejects pure selfishness in this choice problem.
- It does not yet identify a unique motive or a unique "degree of altruism."

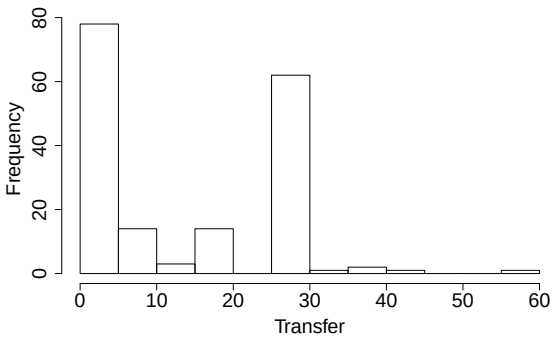
1. What dictator games reveal — and what they do not
2. A simple model of altruism in Dictator games
3. Taking games
4. Sorting games
5. Crowding out
6. References

What dictator games reveal — and what they do not

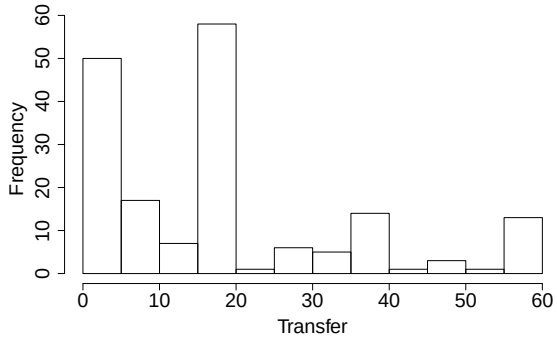
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Heterogeneous generosity

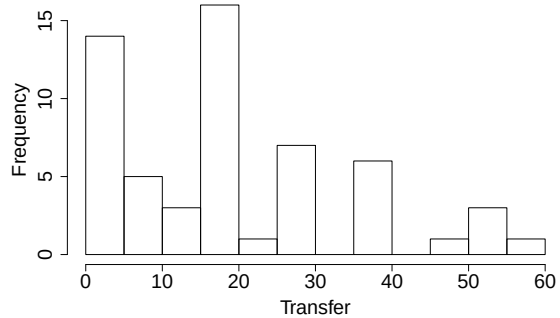
Andreoni and Miller (2002), rate 1:1



Andreoni and Miller (2002), rate 1:2



Harrison and Johnson (2006), rate 1:2



First Lesson: Subjects are not universally selfish: average transfers $\gg$ zero.

Second lesson: heterogeneity

- Engel's meta-study documents substantial heterogeneity in dictator giving *across* and *within* designs.
- hence, it is **not** that "people are generous," but that the universal selfish benchmark is empirically too narrow (Engel, 2011).

The role of observable characteristics

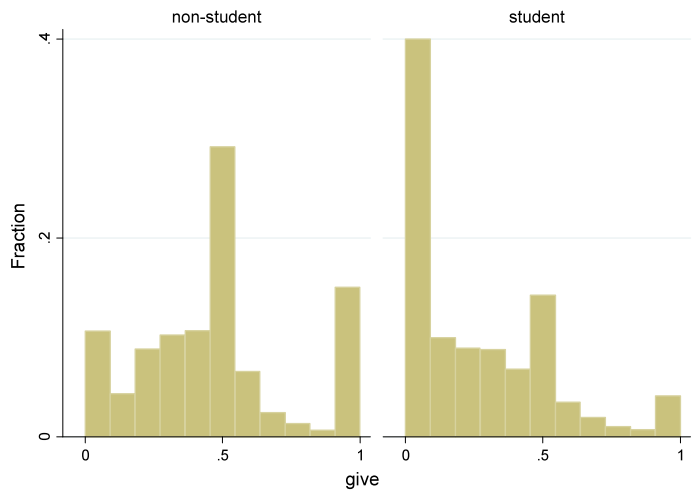


Fig. 8 Comparing students to non-students

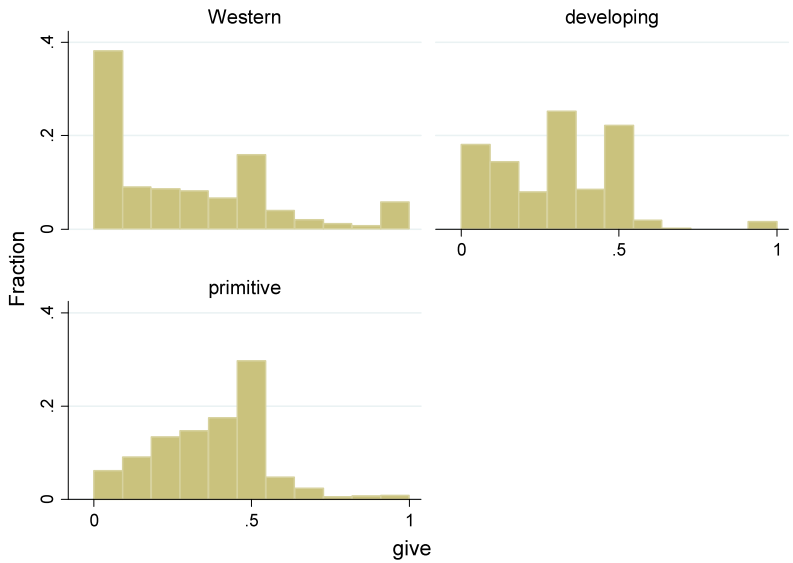


Fig. 9 Society of origin

Third lesson: giving depends partly on *who* is the dictator

- Observable subject characteristics explain part of the variation in giving, but large within-group heterogeneity remains.

$\Longrightarrow$ We should think in terms of **heterogeneous social preferences**, not just demographic averages (Engel, 2011; Fehr and Charness, 2025).

Meta-study: giving is heterogeneous

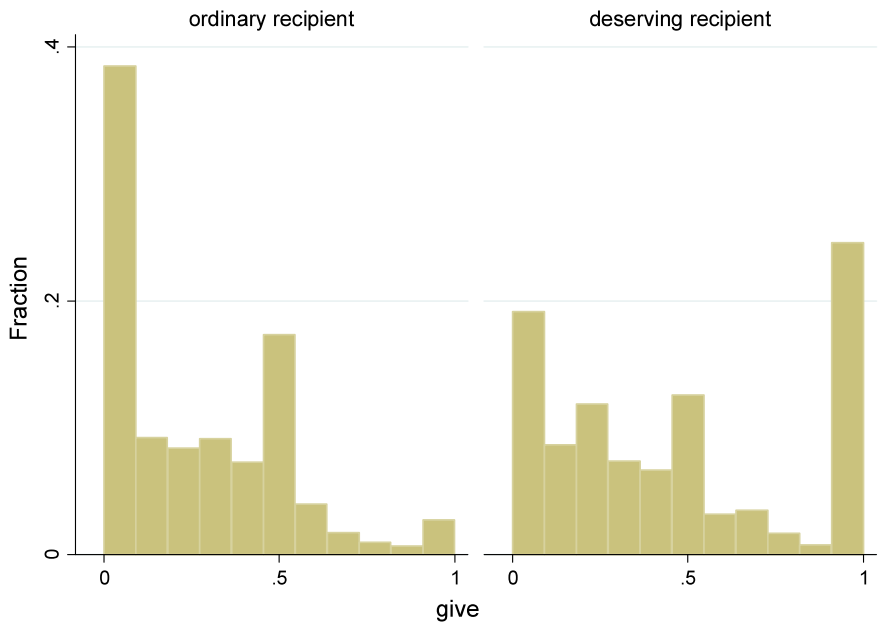


Fig. 4 Giving to a deserving recipient

Fourth lesson: Giving depends on who is the recipient

- ...and on how much the dictator knows about that person;
- Dictator games are therefore informative, but they already mix motives (Engel, 2011; Fehr and Charness, 2025).

Source (this and the following slides): Engel (2011)

Meta-study: design details move observed generosity

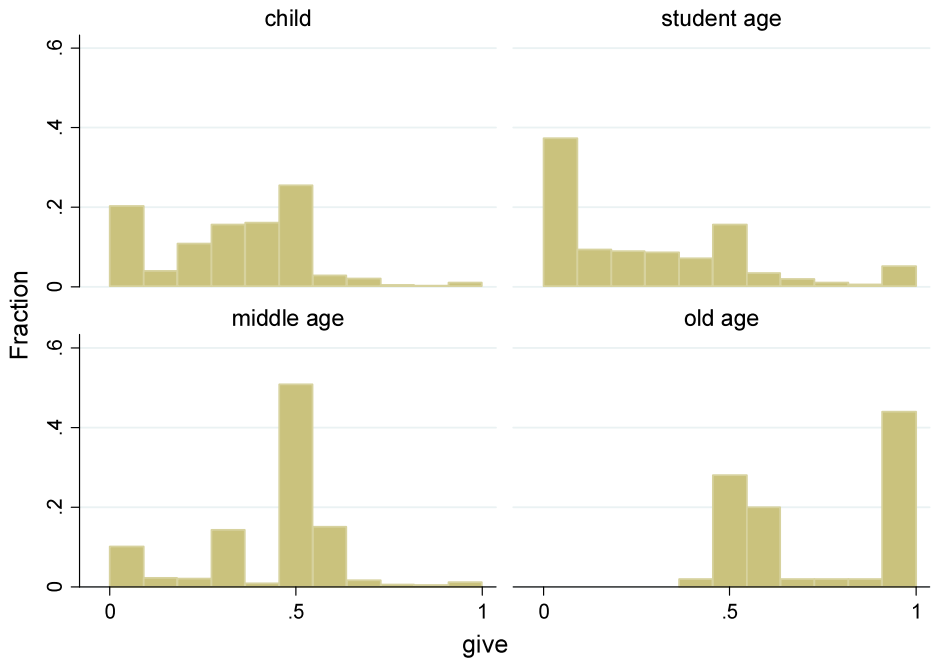


Fig. 10 Effect of age

Fifth lesson: Results are not design free

- Stakes, anonymity, framing, and implementation details can all move observed transfers.
- Dictator games are therefore useful measurement devices, but they are not design-free measurement devices (Engel, 2011).

Possible explanations for giving

A positive transfer is an outcome, not yet a motive.

- **Payoff altruism:** the dictator places positive weight on the recipient's payoff.
- **Distributional concern:** the dictator dislikes unequal allocations and therefore chooses more balanced outcomes.
- **Norms or deservingness:** the dictator follows a fairness rule or reacts to who the recipient is.
- **Noise and partial understanding:** a seemingly generous choice can also reflect weakly controlled choice, focality, or incomplete understanding of the task.

Immediate implication

- The same transfer s can be consistent with different underlying motives.
- To learn more, we need richer budget sets, repeated observations, and an explicit treatment of stochastic choice (Andreoni and Miller, 2002; Fisman et al., 2007; Breitmoser, 2013).

What is learned?

What DG do reveal

- Transfers above zero are common.
- The selfish benchmark is empirically incomplete.
- There is substantial heterogeneity across subjects.
- Recipient information and design features matter.

What they do not reveal

- a unique motive behind a transfer,
- a unique "degree of altruism" from one decision,
- whether observed generosity is stable across tasks,
- how much of behavior is utility-driven rather than noisy.

To go beyond stylized facts, we now model utility directly over payoff profiles.

- Only then can we ask whether observed dictator choices are internally consistent and how much stochastic choice distorts what we infer (Andreoni and Miller, 2002; Fisman et al., 2007).

Modeling and testing altruism in DG

Altruism: Dictator Games and beyond

How should utility over money look?

Key object of study: we want to interpret the preferences of players $\succsim_1$ and $\succsim_2$ over allocations

$$\pi \equiv (\pi_1, \pi_2)$$

Contrary to the standard setting we may have

$$(\pi_1, \pi_2) \succsim_1 (\pi_1', \pi_2') \quad \textbf{while} \quad \pi_1 < \pi_1'$$

We want that there be an increasing utility function u_i representing such preferences:

$$\pi \succsim \pi' \iff u_i(\pi) \geq u_i(\pi')$$

This amounts to assuming that $\succsim_i$ is complete, transitive, continuous, and monotonic (cf. winter course).

When do choices count as consistent?

Standard axioms

- **Completness:** For all payoff profiles $\pi', \pi'' \in \mathbb{R}^2_+$, either $\pi' \succeq \pi''$ or $\pi'' \succeq \pi'$.
- **Transitivity:** if $\pi' \succeq \pi''$ and $\pi'' \succeq \pi'''$, then $\pi' \succeq \pi'''$.
- **Continuity:** small changes in payoffs do not cause arbitrary jumps in rankings.
- **Monotonicity (or Pareto optimality):** If $\pi_i = \pi'_i$ and $\pi_{-i} \geq \pi'_i$, then $\pi \succsim \pi'$.

Under these axioms, there exists a utility function $u : \mathbb{R}^2_+ \to \mathbb{R}$ such that

$$\pi' \succeq \pi'' \quad \Longleftrightarrow \quad u(\pi') \geq u(\pi'').$$

Question 1: are choices in experiments compatible with this?

How can we detect inconsistencies?

In practice, we observe choices between different menus $\Pi, \Pi' \ldots$.

We say that: choices reveal

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We say that: choices reveal

$\pi \succsim \pi'$, if π is chosen while π' is available in some Π

$\pi \succ \pi'$ if $\pi \succsim \pi'$ but not $\pi' \succsim \pi$.

If we want a utility function to exists, the following must hold:

SARP: indirect inconsistency

If choices reveal $\pi^1 \succsim \pi^2, \ldots,$ and $\pi^{n-1} \succsim \pi^n$, then choices cannot reveal $[\pi^n \succ \pi^1]$.

This means that the revealed preference relation contains no cycles.

$\Rightarrow$ The data are consistent with a utility function (i.e., a transitive preference relation).

Classical utilities

Linear utility

$$u(\pi) = (1-\alpha)\pi_1 + \alpha\pi_2$$

- constant trade-off
- corner solutions
- α: selfish ($=0$), altruistic (>0), spiteful (<0)

Cobb–Douglas

$$u(\pi) = \pi_1^{1-\alpha}\pi_2^{\alpha}$$

- both payoffs valued
- interior allocations

Leontief / maximin

$$u(\pi) = \min\{\pi_1, \pi_2\}$$

- no substitutability
- equalization focus

Interpretation

Different utility forms generate different giving patterns:

- corner choices (linear)
- partial giving (Cobb–Douglas)
- equal splits (Leontief)

CES utility: a unified framework

CES utility

$$u(\pi) = \left((1-\alpha)\pi_1^{\beta} + \alpha\pi_2^{\beta}\right)^{1/\beta}$$

Nesting special cases

- $\beta = 1$: linear utility
- $\beta \to 0$: Cobb–Douglas
- $\beta \to -\infty$: Leontief

Economic interpretation

- α: weight on other's payoff
- β: willingness to substitute payoffs

Key insight

CES separates two dimensions of social preferences:

- **how much** subjects care about others (α)
- **how they trade off** own vs. others' payoffs (β)

(Andreoni and Miller, 2002; Fisman et al., 2007)

What these utility forms mean economically

Weight on the recipient (α)

- determines **how much the other person matters**
- higher $\alpha \Rightarrow$ higher willingness to give

Interpretation:

- **altruism**: utility directly includes the recipient's payoff

Substitutability (β)

- determines **how easily payoffs are traded off**
- lower $\beta \Rightarrow$ less substitutability
- low $\beta \Rightarrow$ push toward **equal splits**

Interpretation:

- **distributional concern**: dislike of unequal allocations

Indentification problem

Giving can reflect either:

- altruism (high α), or
- inequality aversion (low β).

A transfer of 30 out of 100 need not mean "30% altruism."

- It may reflect a high weight on the other person,
- a strong concern for equality, or both.

$\Longrightarrow$ Hence, we need richer data: Generalized dictator games (Andreoni and Miller, 2002; Fisman et al., 2007; Breitmoser, 2013).

Generalized dictator games (GDG)

Player 1 has a budget of B tokens and can transfer $s \in \{0, 1, \ldots, B\}$ tokens to player 2. Each token is worth τ_1 to player 1 and τ_2 to player 2. If player 1 transfers s tokens, the payoff profile is

$$\pi(s) = \big(\pi_1(s), \pi_2(s)\big) = \big((B - s)\tau_1,\ s\tau_2\big) \in \mathbb{R}^2_+.$$

What's the point?

- They vary both the **budget** and the **price of giving**, i.e. the ratio τ_1/τ_2.
- We can observe how subjects respond when giving is more/less expensive.
- Multiple choices per subject help identify preference structure.

Basic comparative-static hypothesis

- Transfers should tend to increase with B and τ_2, and decrease with τ_1.

SARP under the GDG

SARP: indirect inconsistency

If choices reveal $\pi^1 \succsim \pi^2$, ..., and $\pi^{n-1} \succsim \pi^n$, then choices cannot reveal $[\pi^n \succ \pi^1]$.

Consistency with SARP

- Andreoni and Miller (2002): with 8 choices per subject, only a minority of subjects violate SARP, and most violations are mild.
- Fisman et al. (2007): with many more choices per subject, violations are more common, but still far below what random behavior would generate.

Conclusion

Generalized dictator-game choices are much too structured to be random, but not structured enough to ignore noise.

Fisman et al. (2007): subjects respond to prices

Set-up 76 subjects, 50 tasks per subject;

- budgets and price ratios are drawn randomly;
- choices are made via a graphical user interface.

- As giving becomes cheaper for the dictator, transfers generally rise.
- The broad pattern is systematic, but heterogeneity is substantial and many subjects still bunch at salient allocations.

Andreoni and Miller (2002): round numbers matter

Set-up 176 subjects, 8 tasks per subject; choices are entered on a response form;

- budgets, prices, and equal-payoff allocations are often "round" numbers.
- Subjects do react to the price of giving, so choices are not arbitrary.
- But salient response values and round-number equal splits create focal points that can distort inferred comparative statics.

More generally across designs: we observe

- Effects of implementation Harrison and Johnson (2006): who receives (self, other, third party, experimenter) changes the result;
- Effects of the interface Breitmoser (2017).

Classification (Andreoni and Miller, 2002)

- A CES fits behavior reasonably well, but subjects are far from homogeneous.
- The data contain roughly selfish, egalitarian, and intermediate types rather than one representative "altruistic" decision maker.
- A single transfer is thus a poor summary statistic for social preferences.

TABLE III

SUBJECT CLASSIFICATION BY PROTOTYPICAL UTILITY FUNCTION

	Fit		
Utility Function	Strong	Weak	Total
Selfish	40	43	83 (47.2%)
Leontief	25	28.5[a]	53.5 (30.4%)
Perfect Substitutes	11	28.5[a]	39.5 (22.4%)

[a] One subject was equidistant from strong Leontief and Substitutes.

Why deterministic choice is not enough

In these results choices are NOT fully:

- random: subjects respond to changes in prices and budgets.
- deterministic: a subject may choose different allocations across similar tasks.

$\Longrightarrow$ not surprising, but requires interpretation.

Where can such deviations come from?

- Choice noise: subjects make occasional mistakes.
- Coarse elicitation: the response grid makes some allocations easier to choose.
- Presentation effects: ordering and salience influence observed behavior.

Main implication

If we ignore stochastic choice, we risk attributing noise, focality, or design effects to preferences themselves. This is why structural work on dictator games typically combines utility models with an explicit stochastic-choice model (Breitmoser, 2013, 2016, 2017).

What dictator games can and cannot identify

What dictator games can identify

- Pure selfishness is too narrow: positive transfers $\gg 0$
- Subjects differ systematically in trading off own/others' payoffs.
- GDG: meaningful comparative statics w.r.t to budgets and relative prices.

$\Longrightarrow$ Utility-based models over payoff profiles are empirically useful.

What dictator games don't identify

- A single transfer does not reveal a unique motive.
- Observed giving does not map into a unique "degree of altruism."
- Standard designs do not by themselves separate stable preferences from focality, noise, or design effects.
- Robust inference requires multiple budget sets, repeated observations, and an explicit stochastic-choice model

Three robustness tests

We relax one simplification of the standard dictator game at a time.

Taking games: the allocator can not only give, but also take.
Question: does positive giving survive once the action set becomes less morally one-sided?

Sorting games: the allocator can avoid the distributive choice or sort out of the interaction.
Question: do some subjects prefer not to face the social decision at all?

Crowding out: part of the transfer is generated externally rather than voluntarily.
Question: if only final payoffs matter, should imposed redistribution not fully replace voluntary transfers?

Each block changes the meaning of the action while keeping the underlying distributive conflict recognizable.

Taking games

Altruism: Dictator Games and beyond

Why taking is a demanding robustness test

In the standard dictator game, the allocator chooses a transfer $t \in [0, \bar{t}]$.

In a taking game, she chooses $t \in [-\underline{t}, \bar{t}]$: she can take.

If subjects had stable preferences over final payoff allocations only, then enriching the menu by adding taking options should not make positive giving disappear.

Intuition:

- If

$$\text{giving } 1 \succsim \text{giving } 0,$$

  then adding the option of *taking 1* should not reverse that ranking.

- Empirically, taking games are a direct test of whether dictator-game giving reflects stable altruistic preferences or something more context-sensitive.

This is the central challenge raised by List (2007) and Bardsley (2008).

List (2007)

Overview

- Four treatments, budget of 1 is \$5

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- T4: as T3, but incomes are earned

List (2007)

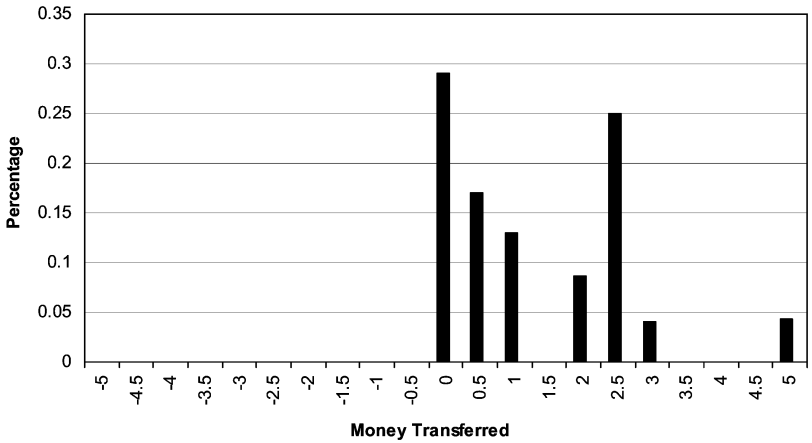


FIG. 1.—Baseline treatment (data online table B1)

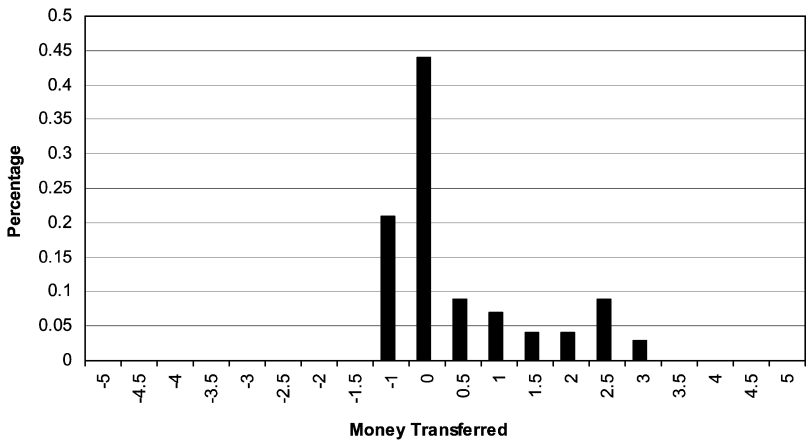


FIG. 2.—Treatment Take ($1) (data online table B2)

Overview

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T1 vs. T2

- Option -1 is added, probabilities of choices $t > 0$ decrease, relative probabilities remain similar (compatible with IIA)
- But: Probability of $t = 0$ increases (violates IIA)

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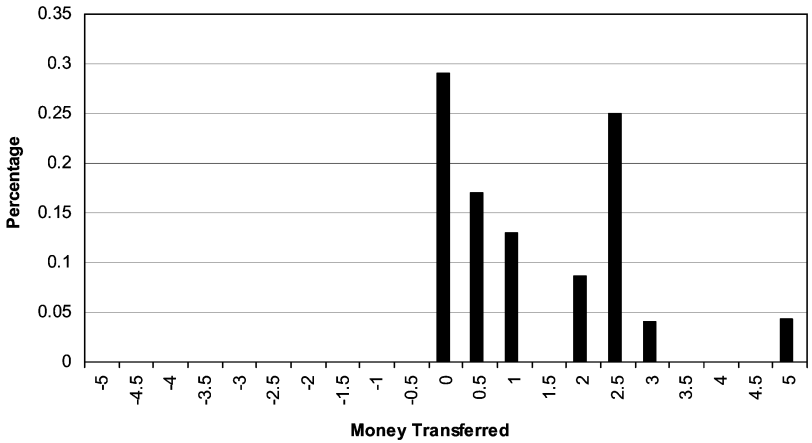


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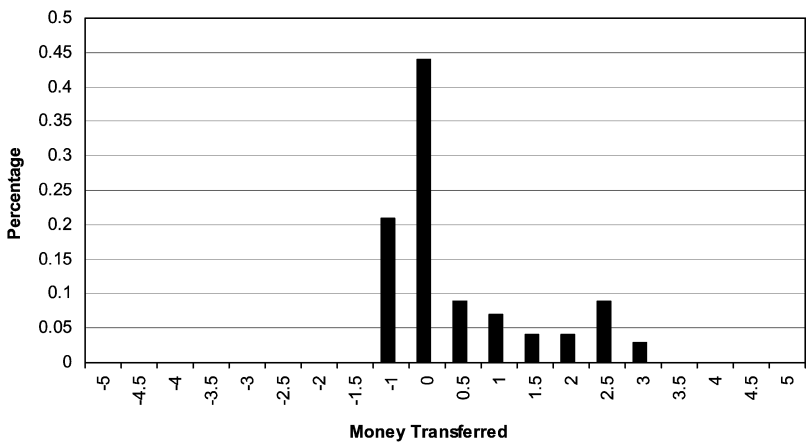


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- But: Probability of $t = 0$ increases (violates IIA) – but is plotting error! Bars -1 and 0 switched

Allowing taking sharply reduces positive transfers

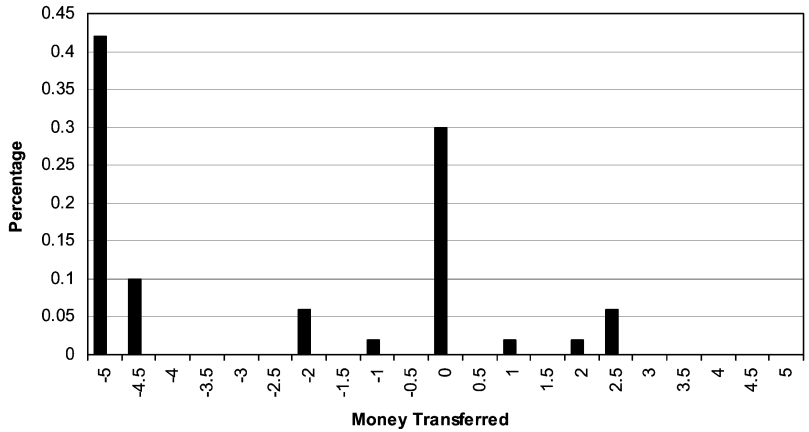


FIG. 3.—Treatment Take ($5) (data online table B3)

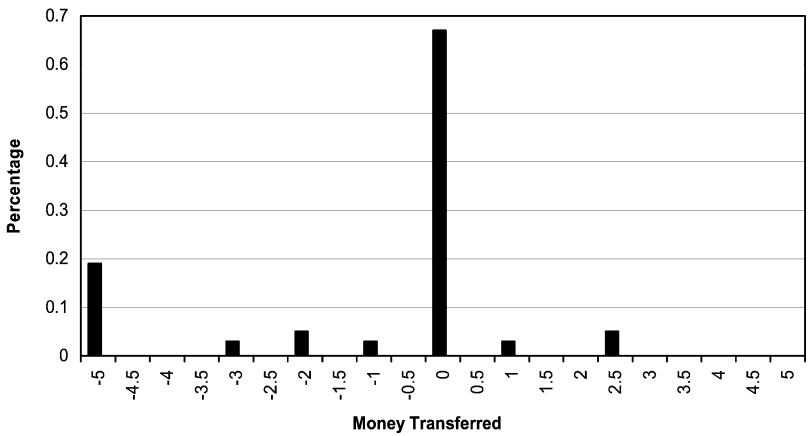


FIG. 4.—Treatment earnings (data online table B4)

Overall results

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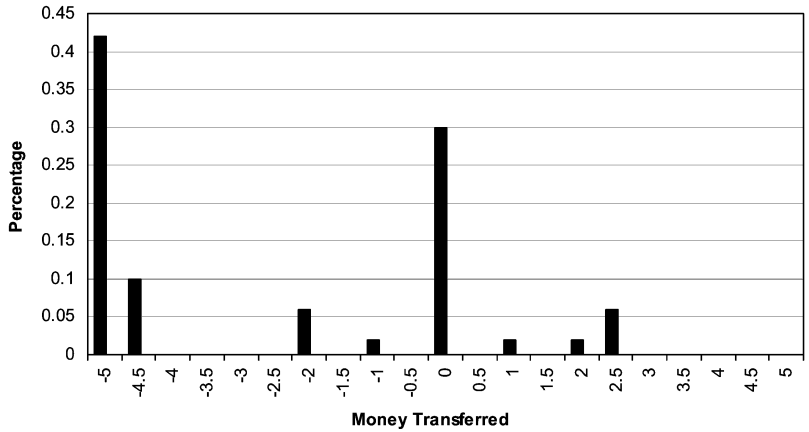


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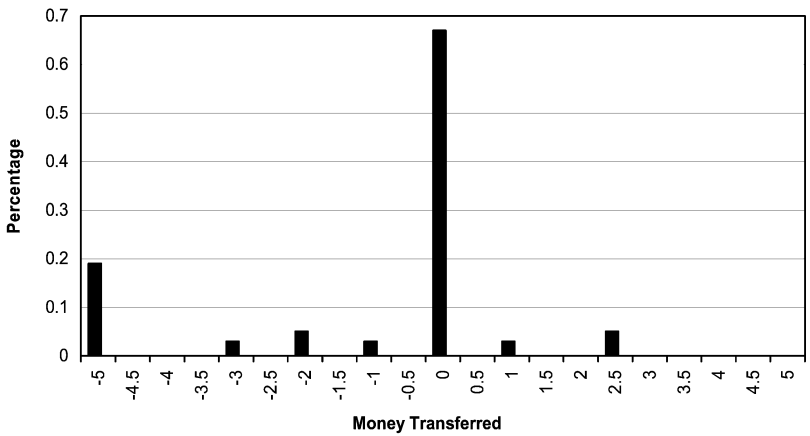


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- Share of subjects giving $t > 0$ drops drastically as range of taking options is extended
- From 71% in T1 to 10% in T3

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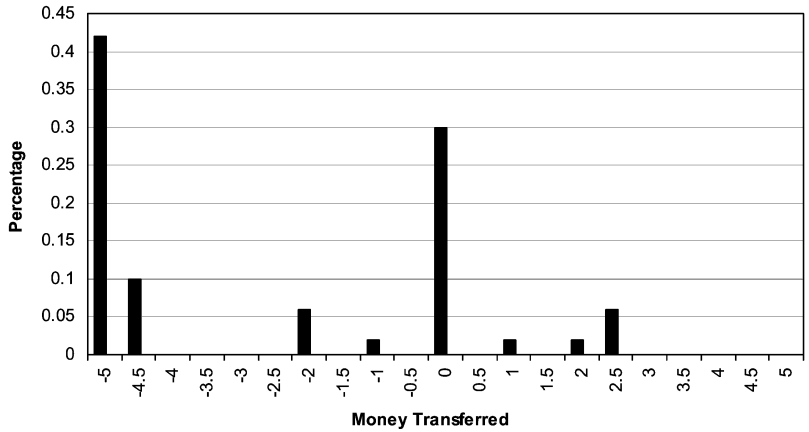


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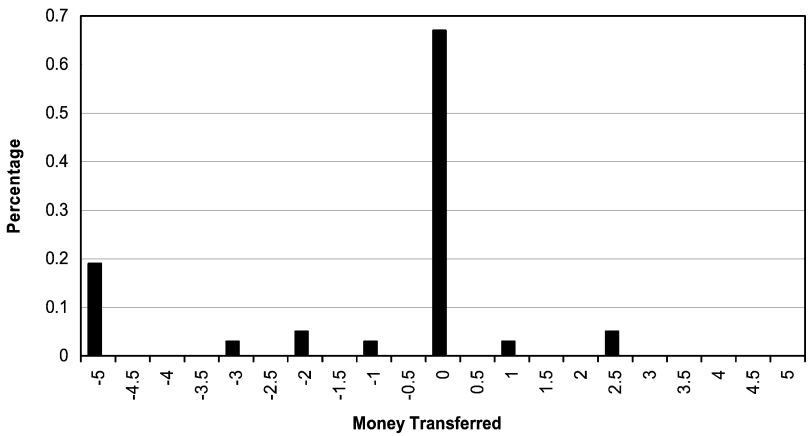


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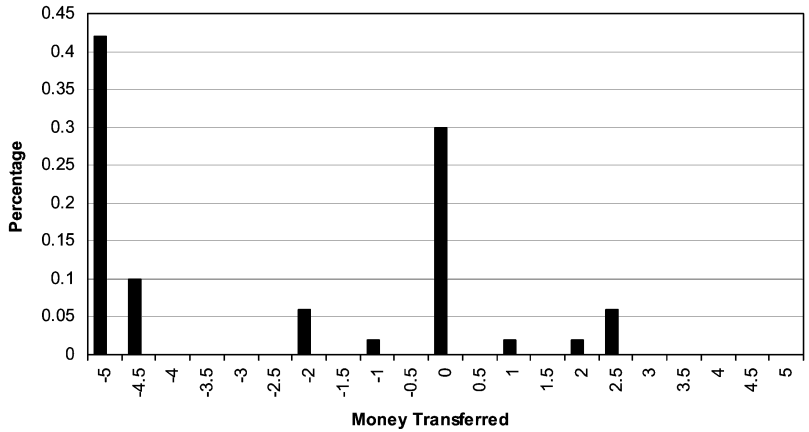


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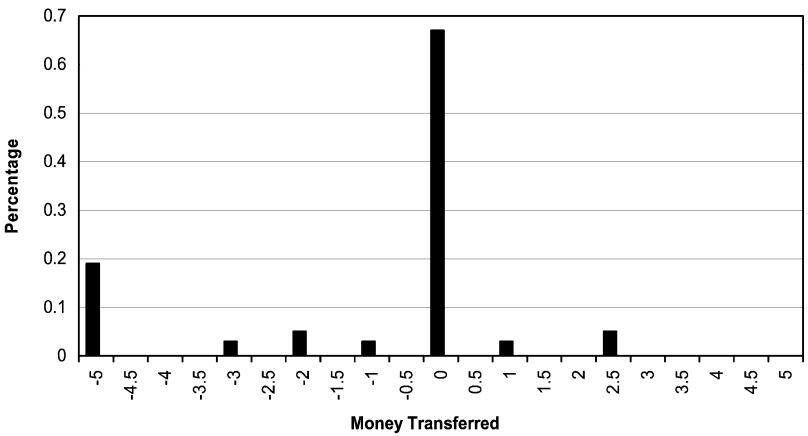


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Overall results

- Share of subjects giving $t > 0$ drops drastically as range of taking options is extended
- From 71% in T1 to 10% in T3
- Less "taking" in T4, where incomes are earned
- Massive concentration of choices in T3,T4
- Round number effect

What taking games falsify — and what they do not

Taking games do not show that social preferences are absent. But they do reject a simple interpretation of standard dictator-game evidence.

What is hard to maintain

A model in which behavior is driven only by stable utility over final payoff allocations, with the same interpretation across menus and protocols.

- In a standard DG, choosing $t = 0$ means "I do not give".
- In a taking game, choosing $t = 0$ can instead mean "I refrain from taking".
- Thus the same final allocation can correspond to different actions, and those actions appear to have different behavioral meanings.
- For measurement, this implies that social-preference estimates from one protocol need not transport cleanly to another (Grech and Nax, 2020; Breitmoser, 2013, 2017).

How can we explain the taking-game effect?

Suggested reading: Allocations alone are too coarse to describe the choice pb.
$\Longrightarrow$ Adding taking changes the social or moral meaningof carried by choice.

1. **Norm-based preferences**: *Social appropriateness* depends on the available actions: not taking may already count as fair (Krupka and Weber, 2013).

2. **Image and signaling**: If taking is possible, a dictator may *signal* fairness by not exploiting rather than giving (Andreoni and Bernheim, 2009).

3. **Presentation, reference points, and focality:** Menus with negative options can change perceived ownership, the reference point, and the salience of round or focal choices (Grech and Nax, 2020; Breitmoser, 2017).

4. **Experimenter demand:** A standard DG may implicitly suggest that giving is what one is "supposed" to do (Zizzo, 2010).

Sorting games

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Why sorting is a different robustness test

Taking games changed the action set: subjects could give, do nothing, or take.

Sorting games change something else:

- subjects may be able to avoid the distributive choice altogether,
- or sort into / out of environments in which sharing is possible.

What's the point?

If generosity in dictator games reflects stable utility over final payoff allocations, then the mere possibility of avoiding the decision should have limited effect.

But if some people give only reluctantly, or only because the situation makes selfishness look bad, then exit and sorting options should matter a lot.

- Standard dictator games force subjects to face a morally loaded choice.
- Sorting games test whether some subjects prefer not to face that choice.
- This is a sharper challenge to outcome-based models than a simple change in the transfer menu.

Dana, Cain, Dawes (2006): Costly Exit

Treatment 1: Exit option (beliefs affected)

- After deciding, dictator can **exit**: take 9, recipient gets 0
- Recipient is **not told** the game existed if exit is chosen
- If dictator plays: recipient knows a choice was made

Treatment 2: Private (beliefs fixed)

- Same exit option
- Recipient **never knows** a dictator game existed (in all cases)

Dana et al. (2006): the key result is reluctant giving

- In Treatment 1, about one-third of dictators choose the \$9 exit.
- In Treatment 2, almost nobody chooses exit.
- Among those who remain in the sharing environment, giving is lower when the possibility of quiet exit is present.

Interpretation

Some dictators appear willing to share when forced to face the distributive decision, but prefer to avoid the decision when selfishness can be implemented quietly.

This is difficult for models that depend only on final payoffs:

- the exit outcome $(9, 0)$ is chosen even though the dictator game itself contains outcomes such as $(10, 0)$ and $(9, 1)$;
- hence the procedure and the recipient's beliefs matter, not only the final allocation.

Dana et al.'s own interpretation is that giving often reflects a desire not to violate others' expectations rather than concern for others' welfare per se.

What exactly do sorting games reveal?

The standard dictator game pools together at least three types of behavior:

1. subjects who genuinely prefer generous allocations;
2. subjects who dislike taking from others, but do not want to share actively;
3. subjects who share only reluctantly and would rather avoid the decision environment.

Sorting / exit options are informative because they help separate these margins.

- A gift in a forced DG does not necessarily mean *"I want to share"*.
- But rather *"If I have to choose, giving is the least uncomfortable action"*.
- Once exit is available, that distinction becomes visible.

Measurement lesson

The standard dictator game may overstate the amount of generosity that survives once subjects can choose the environment in which they act.

Related literature

The later literature broadly supports the idea that people use informational or procedural excuses to behave more selfishly, but it also sharpens the mechanism.

- Grossman (2014) shows that strategic ignorance is sensitive to how ignorance is implemented: passive ignorance is more behaviorally effective than actively choosing ignorance.
- **?** argue that "moral wiggle room" should be understood more precisely, with mechanisms including anticipated social-image damage, perceived social norms, and anticipatory guilt.
- tho Pesch and Dana (2024) show that attributional ambiguity can reduce charitable giving by weakening perceived norms against keeping money for oneself.
- Grossman and Hua (2026) review the literature and conclude that willful ignorance is robust across many settings, but strongly moderated by context and design.

Section take-away: some people share reluctantly

- Taking games showed that generosity is sensitive to the action set.
- Sorting games show that generosity is also sensitive to whether subjects must face the decision environment at all.
- Standard dictator-game behavior therefore mixes together
  - genuine generosity,
  - reluctant compliance,
  - and avoidance of morally awkward situations.
- This is bad news for context-free measurement, but good news for learning: it tells us exactly where richer models must do more work.

Bridge to the next block

So far we changed the menu and the environment. Next we change the source of redistribution and ask whether voluntary giving is crowded out by imposed transfers.

Crowding out

Altruism: Dictator Games and beyond

Why crowding out is a natural robustness test

So far, we changed

- the action set (taking games), and
- the possibility of avoiding the decision environment (sorting games).

We now change something different: the source of redistribution.

In a standard dictator game, all redistribution is voluntary. In a crowding-out design, part of the recipient's payoff is imposed by the experimenter.

Question

If dictators care only about final payoffs, should an imposed transfer not simply replace voluntary giving one-for-one?

- If yes, we should observe **full crowding out**.
- If not, then dictators may care not only about the final allocation, but also about the act of giving itself.

What pure outcome-based altruism predicts

Suppose the dictator has 10 initially and, in the baseline treatment, gives $g = 5$.

Now,assume the experimenter transfers $s = 1$ from the dictator to the recipient *before the dictator makes her own choice*.

- Prediction: If the dictator cares only about final payoffs then the dictator should reduce voluntary giving from 5 to 4.

Full crowding out

A \$1 imposed transfer should reduce voluntary giving by exactly \$1.

If the reduction is smaller, then the way redistribution occurs matters, not just the final outcome.

Classic evidence Bolton and Katok (1998)

- A transfer of \$3 imposed by the experimenter did not reduce private giving dollar-for-dollar.
- The imposed transfer crowded out only 73.7% of dictators' voluntary giving.

$\Longrightarrow$ the recipient's payoff rose by more than a pure final-payoff model would predict.

Interpretation

Dictators appear to value making a voluntary transfer themselves, rather than caring only about the final payoff vector.

This is the basic laboratory signature of **warm glow**:

- giving creates utility in its own right;
- imposed redistribution is thus an imperfect substitute for voluntary giving.

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