ECN 119: Economics and Psychology
Fairness

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Fairness

What if people care about others and not just themselves? Altruism and generosity, spite and punishment, envy and imitation: we live in a society, and so our feelings and our choices look naturally towards the people around us.

We will look at some of the key types of experiment that reveal social attitudes, including trust games, public goods contribution games, and the ultimatum game. We will study models of people who dislike inequality, who protect their friends, or want to fit in.

Fairness

In this section:

1. The ultimatum game
2. The dictator game
3. Trust games
4. Gift exchange
5. Preferences for redistribution
6. Fairness attitudes and norms
7. Public goods and conditional cooperation
8. Inequality aversion and other models
9. Social incentives and crowding out

Other-regarding preferences

A common assumption in standard economic theory is that the decision maker's preferences are exclusively self-regarding... but there are lots of reasons why people may have **other-regarding preferences**

- Altruism, charitable giving
- Fairness, justice, moral suasion
- Sanctions, punishment, ostracism
- Spite, envy
- Peer pressure, keeping up with the Joneses
- Fashions, trends

Selfishness

A tricky philosophical issue here is what counts as 'selfish'

- If I give to charity because it makes me feel good, is that selfish or selfless?
- This is a concept at the heart of Kantian moral philosophy (see the entry in the Stanford Encyclopedia of Philosophy for a starting point)
- Another question: do I have the right to object to the way you conduct yourself in private?

Canonical experiments

In this section we'll look at the most important classes of experiments in the literature on other-regarding preferences

- Ultimatum and dictator games
- Public goods contribution games
- Trust games

The ultimatum game

Two players, 1 and 2. \$10.

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  - *Accept*: the proposed division happens, and the game ends.
  - *Reject*: neither player gets anything, and the game ends.

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What do you predict will happen?

The dictator game

Two players, 1 and 2. \$5.

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- What do you read in these stats?
- One interpretation: shows that people preference for fairness and preference for punishment of those who they think are being unfair.
- Why? They are willing to give up something they like (cash) for more of those things.

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Is this *rational*?

Four regularities in the ultimatum game

Following Fehr and Schmidt (1999):

1. Offers above 50% are almost never observed
2. Almost all studies find the vast majority of offers between 40% and 50%
3. Offers below 20% are almost never observed
4. Low offers are often rejected and the probability of an offer being rejected is less when the offer is higher

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Bolton and Ockenfels (2000) seek to interpret ultimatum vs. dictator evidence

- Discrepancy between ultimatum and dictator games suggest this isn't a straight preference for equity
- Responder behavior seems to drive the gap between offers in the two types of game
- But it's not the case that dictators typically give zero

Summarizing ultimatum game studies (Fehr-Schmidt 1999)

Study (Payment method)	Number of observations	Stake size (country)	Percentage of offers with $s < 0.2$	Percentage of offers with $0.4 \leq s \leq 0.5$
Cameron [1995] (All Ss Paid)	35	Rp 40.000 (Indonesia)	0	66
Cameron [1995] (all Ss paid)	37	Rp 200.000 (Indonesia)	5	57
FHSS [1994] (all Ss paid)	67	\$5 and \$10 (USA)	0	82
Güth et al. [1982] (all Ss paid)	79	DM 4–10 (Germany)	8	61
Hoffman, McCabe, and Smith [1996] (All Ss paid)	24	\$10 (USA)	0	83
Hoffman, McCabe, and Smith [1996] (all Ss paid)	27	\$100 (USA)	4	74

Summarizing ultimatum game studies

Kahneman, Knetsch, and Thaler [1986] (20% of Ss paid)	115	\$10 (USA)	?	75[a]
Roth et al. [1991] (random payment method)	116[b]	approx. \$10 (USA, Slovenia, Israel, Japan)	3	70
Slonim and Roth [1997] (random payment method)	240[c]	SK 60 (Slovakia)	0.4[d]	75
Slonim and Roth [1997] (random payment method)	250[c]	SK 1500 (Slovakia)	8[d]	69
Aggregate result of all studies[e]	875		3.8	71

a. percentage of equal splits, b. only observations of the final period, c. observations of all ten periods, d. percentage of offers below 0.25, e. without Kahneman, Knetsch, and Thaler [1986].

Child dictators

Benenson, Pascoe, and Radmore (2007): 4, 6, and 9 year old subjects from British primary schools

- 360 total subjects; 2 high socioeconomic status schools (less than 5% get free lunches) and low SES schools (more than half students get free lunches)
- 30 boys and 30 girls at each age and SES
- At stake: stickers
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- At stake: stickers
- At most half of students in any class included—children aware that many classmates would not receive stickers
- Subject picks 10 from 30 stickers; they "treasured the stickers and selected them with great care"
- Then subject told they might like to give some stickers to another girl/boy who didn't get any

Benenson, Pascoe, and Radmore (2007)

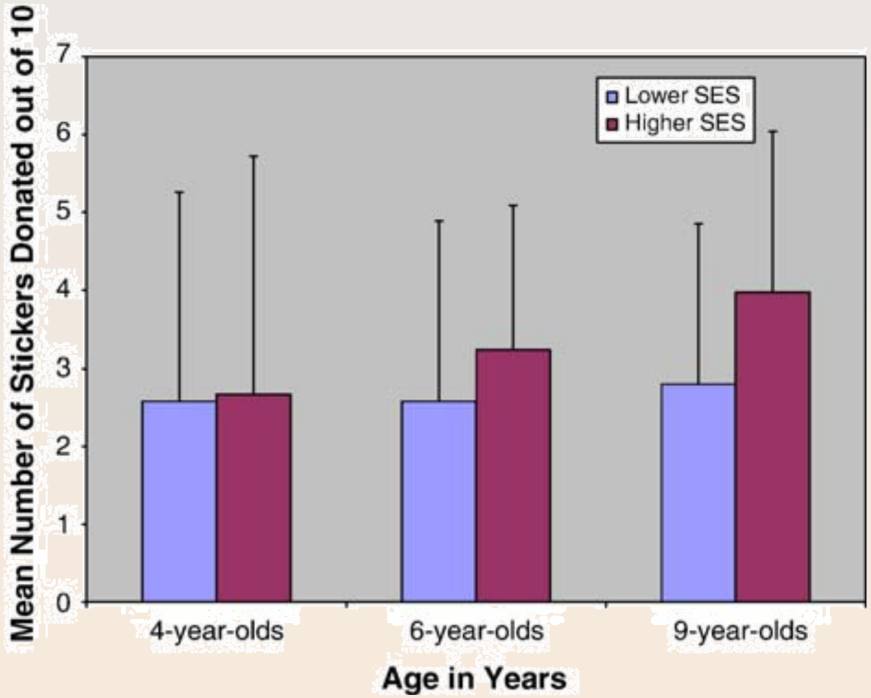

Fig. 1. The mean number (and standard deviation) of stickers donated to another classmate, by age level and SES, for the complete sample.

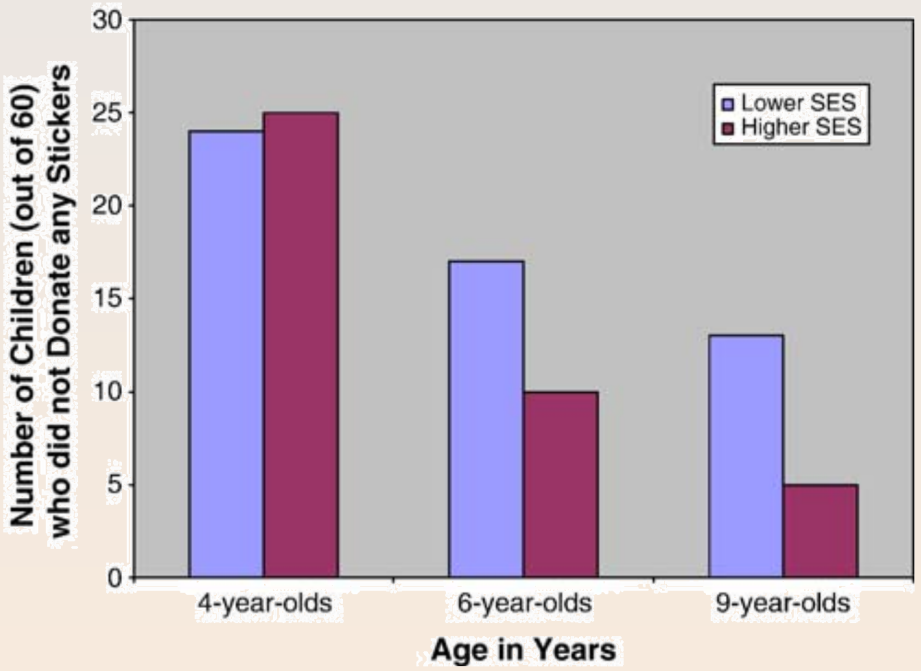

Fig. 2. Number of children who did not donate any stickers, by age level and SES.

Dictators under the hint of a face

Rigdon, Ishii, Watabe, and Kitayama (2009): putting the suggestion of a face in a 3 dot pattern associated with a change in behavior of male dictators

- Dictator's decision sheet has instructions, then three dots, then the place to record their decision
- Three dots either in a face-ish configuration or a non-face-ish configuration

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- Three dots either in a face-ish configuration or a non-face-ish configuration
- 58 dictators in face treatment, 55 control; UMichigan undergrads
- Random assignment to Dictator or Recipient; match anonymous and separated into different rooms after drawing
- One and only one dictator game played; this was known to subjects

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- Random assignment to Dictator or Recipient; match anonymous and separated into different rooms after drawing
- One and only one dictator game played; this was known to subjects
- Dictators also had a picture-completion task: the same three dots from their decision sheet and asked to use them to complete a picture
- All subjects asked questions about procedure-believability

Rigdon, Ishii, Watabe, and Kitayama (2009)

Money Allocation Sheet

You have received $5 for showing up on time.

You now have an additional $10 to allocate between you and the Receiver you are paired with in the other room (in $1 increments). Please record how much money you will keep for yourself, and how much you will allocate to the Receiver.

I will keep: $_____

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Total: $_10__

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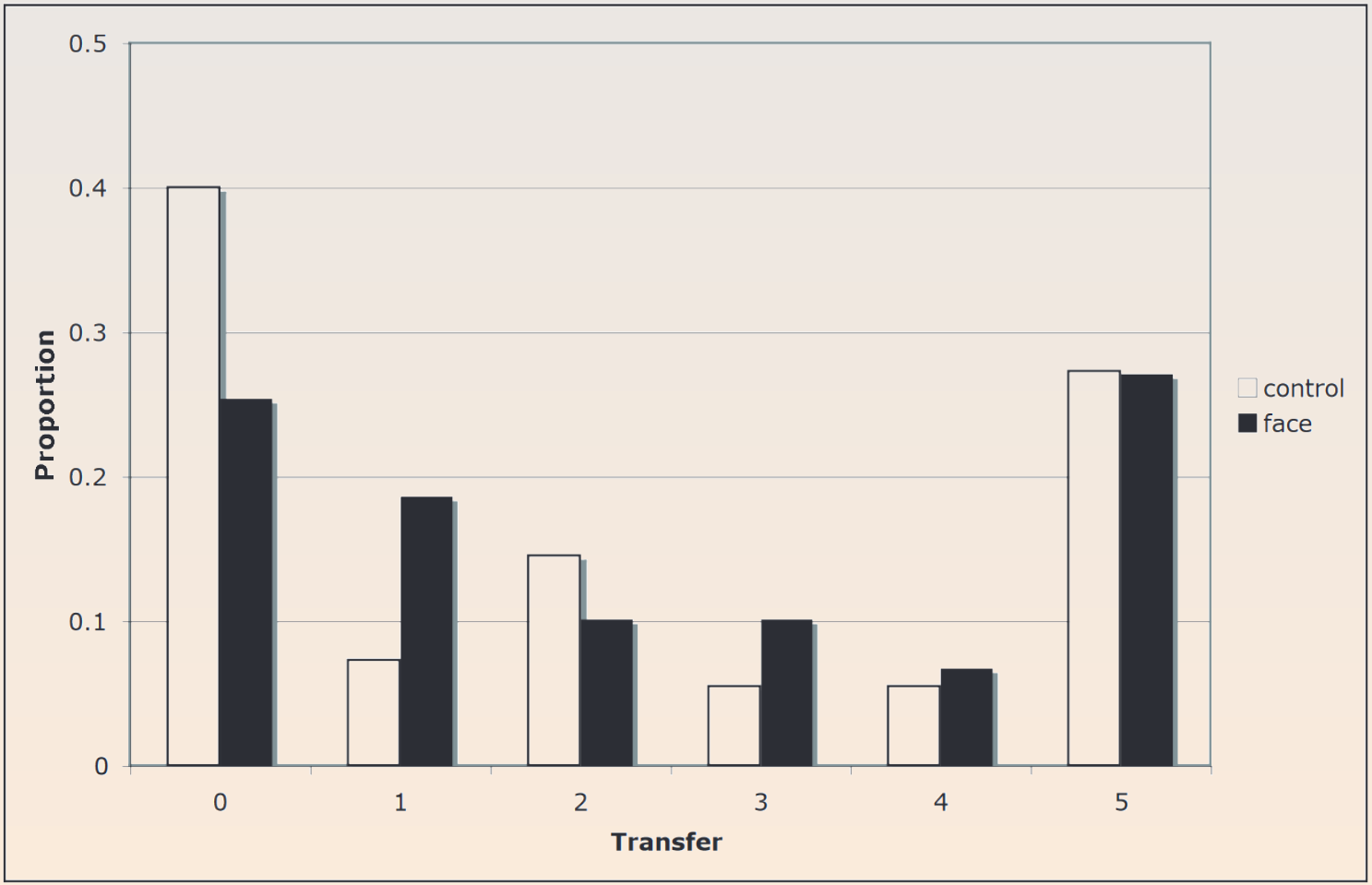

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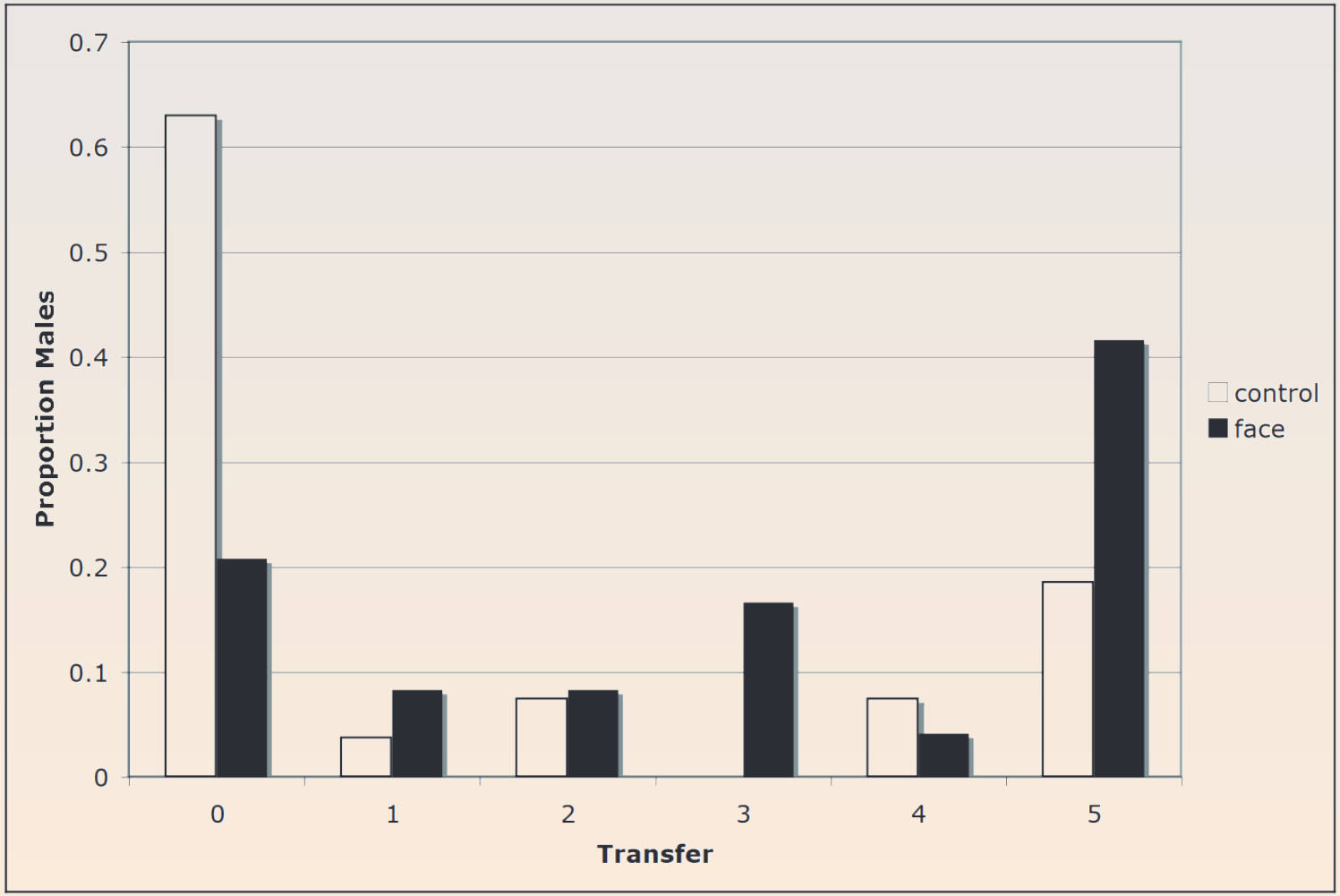

Figure 3: Distribution Transfers, Male Dictators

Rigdon, Ishii, Watabe, and Kitayama (2009)

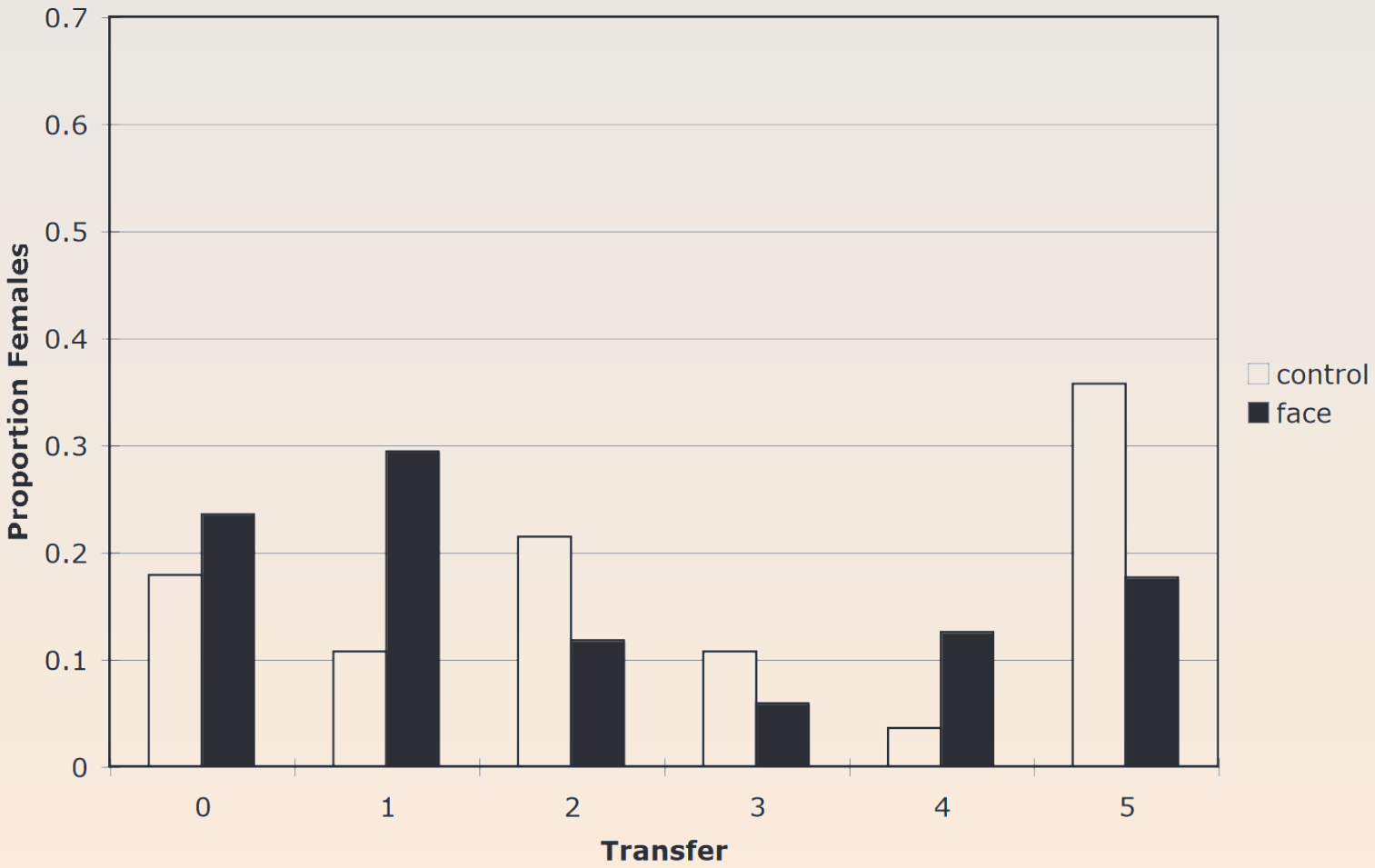

Figure 4: Distribution Transfers, Female Dictators

Dictators under the hint of a face

- Baseline consistent with Eckel & Grossman (1998) and Andreoni & Vesterlund (2001): women give more than men in double-blind dictator game (82% of women give $1 or more, men 37%)
- Authors hypothesize that women are more socially aware by default and so the minimal social cue affects men but not women
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- Face completion task: 58.63% of subjects in face treatment complete the dots with some kind of face; compare to 29% in control
- 11 subjects were econ majors, 5 in control, 6 in face
  - Of whom 9 sent $0
  - Excluding econ majors, there is a stat. significant effect across two treatments: 62% send more than $1 in control and 80.77% in face
- The subtle social cue of a face seems to bring men's transfers in up to the level of women's transfers

More on economists vs. non-economists

	Treatment Ey			Treatment P		
Allocation	A	B	C	A	B	C
Person 1 payoff	**21**	**17**	**13**	**14**	**11**	**8**
Person 2 payoff	**9**	**9**	**9**	**4**	**4**	**4**
Person 3 payoff	**3**	**4**	**5**	**5**	**6**	**7**
Total payoff	33	30	27	23	21	19
Average payoff of 1 and 3	12	10.5	9	9.5	8.5	7.5
Efficiency prediction	A			A		
Inequity aversion prediction			C			C
Rawlsian maximin prediction			C	A	or B	or C
(A) Economists: Berlin (E&S, 2004)						
Choices (absolute)	12	7	11	18	2	10
Choices (percent)	**40.0**	**23.3**	**36.7**	**60.0**	**6.7**	**33.3**
(B) Economists: Munich						
Choices (absolute)	72	12	25	63	16	30
Choices (percent)	**66.1**	**11.0**	**22.9**	**57.8**	**14.7**	**27.5**
(C) Noneconomists: Munich						
Choices (absolute)	22	13	48	21	17	45
Choices (percent)	**26.5**	**15.7**	**57.8**	**25.3**	**20.5**	**54.2**
(D) Noneconomists: Zurich						
Choices (absolute)				8	8	20
Choices (percent)				**22.2**	**22.2**	**55.6**
(E) Economists: Zurich						
Choices (absolute)	31	9	18	31	9	18
Choices (percent)	**53.5**	**15.5**	**31.0**	**53.5**	**15.5**	**31.0**
(F) Noneconomists: Zurich						
Choices (absolute)	61	23	78	53	25	84
Choices (percent)	**37.7**	**14.2**	**48.1**	**32.7**	**15.4**	**51.9**

Gender and political preferences

The preceding table comes from Fehr, Naef, and Schmidt (2006)

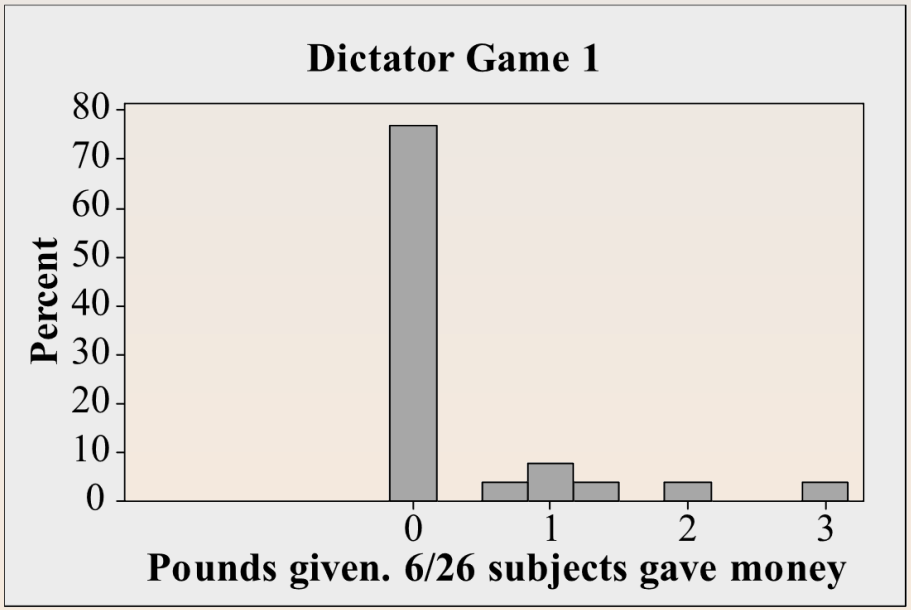
- The paper is in response to Engelmann & Strobel (2004) and replicates their experimental design with different subject pools
- Player 2 was the dictator: their payoff was the same in each of the three available options, but there was an efficiency-equity tradeoff for the amounts that the other two players would get
- Notice that the two treatments differ in the Rawlsian maxmin dimension...
- In their experiment, they also find a gender effect: women are more egalitarian than men
- But they find no effect of political preferences on choices in the distribution game

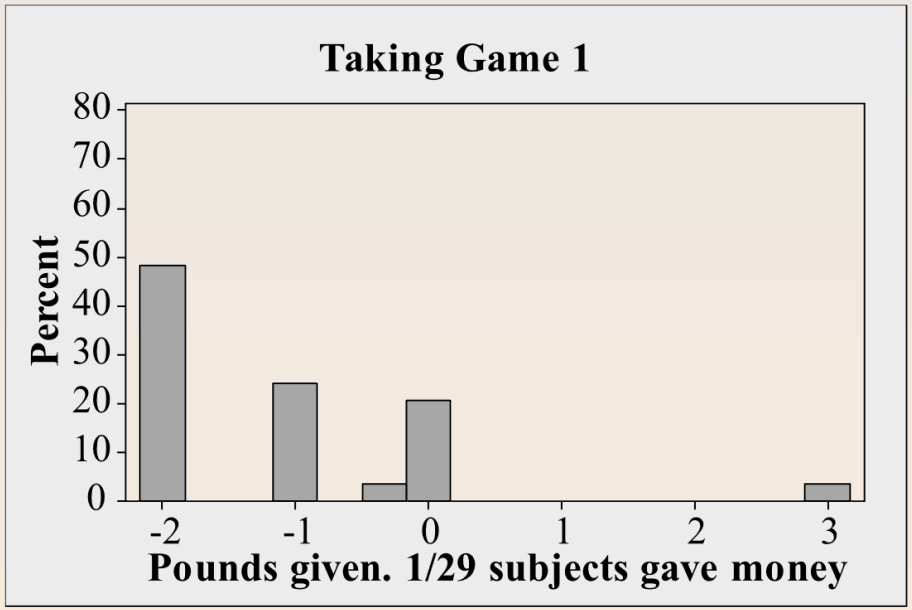
Dictating vs. taking

Bardsley (2008): generosity in a dictator game can be reversed by allowing subjects to take the counterpart's money

- Compare dictator game treatment with 'taking game' treatment
- Three experiments:
  1. Equal endowments 6 GBP; subjects in T1 could transfer 0-4 GBP, transfers doubled; subjects in T2 could transfer 0-4 GBP or take 0-2 GBP, also doubled (i.e. getting 1 GBP costs partner 2 GBP)
  2. Both get 4 GBP for showing up; dictators start with extra 7 GBP, can give 0-7 GBP in T1; can give 0-7 GBP or take 0-2 GBP in T2; transfers 1:1 rather than doubled
  3. Dictators have endowment 10 GBP, recipient 5 GBP; can give 0-3 GBP in T1; can take 0-3 GBP in T2
- Would be tough to reconcile changes in proportion giving across treatments
- Under IIA and outcome-based other-regarding preferences should see no decline in giving... but framing effects...

Bardsley (2008)

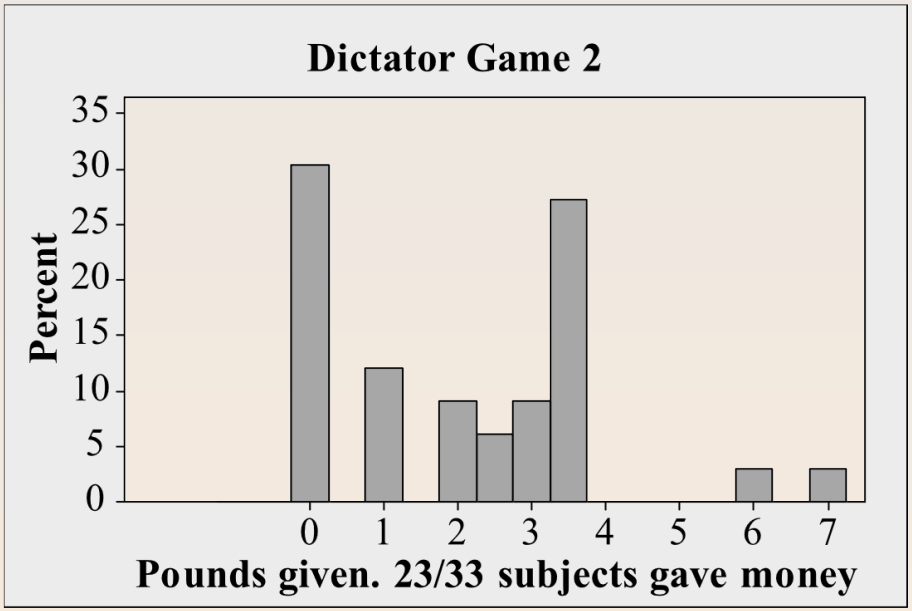


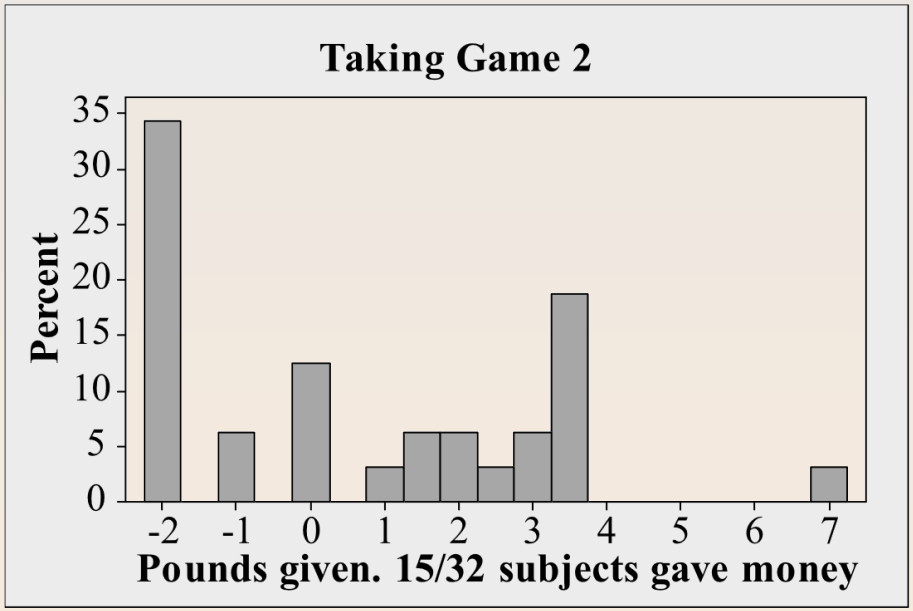


T1 T2

Experiment 1

Bardsley (2008)

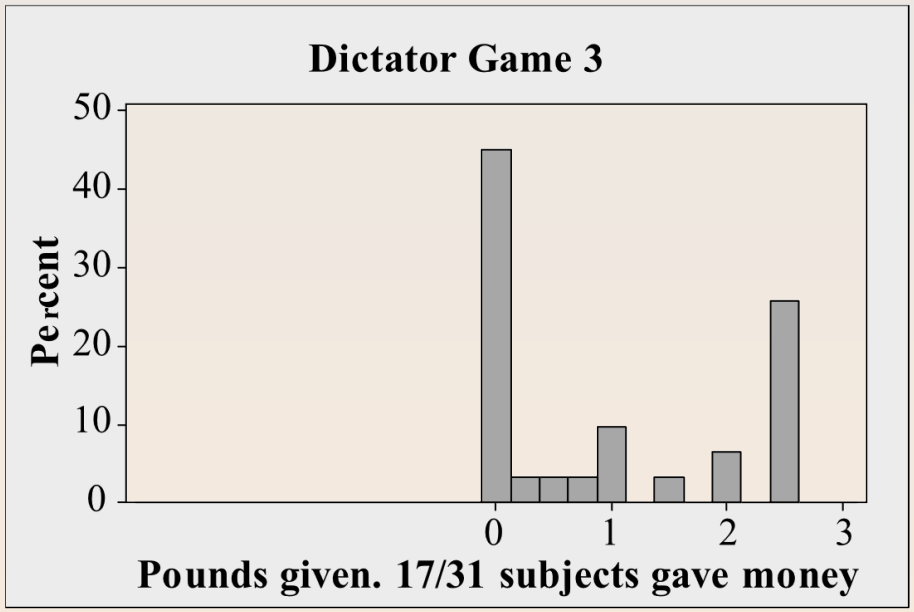




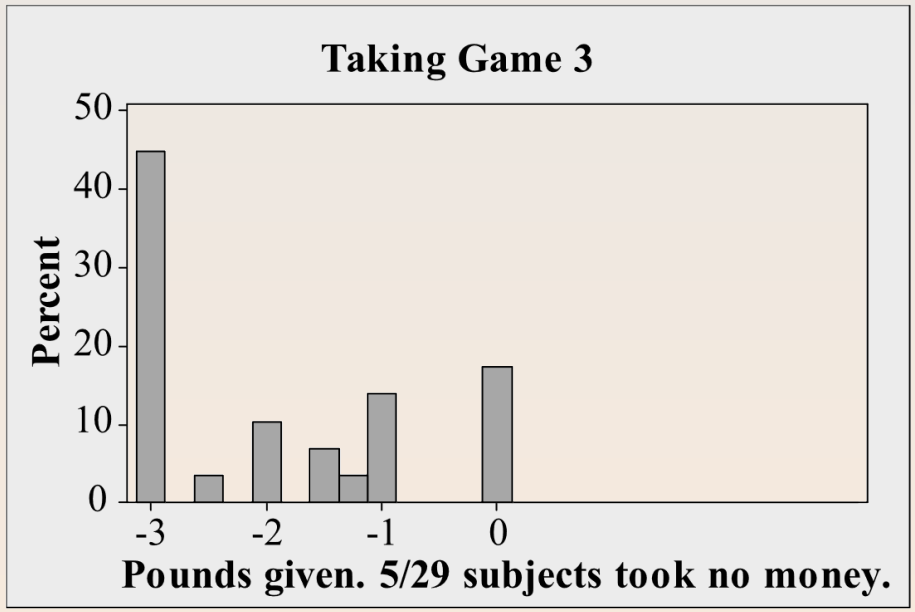
T1 T2

Experiment 2

Bardsley (2008)



T1



T2

Experiment 3

Trust games

Camerer and Weigelt (1988) and Berg, Dickhaut, and McCabe (1995) pioneered the study of 'trust games'; an example:

- Sender and receiver are anonymously paired
- Sender has \$10 and chooses an amount x between 0 and \$10 to send to the receiver, keeping the rest
- The amount sent to the receiver is tripled
- Receiver chooses an amount between 0 and \$3x to return to the sender
- Question: if both players are strictly self-interested cash maximizers, what would be the outcome of this game?

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- Question: if both players are strictly self-interested cash maximizers, what would be the outcome of this game?
- Sender's choice is designed to capture trust, and receiver's choice to capture trustworthiness
- How well do you think this identifies trust/trustworthiness? Alternative explanations? Is there a better way?

Berg, Dickhaut, and McCabe (1995)

Completely anonymous, one time game

- Want to make trust as unlikely as possible—no reputation, no contracts, no punishment

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Completely anonymous, one time game

- Want to make trust as unlikely as possible—no reputation, no contracts, no punishment
- 32 pairs of subjects in the 'no history' case; 28 pairs in the 'social history' case
  - Social history case subjects were given a summary of the results of the no history case
  - This means they might be able to use common information about how previous subjects had behaved to form their own strategies
  - All subjects U of Minnesota undergrads; makes the 'social norm' from the previous treatment maybe relevant since it was in the same population
- Double blind experiment: subjects interact by putting dollars in sealed envelopes, through intermediaries

Results: no history treatment

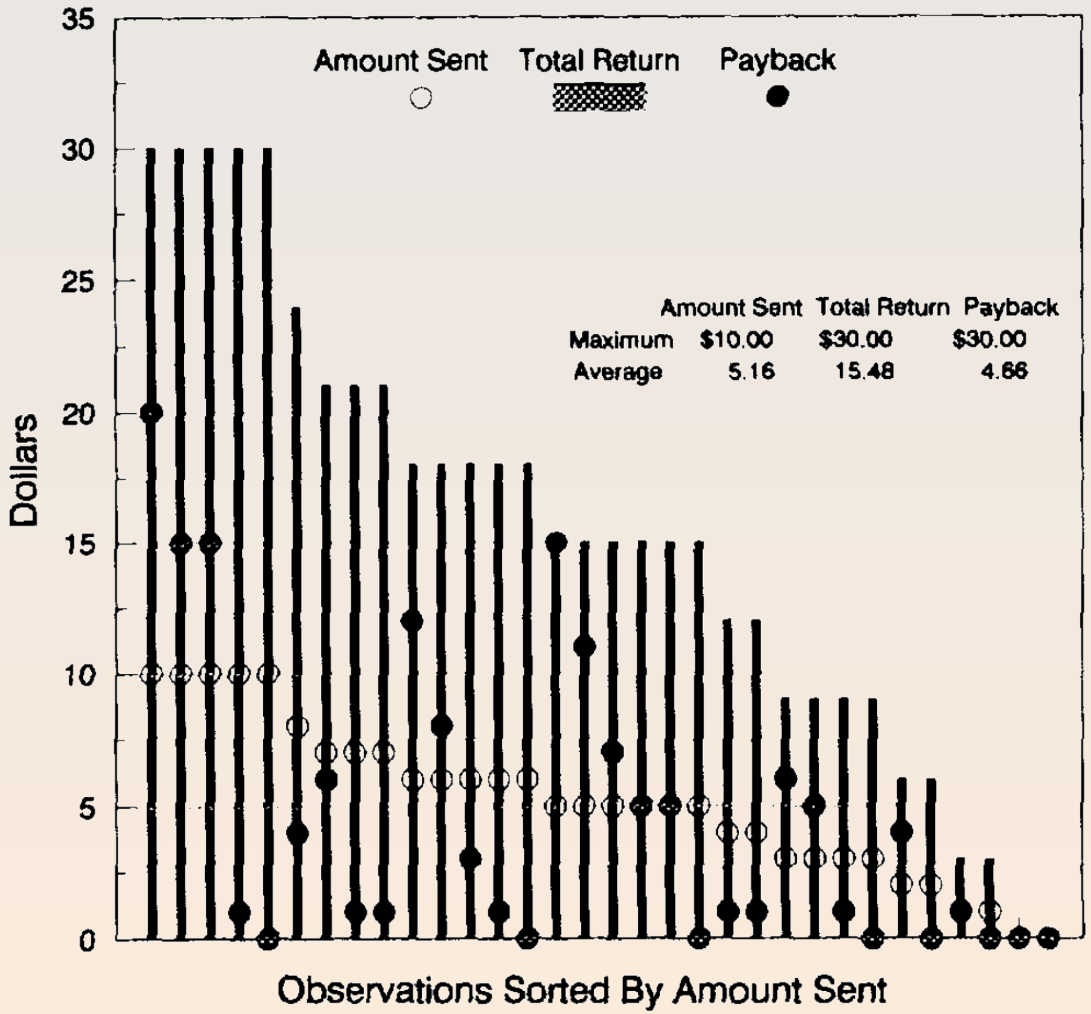


FIG. 2. Trust experiment results showing amount sent (○), total return (■), and payback (●). No history was provided to the subjects.

Results: social history treatment

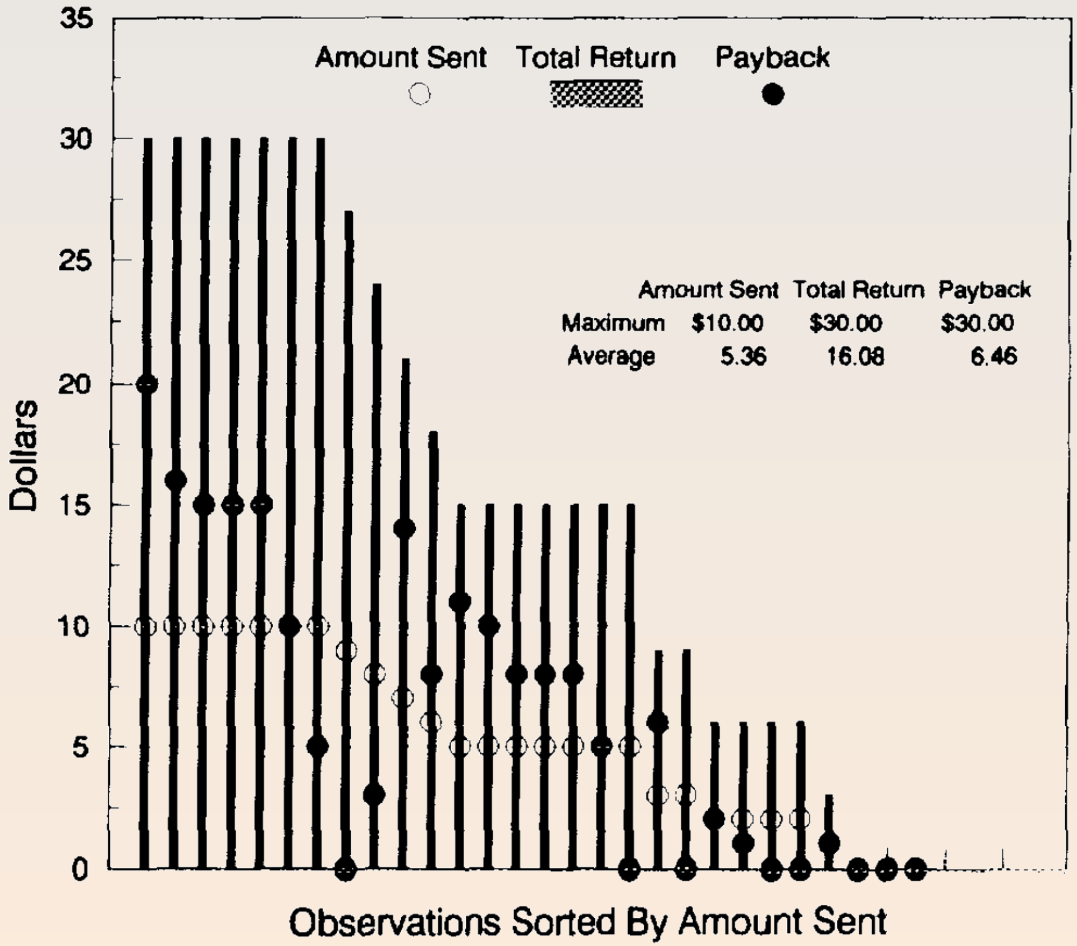
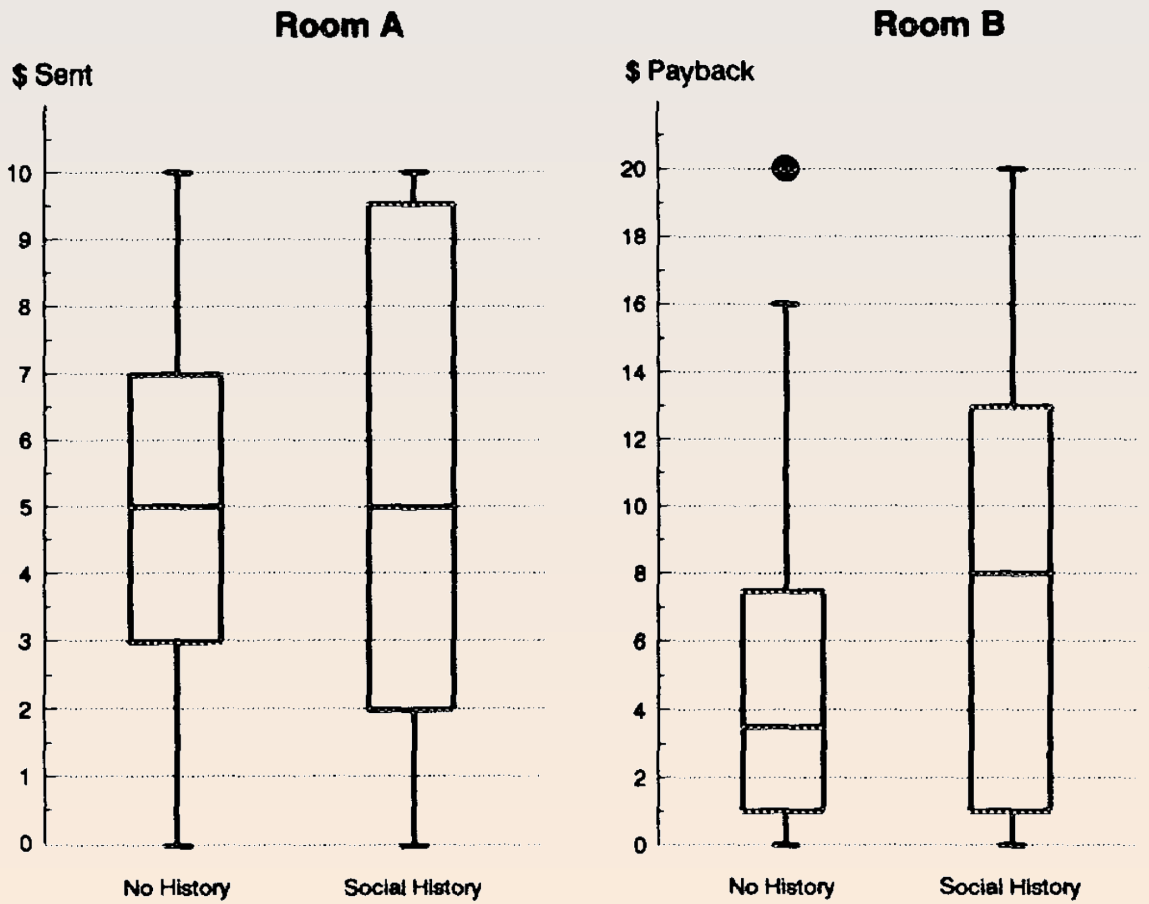


FIG. 3. Trust experiment results showing amount sent (○), total return (■), and payback (●). A social history was provided to the subjects.

Results: comparing treatments



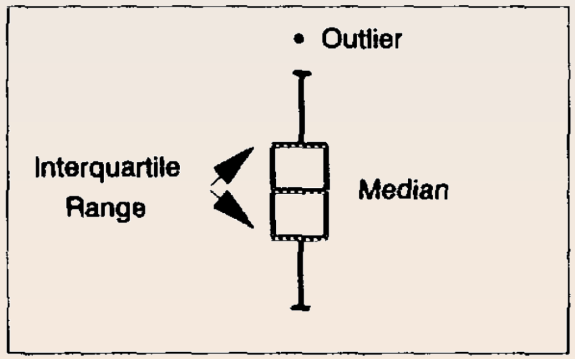
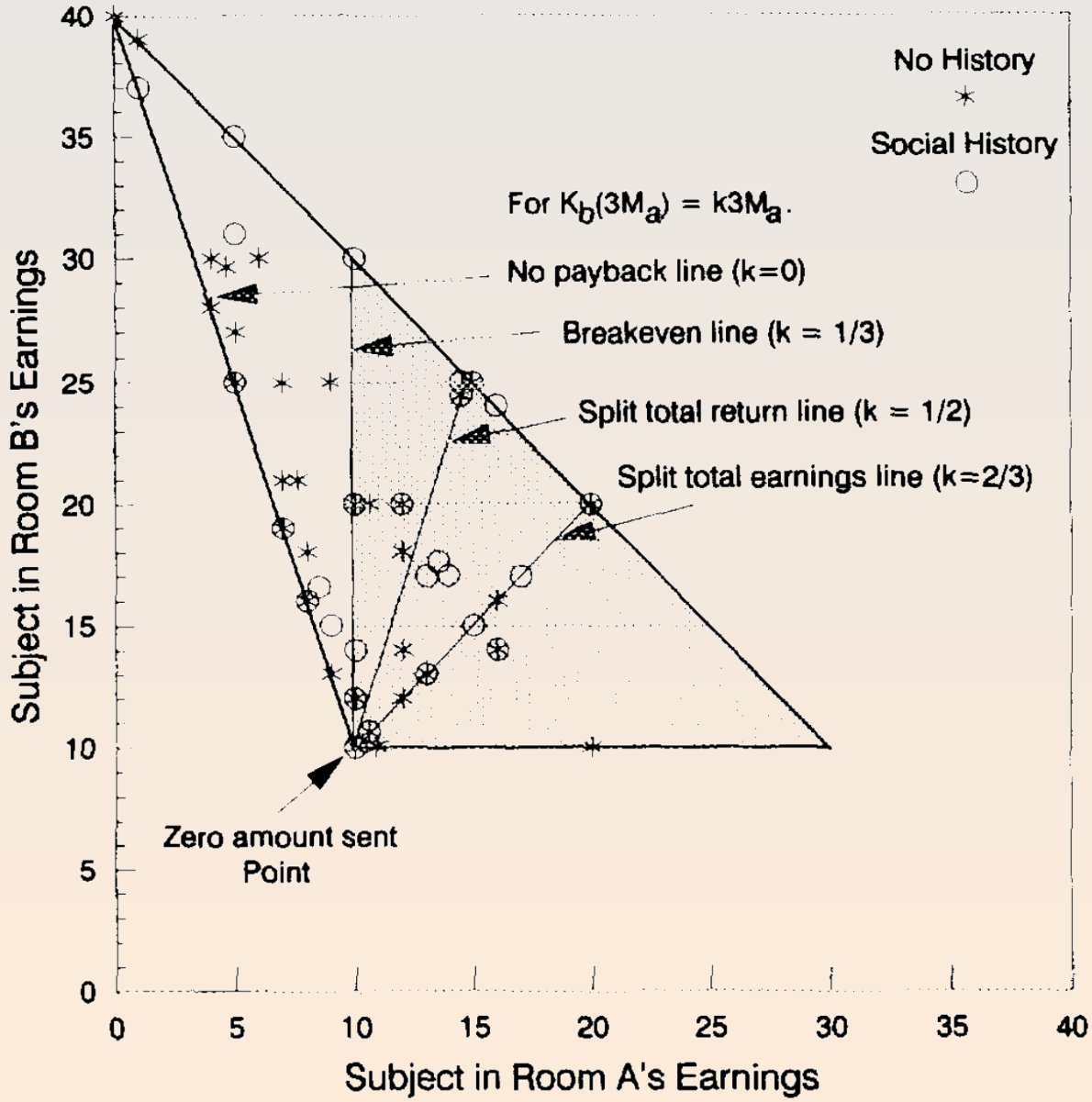


FIG. 4. Subjects' decision by room and treatment.

Results: joint earnings



Berg, Dickhaut, and McCabe (1995)

- No history: 30/32 sent money; of those cases 11 resulted in payback greater than amount sent
- Despite social history showing that 19 times trust was not reciprocated, no evidence that senders sent less in social history case
- In social history, average return from group B went from -\$0.50 to +\$1.10
- Since average amount sent only increased \$0.20 this is largely due to an increase in payback from the receivers
- Any interpretation of why this might have been the case?

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- Any interpretation of why this might have been the case?
- Increased correlation between amount sent and payback in social history case

Trust games

- Croson and Buchan (1999) present evidence that women return more cash in trust games than men (37.4% vs. 28.6%) but both send about the same amount
- Rigdon, McCabe, and Smith (2007) use two treatments that vary in matching protocol in each period
  1. Random: subjects randomly paired
  2. Sorted: subjects paired according to their trust scores from previous rounds

  Sorted treatment has more cooperation, more efficient play, and better outcomes for cooperative types

Rigdon et al. (2007)

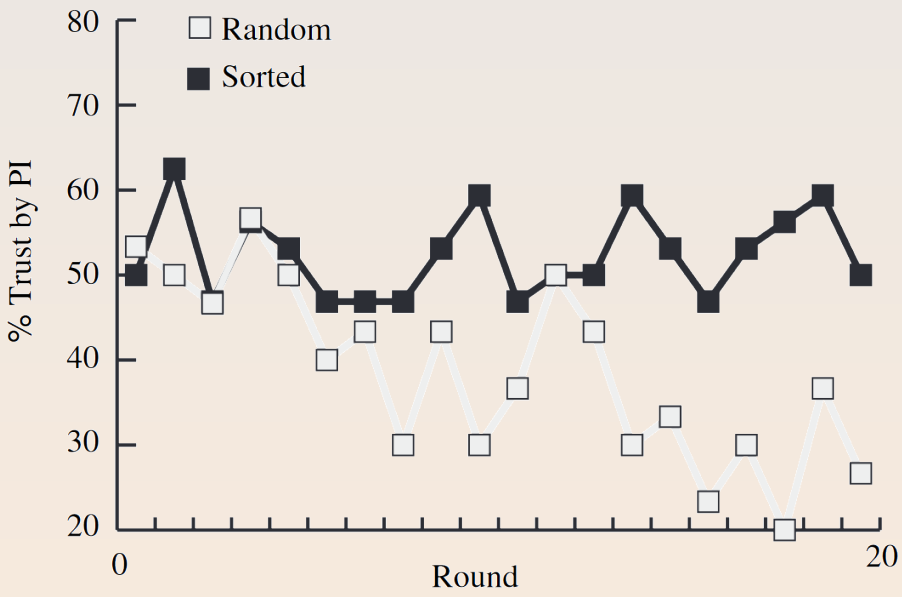

Fig. 2. *Percentage of Players 1 Trusting Over Time*

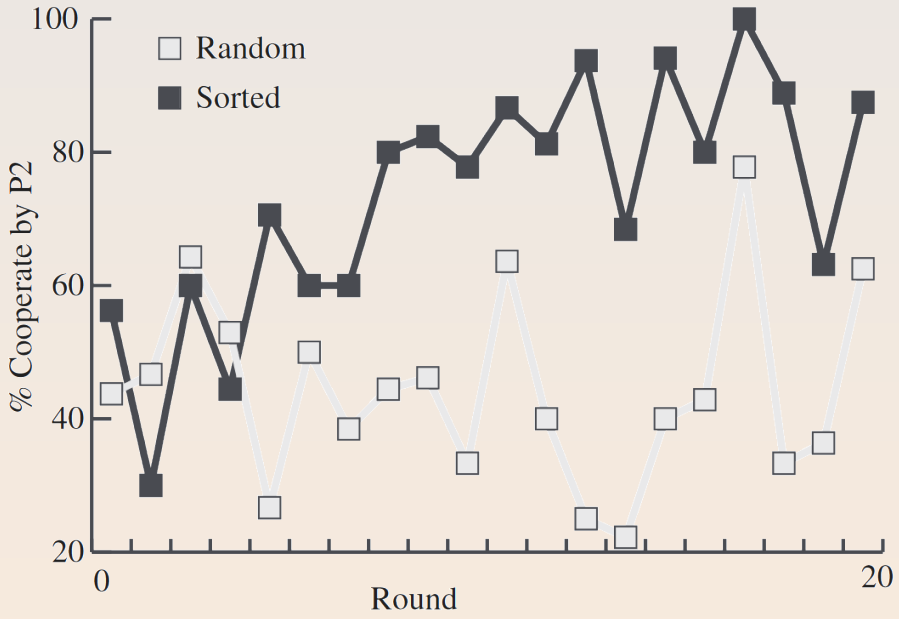

Fig. 3. *Percentage of Players 2 Cooperating Over Time*

Trust games and faces

Eckel and Petrie (2011) study whether people's decisions in a trust game are affected by seeing photos of their counterparts

- Three treatments, all a 10 token trust game; subjects paired with six different partners, keep same role throughout, and one of the 6 decisions is randomly chosen to pay out
  1. Neither party can see a picture of their partner
  2. Both parties see pictures of their partners
  3. Both parties have the option to purchase pictures of their partners before making decisions

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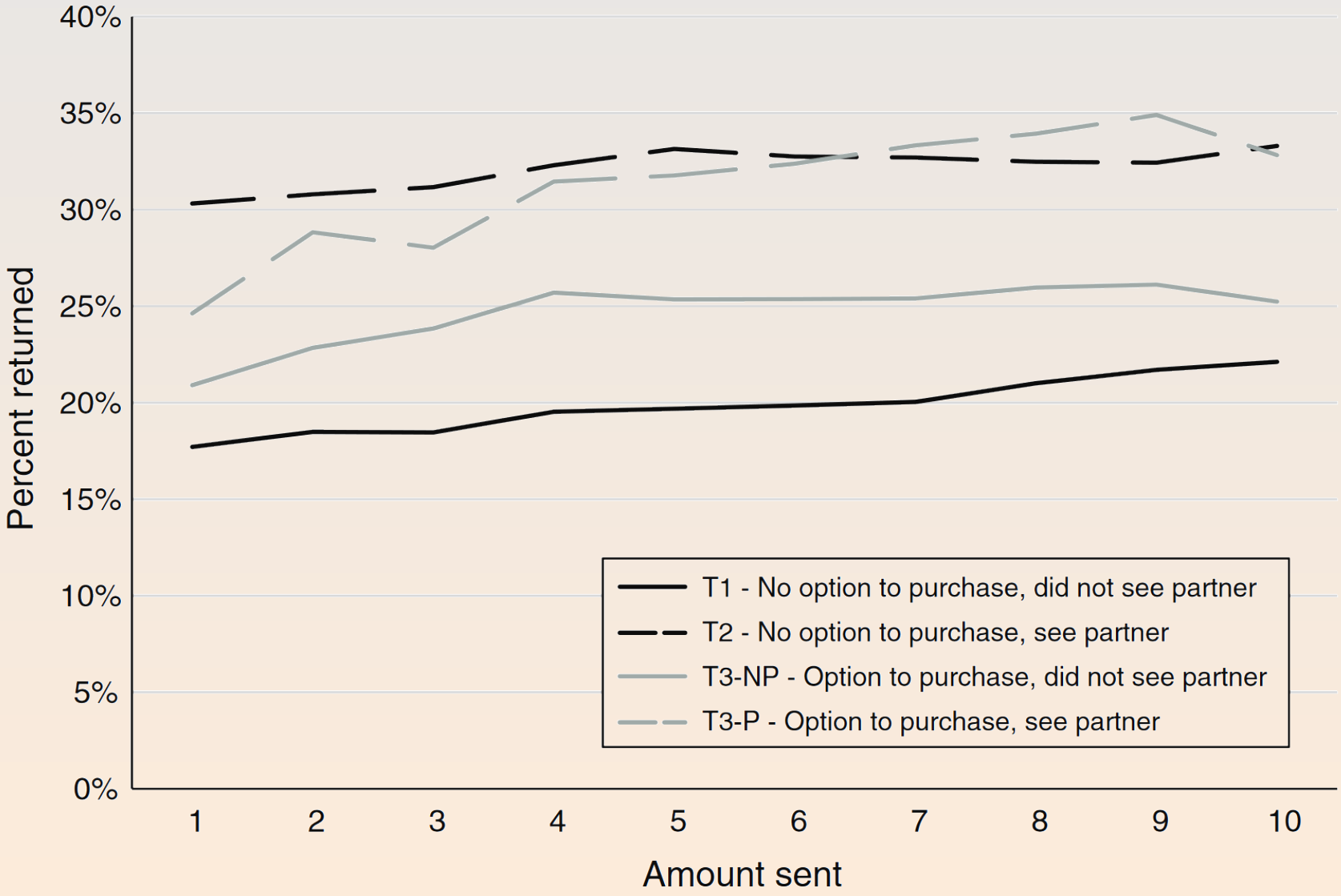
  3. Both parties have the option to purchase pictures of their partners before making decisions
- In treatment 3, subjects are asked if they are willing to forgo a fixed amount of money for the photos of each of the six partners
- Amount is different for each of the six photos (e.g. in one treatment varied from \$0 to \$8)
- 306 subjects across all treatments recruited at Georgia State intro courses in various subjects and by campus ads

Eckel & Petrie (2011)



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7. Responders return more money when they get photos and even more when they purchase photos
8. Sender earnings are increased by 12% when both see each other
9. Why? More trusting players are more likely to buy photos

Gift exchange

Fehr, Kirchsteiger, and Riedl (1993)

- Lab experiment to simulate a 'labor market'
- Goal: test 'fair wage' hypothesis that proposes that wage increases raise the effort levels of workers
- One-sided oral auction with buyers as the price-makers
- Deliberate excess supply of sellers
- Buyers offer wages, sellers choose effort level; effort is strictly costly for the seller and there is no sanctioning or punishment
- Buyers and sellers in separate rooms with information conveyed between them by phone via supervisors

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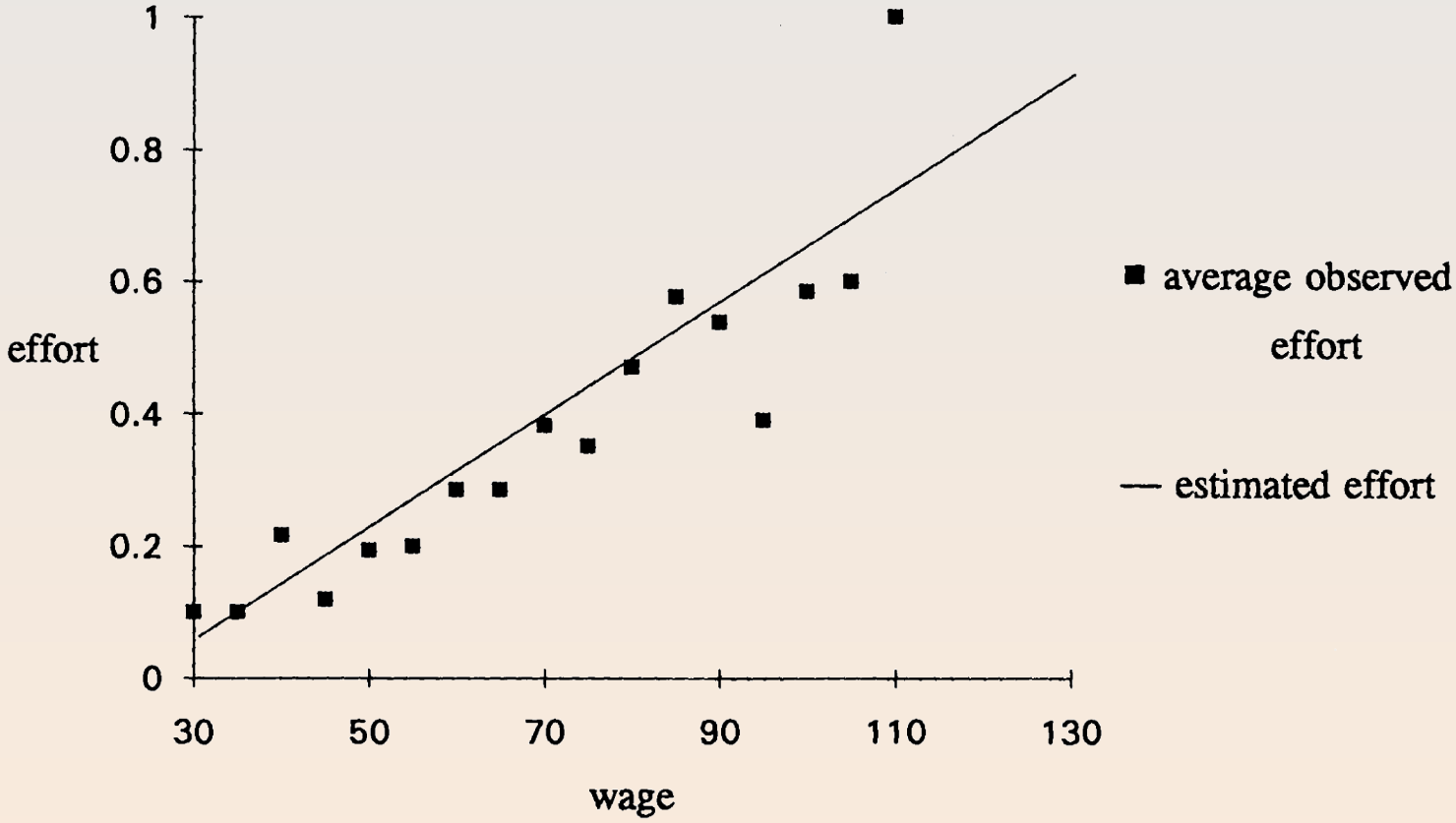
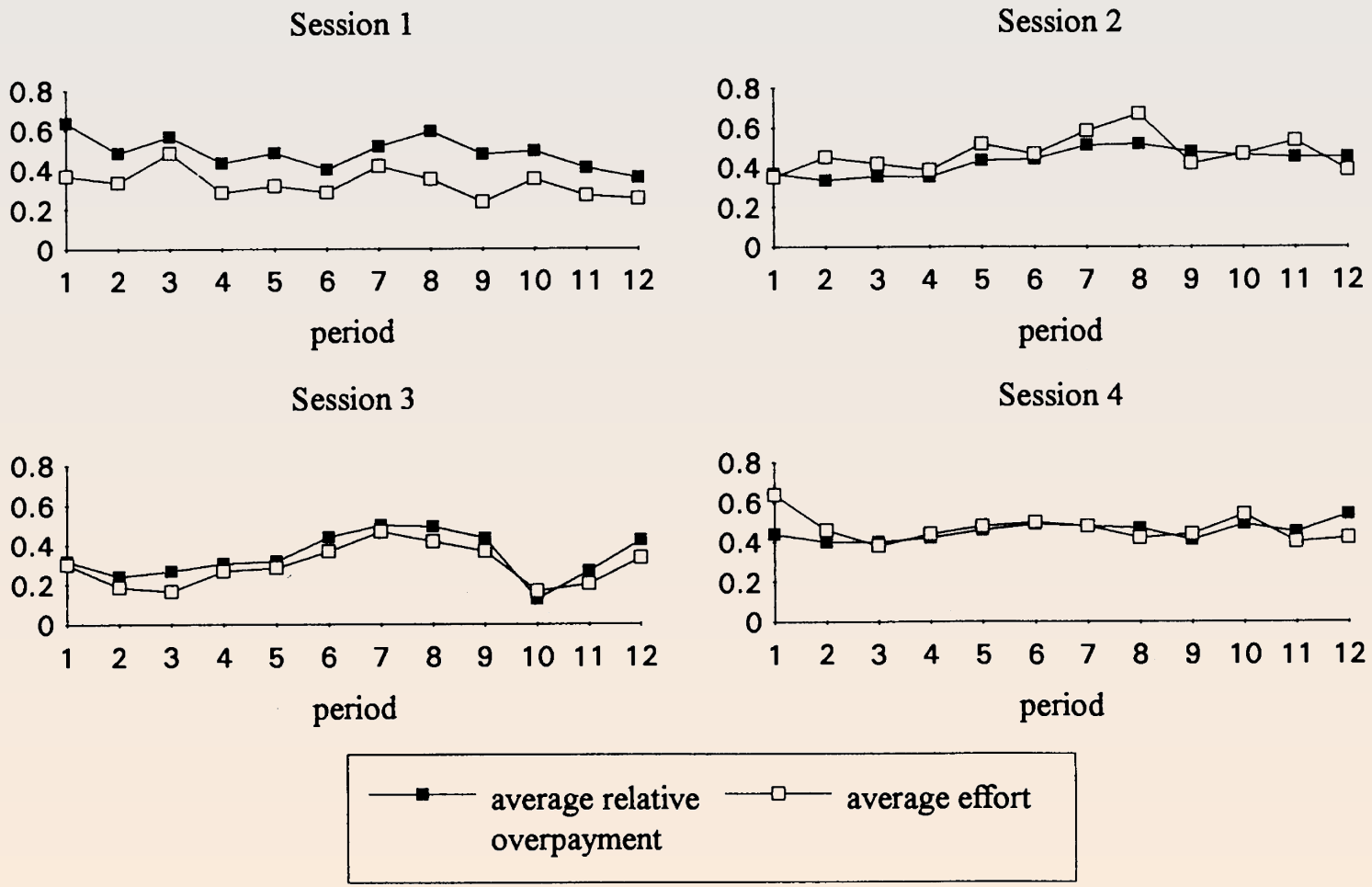
- Buyers offer wages, sellers choose effort level; effort is strictly costly for the seller and there is no sanctioning or punishment
- Buyers and sellers in separate rooms with information conveyed between them by phone via supervisors
- Buyers offered prices substantially above the market clearing level and expected sellers to respond by providing high quality levels
- Sellers on average responded by doing just that

Wage vs. effort



Effort rises with wage despite no pecuniary incentive to provide higher effort

Wage vs. effort



Reciprocity persisted throughout the repetitions in each session

Gift exchange in the field

Gneezy and List (2006) conduct field experiments on gift exchange

- Experiment 1: subjects recruited for 6 hours of one-time work digitizing holdings in a university library
  - Treatment 1: paid \$12/hr as promised
  - Treatment 2: after explaining the task, told wage was \$20/hr, not the \$12/hr promised

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- Experiment 2: subjects recruited for one-time work for a door-to-door fundraising drive
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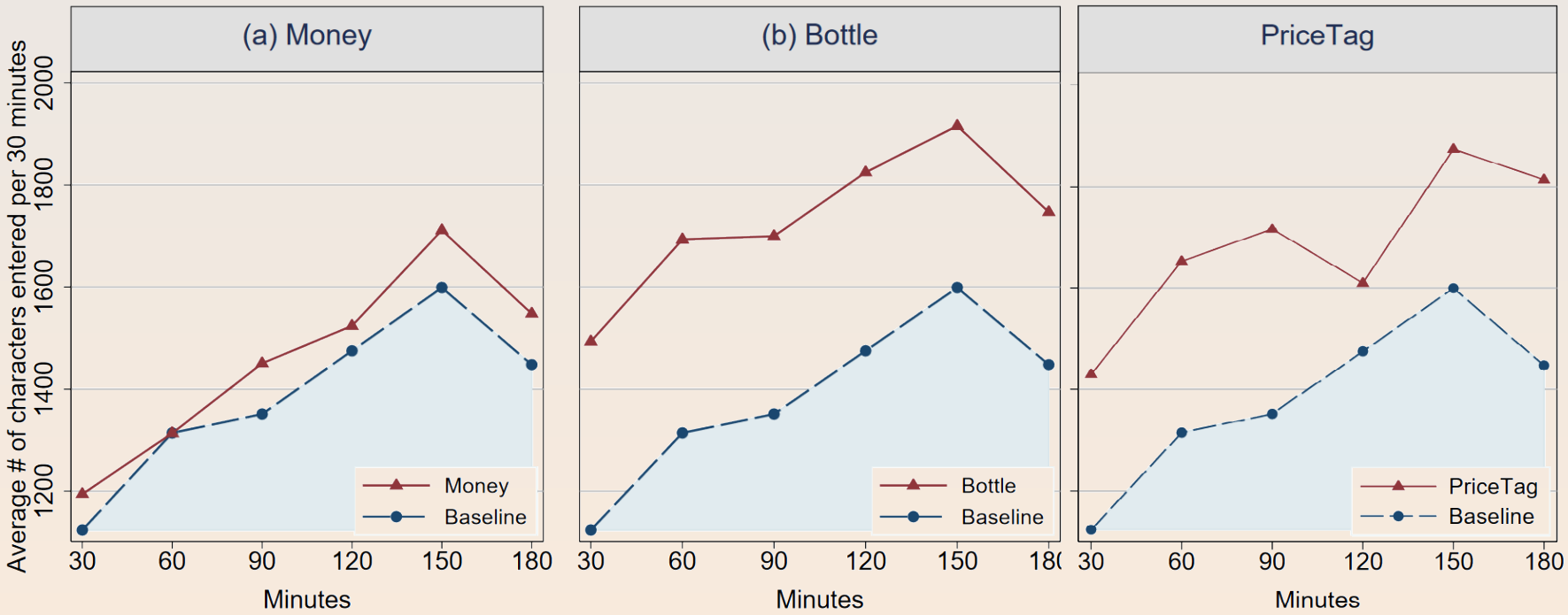
- Experiment 2: subjects recruited for one-time work for a door-to-door fundraising drive
  - Treatment 1: paid \$10/hr as promised
  - Treatment 2: after training, told wage was \$20/hr, not the \$10/hr promised
- Main findings: (i) higher wage was reciprocated by more effort during early hours of work, and (ii) after a few hours, effort levels in the two treatments were about the same

What kind of gifts?

Kube, Maréchal, and Puppe (2012) looks at how the gift exchange results look with different types of gift

- Workers recruited from campus to catalog books in a professor's library (enter info about each book into a database)
- Advertised as one-time, 3 hour job with 12 euros per hour pay
- Treatments:
  1. Baseline: 12 euros/hr
  2. Money: extra 7 euros (20% raise)
  3. Bottle: given a thermos worth 7 euros wrapped in transparent gift paper
  4. Money up front: extra 7 euros paid immediately (like the bottle) rather than at the end
  5. Price tag: same as bottle but its price was mentioned and the price tag left on
  6. Choice: choose between 7 euros or the bottle
  7. Origami: five euro bill and two euro coin artfully folded and arranged and stuck to a plain postcard

Kube et al. (2012)



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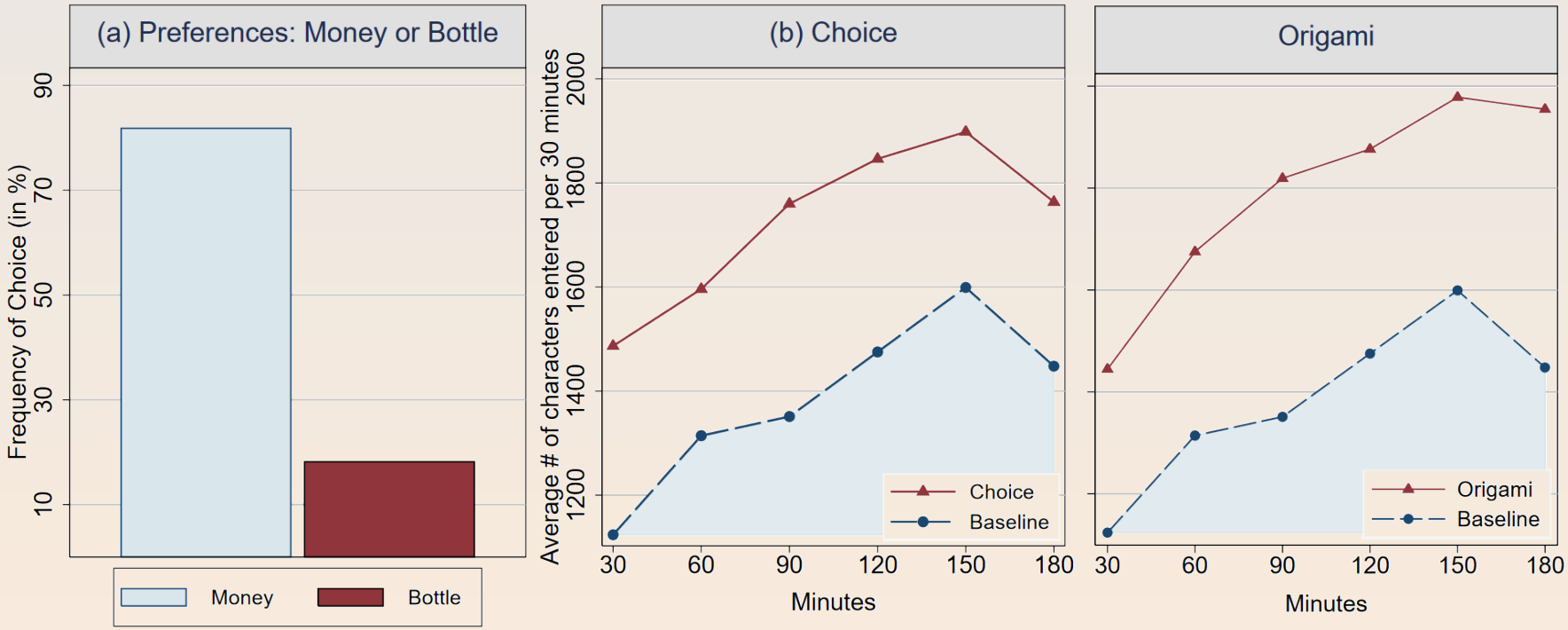
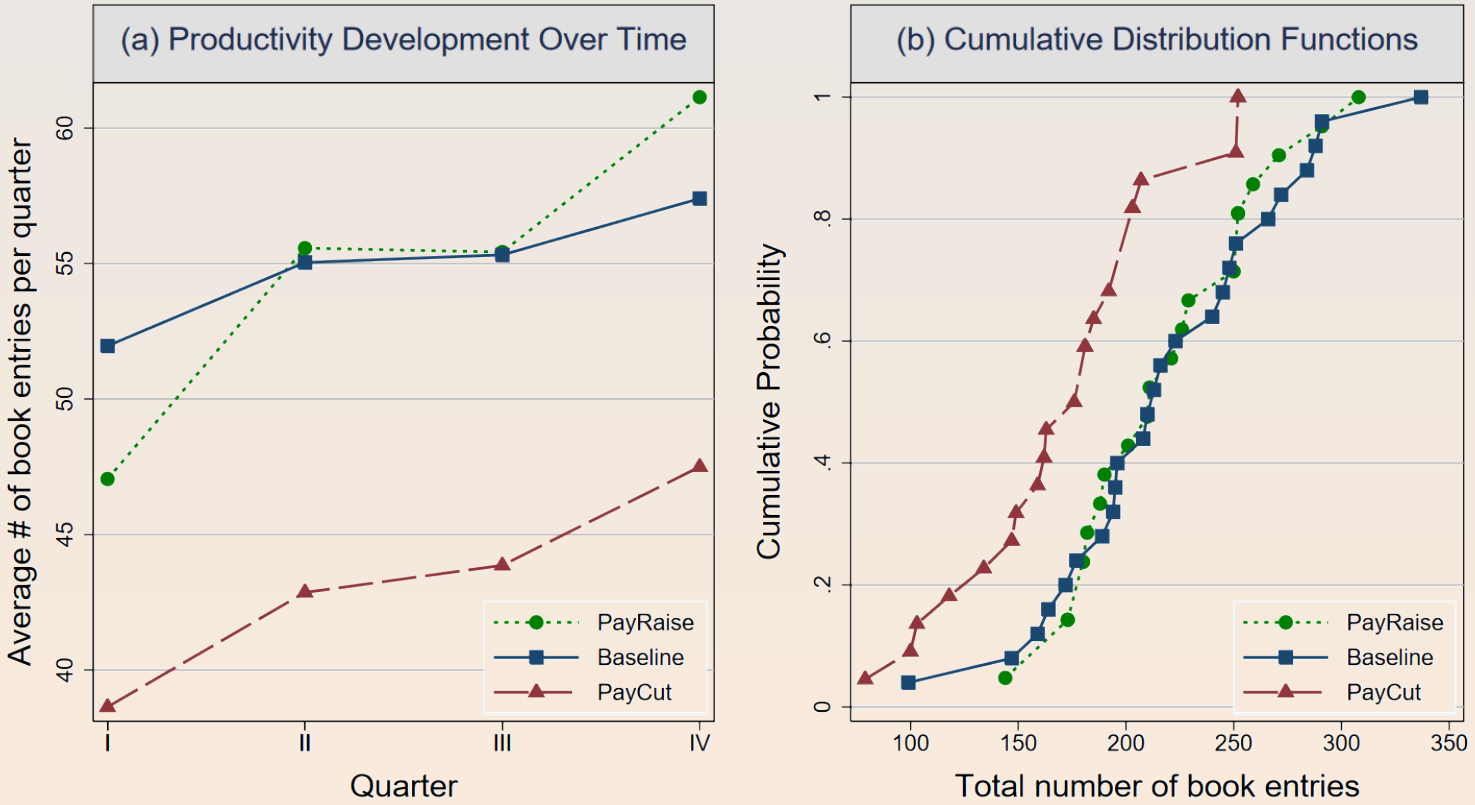


What kind of gifts?

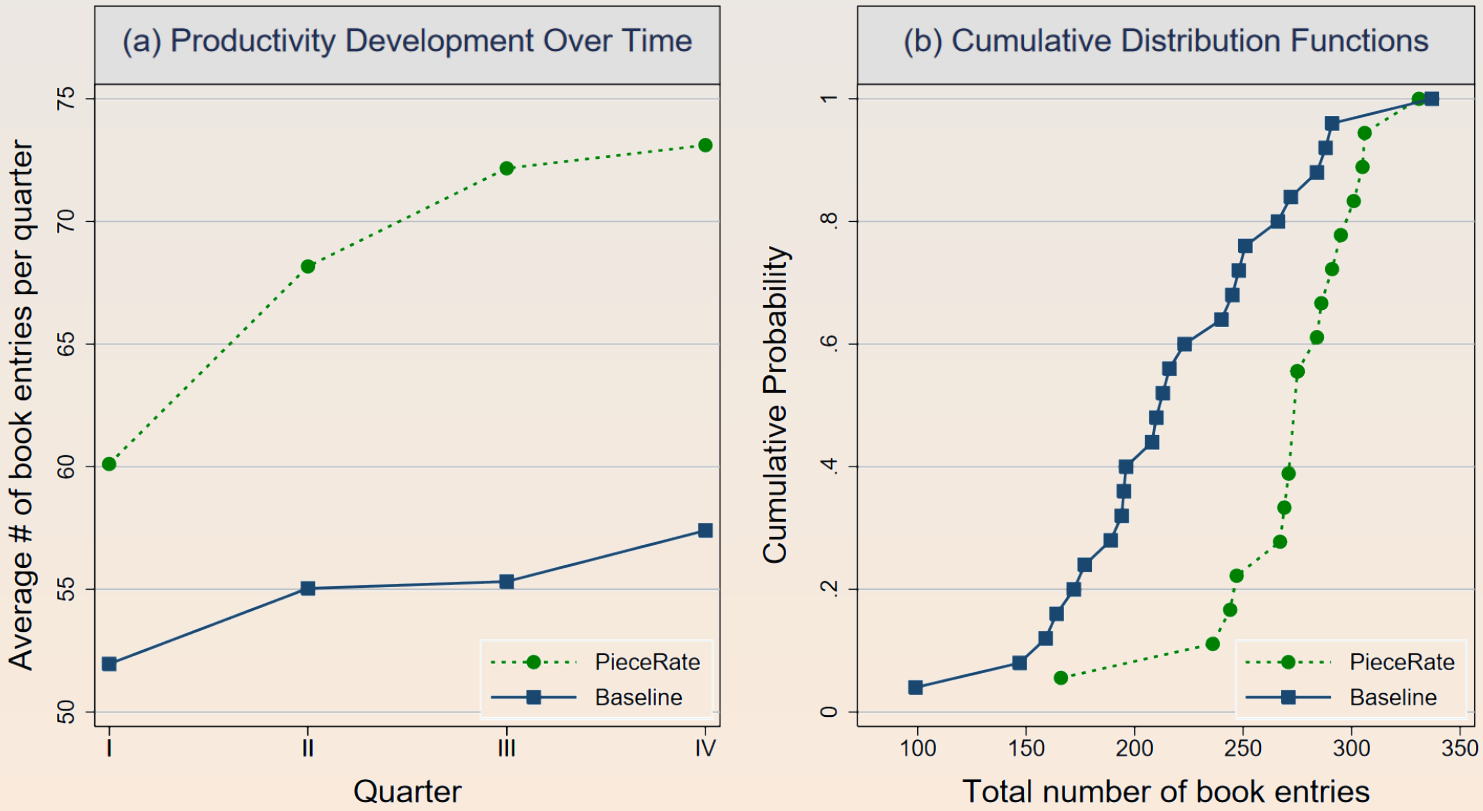
Kube, Maréchal, and Puppe (2013) studies the effect of negative versus positive surprises in wages

- Similar task and recruiting
- Told the job was projected to pay 15 euros per hour
- On arrival told either 10, 15, or 20 euros per hour
- Neutral framing: no explanation given for the different wage
- Same research assistant set up each subject and did not know the reason for the different wages
- Also checked whether piece rate pay made a difference relative to the baseline—why check this in this experiment?

Kube et al. (2013): negative vs. positive



Kube et al. (2013): piece rate vs. baseline

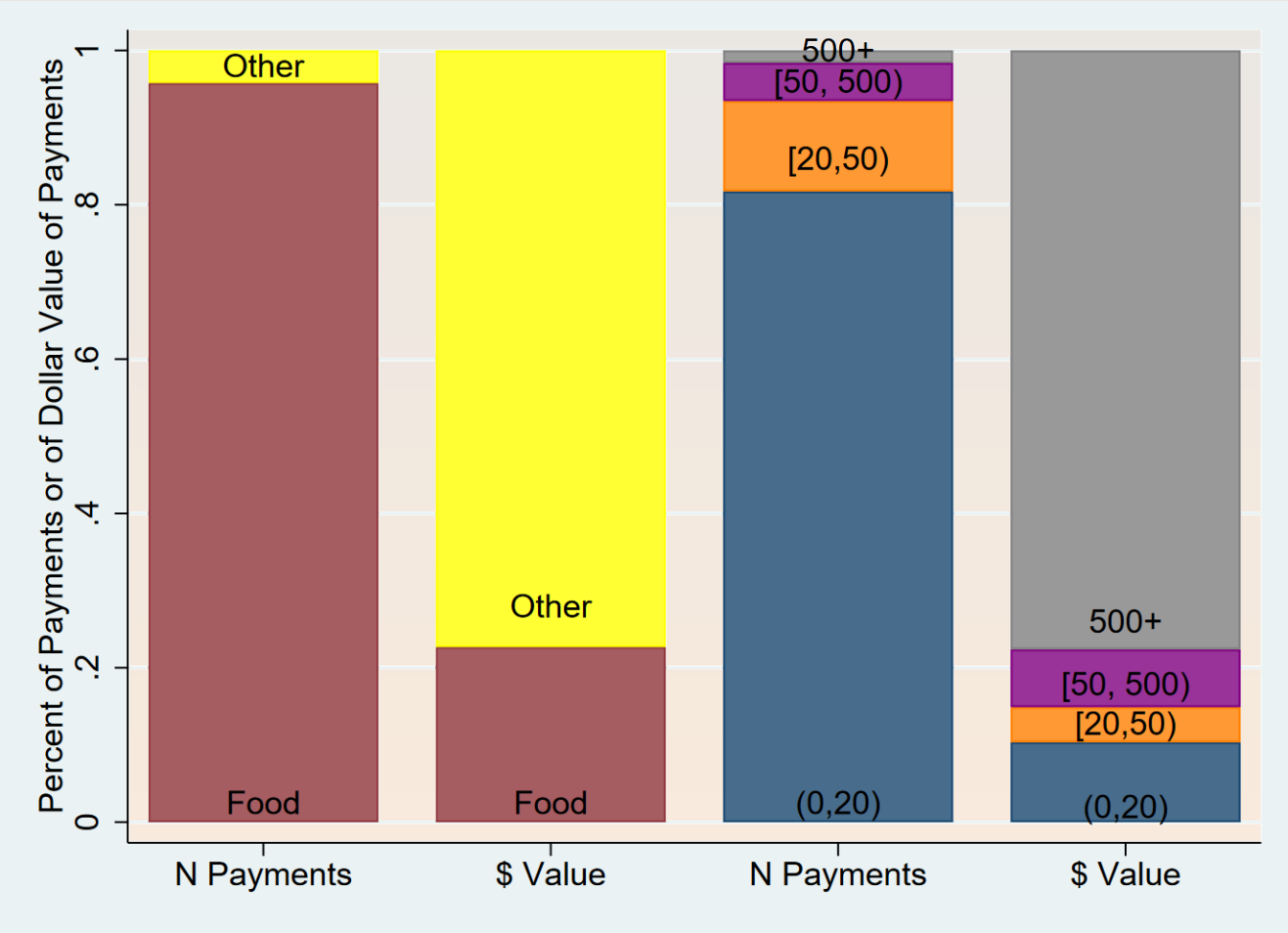


Marketing as gift exchange

Carey, Lieber, and Miller (2020) study what happens to physicians' prescription behavior when they get cash or in-kind payments from drug firms

- Federal database gives a large panel of Medicare Part D enrollees and shows prescribing behavior by month
- Open Payments data on payments from drug firms to physicians between 2013 and 2015
- 29% of physicians are paid for at least one drug during this time
- More than 20% of expenditure on branded drugs in Part D comes from physicians who were recently paid
- Little evidence of change in quality measures for patients after the shift

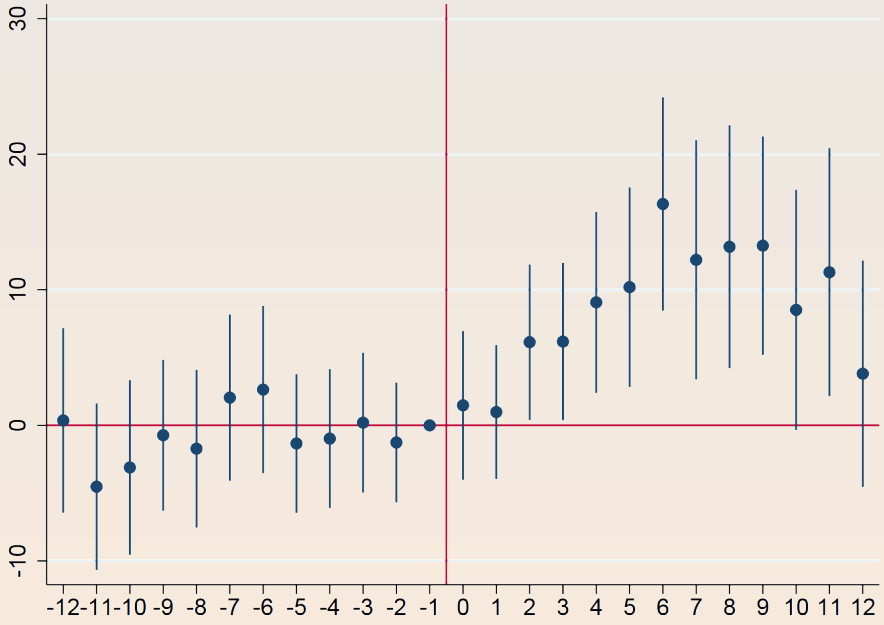
Carey et al. (2020): data on payments



Most payments are meals and have small value

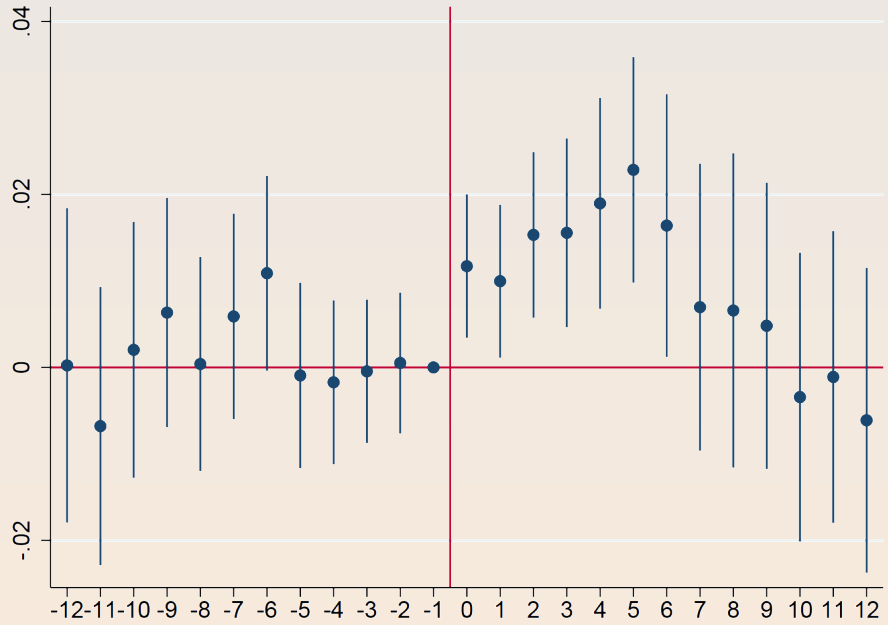
Carey et al. (2020): data on effect

Figure 3: Impact of a Payment on Drug Expenditure



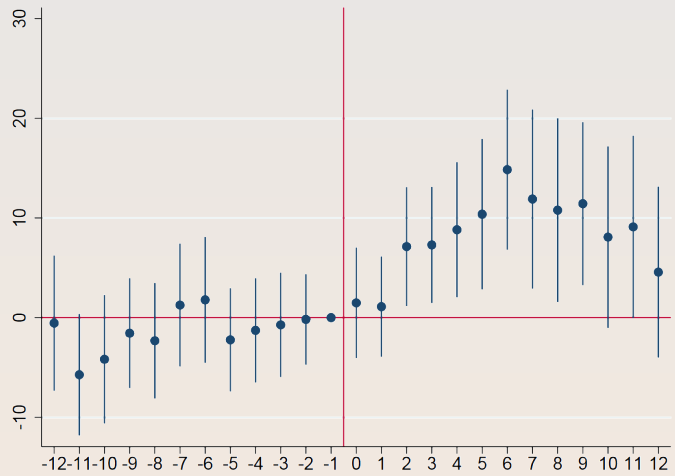
Coefficients and 95% confidence intervals from estimation of Equation 1 are presented. The dependent variable is the total expenditure by a physician's patients on a drug in a given month. The omitted time period is the month prior to the payment.

Figure 4: Impact of a Payment on Number of Patients Taking the Drug

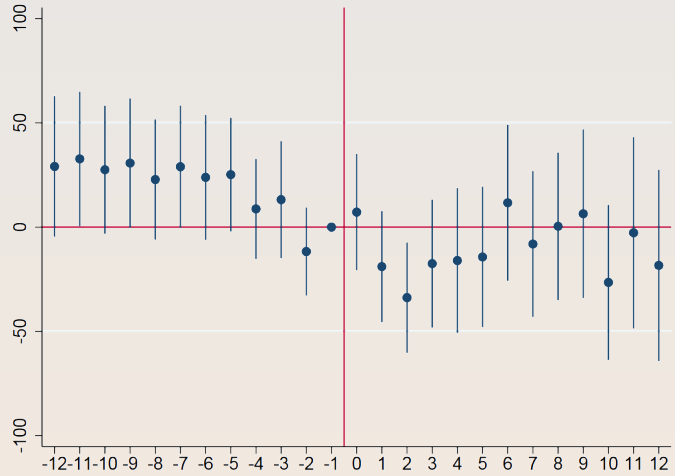


Coefficients and 95% confidence intervals from estimation of Equation 1 are presented. The dependent variable is the physician's number of patients filling a prescription for a drug in a given month. The omitted time period is the month prior to the payment.

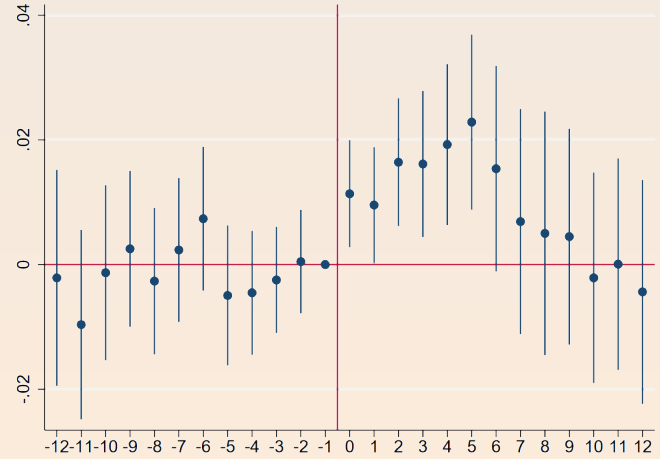
Carey et al. (2020): split by type



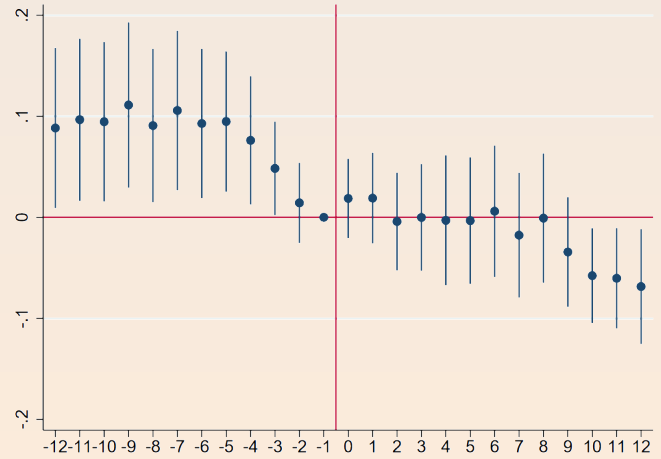
(a) Impact of Food Payment on Expenditure



(b) Impact of Other Payment on Expenditure



(c) Impact of Food Payment on # Patients



(d) Impact of Other Payment on # Patients

Preferences for redistribution

Durante, Putterman, and Weele (2014)

- This study uses a lab experiment to try to disentangle different possible determinants of people's preferences for redistribution of income:
  1. Self-interest
  2. Insurance
  3. Social preferences
     - ★ Assistance to the poor
     - ★ Distaste for undeserved inequalities
- To do this, subjects were in different parts of the experiment faced with both 'earned' and 'unearned' inequality in their payoffs, and the role of a disinterested versus interested party

Durante, Putterman, and Weele (2014)

- Subjects: 336 undergraduate students at Brown University
- 16 sessions with 21 subjects in each
- \$5 payment for showing up plus earnings that depended on choices during the experiment

Durante, Putterman, and Weele (2014)

- Subjects: 336 undergraduate students at Brown University
- 16 sessions with 21 subjects in each
- \$5 payment for showing up plus earnings that depended on choices during the experiment
- Each subject initially assigned one of 20 possible provisional payoffs from \$0.11 to \$100
- This is a proportional reproduction of the pre-tax income distribution in the U.S.
- This initial assignment was done in one of four possible ways, each designed to mimic a possible determinant of real income inequality
  1. Random assignment: capturing a distribution that arises from luck
  2. Home zip code: subjects arranged in order of their home zip code's average income
  3. Quiz: arranged by relative performance on a general knowledge quiz, capturing knowledge
  4. Tetris: arranged by relative performance on a game of tetris, capturing skill

Durante, Putterman, and Weele (2014)

Subjects asked to choose a proportional tax rate between 0% and 100% in increments of 10% to apply to each of the four assignment methods

- Proceeds of the tax are divided equally among all participants
- No voting: in each treatment, one subject's tax choice is randomly selected to be applied
- Amount of 'leaky bucket' loss (Okun 1975) varied across sessions

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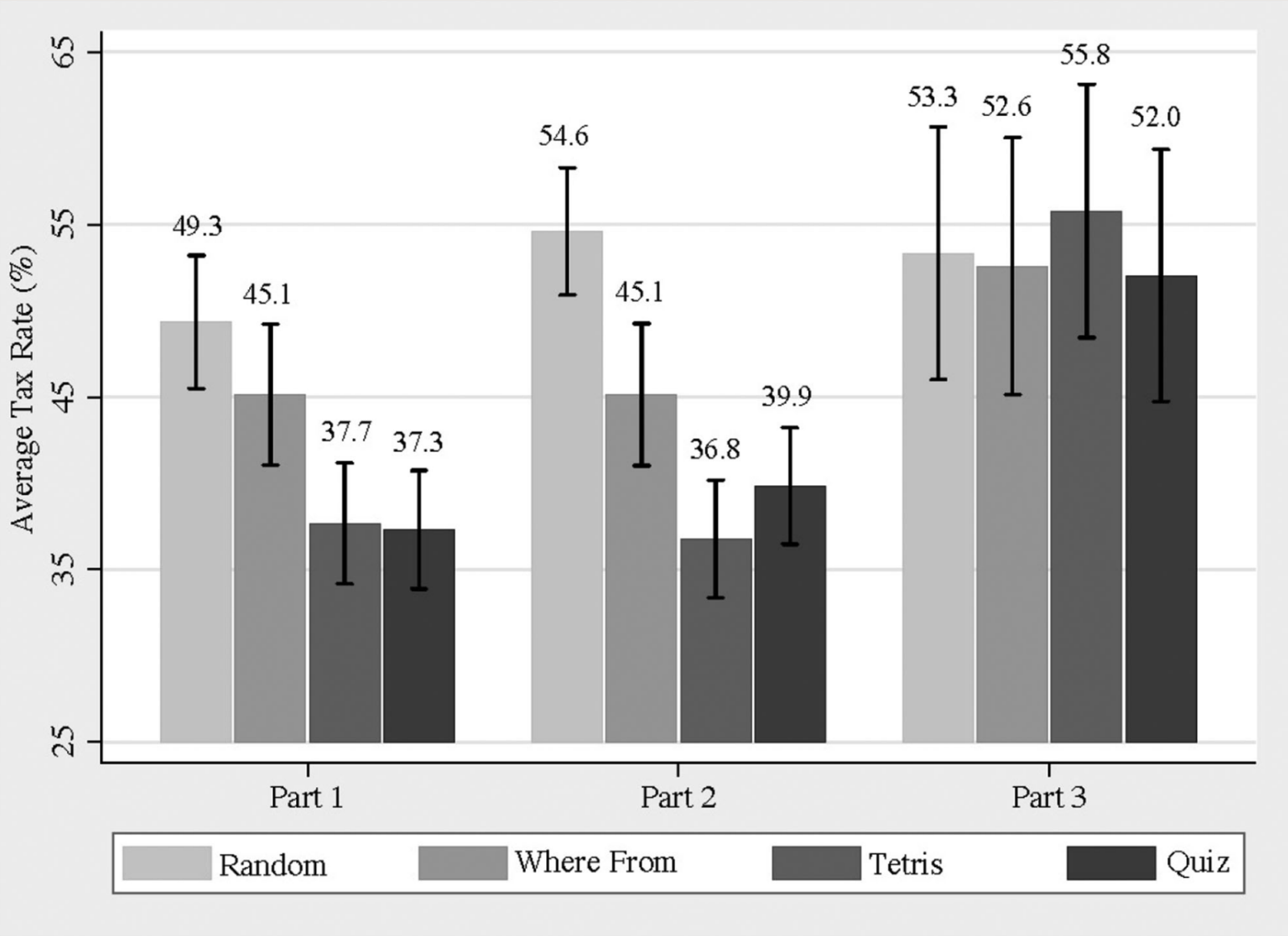
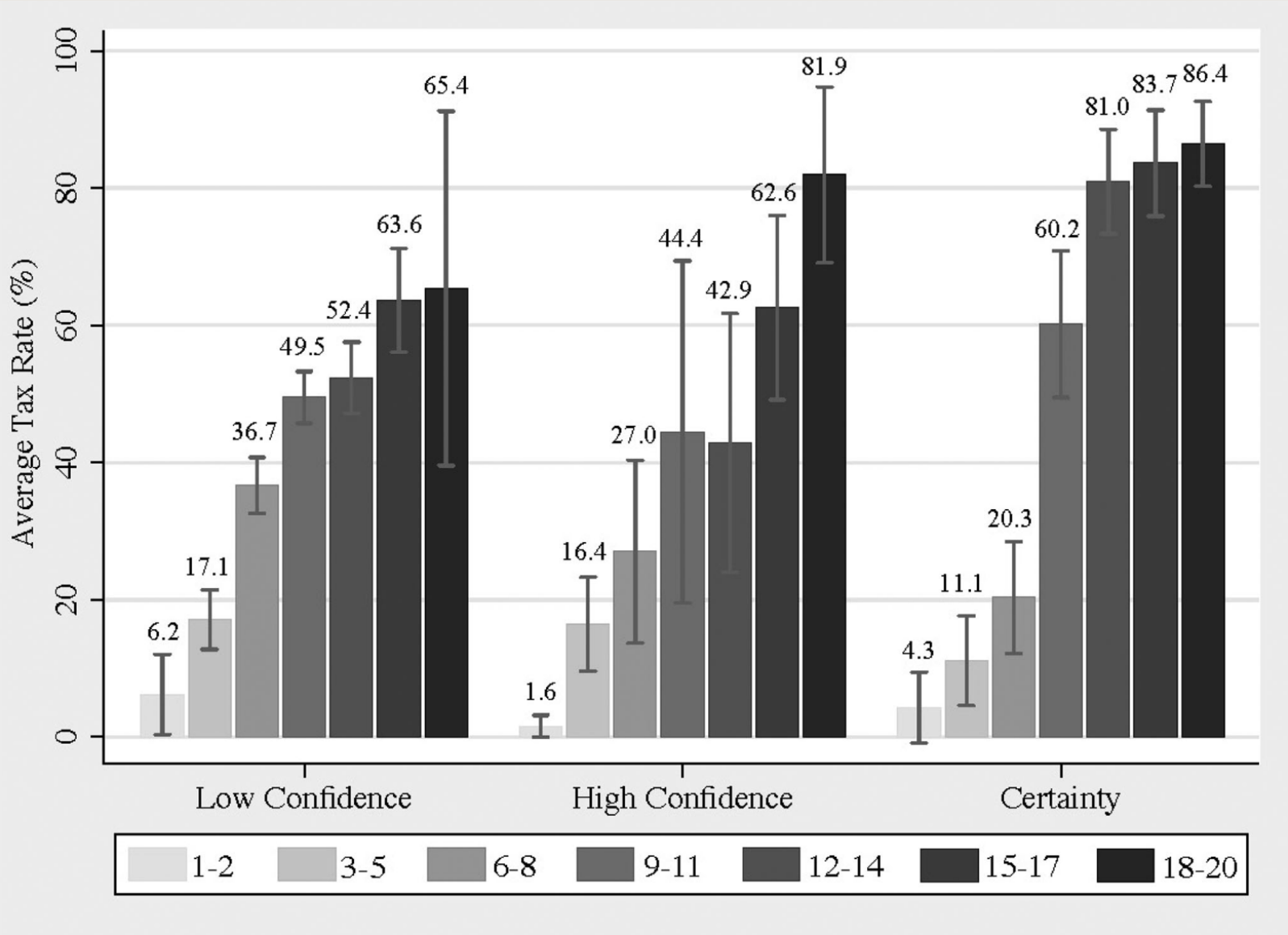
- Proceeds of the tax are divided equally among all participants
- No voting: in each treatment, one subject's tax choice is randomly selected to be applied
- Amount of 'leaky bucket' loss (Okun 1975) varied across sessions
- Three parts to the experiment: coin toss decided whether 1 or 2 would apply after part 2 conducted; if part 2 selected part 3 subsequently run
  1. Disinterested DM: decisive individual would *not* be subject to their chosen tax rate; instead they would get an amount randomly drawn between \$19.80 and \$21.80
  2. Involved DM: decision maker would be subject to the tax, but behind the veil of ignorance—that is, before they knew where they were ranked in the income distribution
  3. Involved DM without uncertainty: if part 2 selected by coin flip, subjects were told their position in each method and invited to revise any or all of their tax choices

Tax choice by assignment method



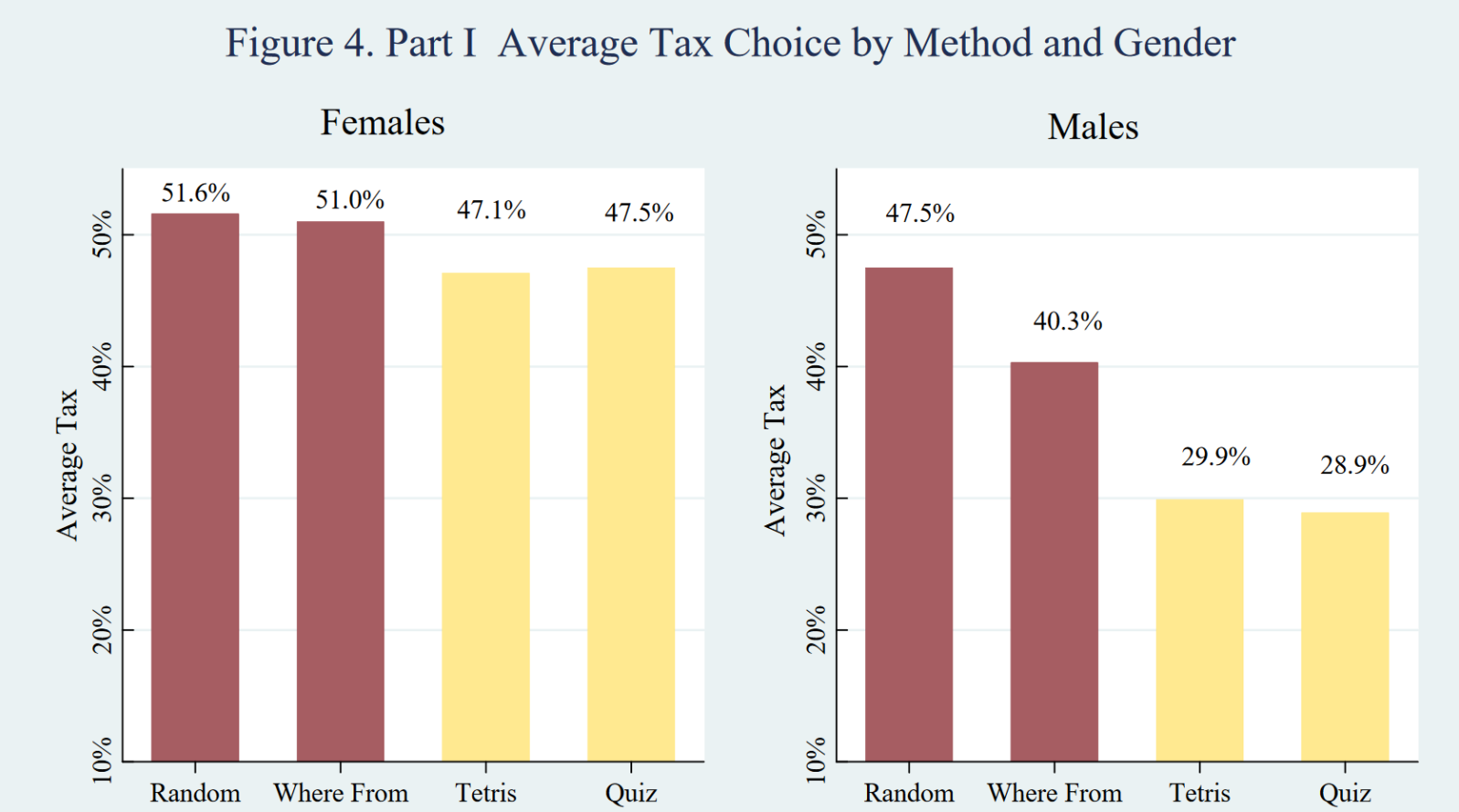
Tax choice by predicted rank

Predicted rank and confidence in the prediction



Tax choice by gender

From a working paper version:



Durante, Putterman, and Weele (2014)

- All three motives for redistribution matter:
  1. Income maximization:
     - ★ Higher direct tax cost reduces demand for redistribution
     - ★ Higher expected pretax income reduces demand for redistribution
     - ★ Strong tendency to choose own-income maximizing tax rates with some limited social concern
  2. More confidence about ranking (lower income risk) reduces demand for redistribution
  3. Social concerns:
     - ★ More efficiency loss from taxation reduces demand for redistribution
     - ★ Most subjects are willing to pay to reduce income inequality among others
- Estimated weights: 81% own income level, 15% standard deviation of own income, 3% distributive fairness (income of lowest earner), 1% efficiency (average earnings)
- WTP 0.4% of own payoff or 1.8% of aggregate earnings for 10% decrease in inequality; subjects redistribute 45% of pretax income

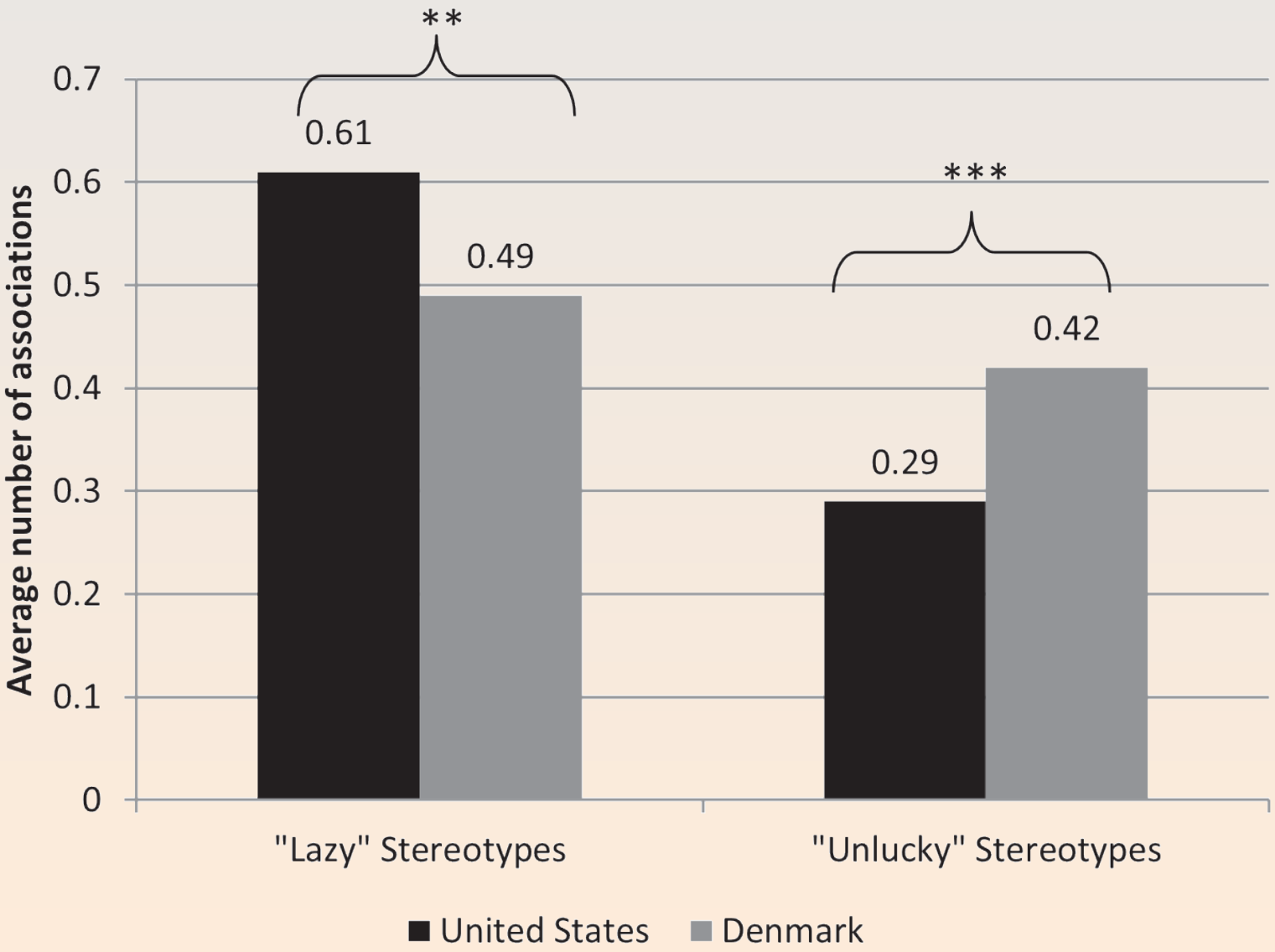
Cross-country attitudes to social welfare

Aarøe and Petersen (2014) study attitudes to redistribution via social welfare programs

- Online surveys in the U.S. (1,009 subjects) and Denmark (1,006 subjects)
- The countries differ in their support of welfare state institutions, ethnic homogeneity, and individualism measures
- Part 1: free association task to write up to 20 words that they would use to describe social welfare recipients
- Part 2: asked about support for social welfare benefits for a specific hypothetical person for one of three randomly chosen cues—neutral, unlucky, or lazy
- When minimal cues are provided about the hypothetical target person, the effect of stereotypes on opposition to social welfare is significantly crowded out among both countries' respondents

Aarøe and Petersen (2014)

Average number of associations about social welfare recipients:



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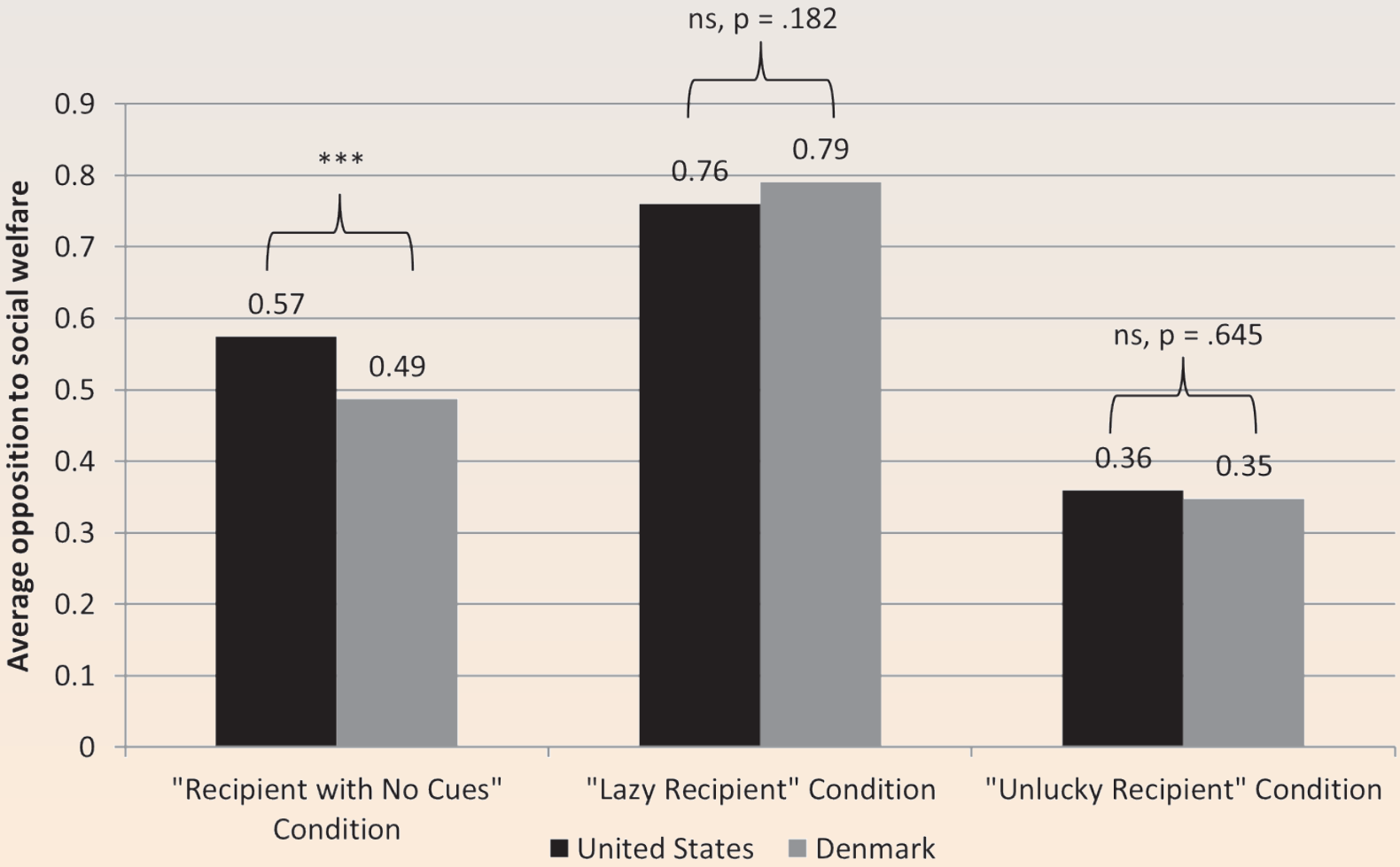

Fairness, framing, and status quo

From Kahneman, Knetch, and Thaler (1986):

> Question 1a. A shortage has developed for a popular model of automobile, and customers must now wait two months for delivery. A dealer has been selling these cars at list price. Now the dealer prices this model at $200 above list price.
>
> $N = 130$ Acceptable 29 percent Unfair 71 percent
>
> Question 1b. A shortage has developed for a popular model of automobile, and customers must now wait two months for delivery. A dealer has been selling these cars at a discount of $200 below list price. Now the dealer sells this model only at list price.
>
> $N = 123$ Acceptable 58 percent Unfair 42 percent

Notice the interaction here with the status quo and framing effects we discussed earlier

Fairness and norms in hypothetical markets

Another from Kahneman, Knetch, and Thaler (1986):

> A football team normally sells some tickets on the day of their games. Recently, interest in the next game has increased greatly, and tickets are in great demand. The team owners can distribute the tickets in one of three ways. (1) By auction: the tickets are sold to the highest bidders. (2) By lottery: the tickets are sold to the people whose names are drawn. (3) By queue: the tickets are sold on a first-come first-served basis. Rank these three in terms of which you feel is the most fair and which is the least fair—the auction, the lottery, and the queue.

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Allocation Method	Most Fair (%)	Least Fair (%)
Auction	4	75
Lottery	28	18
Queue	68	7

Kahneman, Knetch, and Thaler (1986)

A landlord owns and rents out a single small house to a tenant who is living on a fixed income. A higher rent would mean the tenant would have to move. Other small rental houses are available. The landlord's costs have increased substantially over the past year, and the landlord raises the rent to cover the cost increases when the tenant's lease is due for renewal.

A small photocopying shop has one employee who has worked in the shop for 6 months and earns \$9.00 per hour. Business continues to be satisfactory, but a factory in the area has closed, and unemployment has increased. Other small shops have now hired reliable workers at \$7.00 per hour to perform jobs similar to those done by the photocopy-shop employee. The owner of the photocopying shop reduces the employee's wage to \$7.00.

Kahneman, Knetch, and Thaler (1986)

Landlord Example	%	Photocopying Shop Example	%
Completely fair	39	Completely fair	4
Acceptable	36	Acceptable	13
Somewhat unfair	18	Somewhat unfair	34
Very unfair	7	Very unfair	49

- How should we interpret this?

Kahneman, Knetch, and Thaler (1986)

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Completely fair	39	Completely fair	4
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Very unfair	7	Very unfair	49

- How should we interpret this?
- Authors suggest aversion to deviation from 'reference point' transaction
- 'Unfair' to exploit a change in circumstance to move away from the reference transaction at the expense of others
- But 'fair' to act to maintain profit at a reference level?

Fairness attitudes and the law

Adam Smith, 1759

"...breach of property, therefore, theft and robbery, which take from us what we are possessed of, are greater crimes than breach of contract, which only disappoints us of what we expected."

The core economic concept of **opportunity cost** rears its head here

- Are we wired to view actual losses differently than opportunity cost?
- Nature or nurture?
- This may be why the concept of opportunity cost is such a tricky one to internalize when one starts studying economics

Public goods contribution games

These games are designed to simulate the theory of **public goods**

- Public goods are those that are freely available to all once provided
- The problem here is getting the project funded—or, in a broader setting, consent of the governed for public goods to be funded by tax revenue
- Why? There is the possibility of **free riding** on other people's contributions to the public good
- If I care strictly about my own pecuniary payoff, I have an incentive to let others provide the public good and use it anyway
- First let's do a quick review of the basic concept of free riding

The free rider problem

Let's take a look at the simple mechanics of the free rider problem in matrix form

- Consider an example with two consumers and a discrete public good
- Index the consumers $i = 1, 2$ and call consumer i's benefit from consuming the public good b_i
- Each consumer will independently decide whether to buy the public good or not
- And say the auctioneer calls a 'cost' c for the good. We can think of this as capturing how much consumption of other things a consumer must give up if they choose to buy the public good

The free rider problem

This table summarizes the net benefit to each consumer in each of the four possible situations

		Consumer 2: Buy	Consumer 2: Don't
Consumer 1	Buy	$b_1 - \frac{c}{2}$, $b_2 - \frac{c}{2}$	$b_1 - c$, b_2
	Don't	b_1 , $b_2 - c$	0 , 0

In each cell is the payoff to consumer 1 followed by the payoff to consumer 2

- For example, if neither choose to buy, neither pays c and neither receives b_i: both get zero
- If 1 buys and 2 doesn't, 1 gets b_1 and pays c, and 2 gets b_2 and pays nothing

The free rider problem

		Consumer 2: Buy	Consumer 2: Don't
Consumer 1	Buy	$b_1 - \frac{c}{2}$, $b_2 - \frac{c}{2}$	$b_1 - c$, b_2
	Don't	b_1 , $b_2 - c$	0 , 0

Say $b_i < c$ and $b_i > \frac{c}{2}$. Then it is socially beneficial for the good to be provided

- But each consumer deciding independently would prefer not to buy
- No matter what consumer 2 does, consumer 1 prefers not to buy

The free rider problem

		Consumer 2	
		Buy	Don't
Consumer 1	Buy	$b_1 - \frac{c}{2}$, $b_2 - \frac{c}{2}$	$b_1 - c$, b_2
	Don't	b_1 , $b_2 - c$	0 , 0

What if $b_i > c$ so that each consumer has a private incentive to buy the public good?

- Each still would prefer the *other* to buy the good
- There is still a free-rider problem

Public goods contribution games

Andreoni (1995) attempts to separate the kindness motive from confusion about the game in a public goods experiment

- Three treatments:
  1. A standard public goods game
  2. Subjects are paid according to their rank in the earnings distribution, not what they actually would have earned
  3. Subjects are paid what they earn but also learn about their rank in the earnings distribution
- The second treatment still has free-riding as a dominant strategy but eliminates incentives for cooperation
  - Reciprocal altruism among any group of subjects harms them all relative to any free-rider
  - But this wouldn't pick up genuine selflessness—'I want someone else to get the most money'
- The third treatment separates out the information on rank from the effect of payment by rank

Public goods contribution games

The baseline game:

- Subjects have 60 tokens and must choose how much to 'invest' in a private good vs. a public good
- Each token invested in the private good yields one cent of earnings
- Each token invested in the public good yields half a cent to everyone in the group

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- Subjects have 60 tokens and must choose how much to 'invest' in a private good vs. a public good
- Each token invested in the private good yields one cent of earnings
- Each token invested in the public good yields half a cent to everyone in the group
- The dominant strategy is to contribute nothing to the public good
- But the Pareto efficient strategy is to contribute everything to the public good
- Subjects are in a room of 20 and they are in a group of 5 each time
- Groups are randomly reassigned each iteration to reduce reputation effects

Contributions and learning in Andreoni (1995)

Differences between the treatments

TABLE 1—PERCENTAGES OF ENDOWMENT CONTRIBUTED TO THE PUBLIC GOOD PER ROUND

	Round										
Condition	1	2	3	4	5	6	7	8	9	10	All
Regular	56.0	59.8	55.2	49.6	48.1	41.0	36.0	35.1	33.4	26.5	44.07
RegRank	45.8	45.4	32.6	25.0	23.1	17.8	11.3	9.5	8.3	9.0	22.79
Rank	32.7	20.3	17.7	9.9	9.2	6.9	8.1	8.3	7.1	5.4	12.55
RegRank – Rank	13.2	25.1	15.0	15.1	13.9	11.0	3.2	1.3	1.2	3.6	10.24
As percentage of Regular	23.5	42.0	27.1	30.4	28.9	26.7	8.9	3.6	3.6	13.5	20.82

Motives in Andreoni (1995)

TABLE 2—PERCENTAGE OF SUBJECTS CONTRIBUTING ZERO TO THE PUBLIC GOOD PER ROUND

	Round										
Condition	1	2	3	4	5	6	7	8	9	10	All
Regular	20	12.5	17.5	25	25	30	30	37.5	35	45	27.75
RegRank	10	22.5	27.5	40	35	45	50	67.5	70	65	43.25
Rank	35	52.5	65	72.5	80	85	85	85	92.5	92.5	74.50
Kindness:											
Rank − RegRank	25	30	37.5	32.5	45	40	35	17.5	22.5	27.5	31.25
As percentage of 100 − Regular	31.3	34.3	45.5	43.3	60.0	57.1	50.0	28.0	34.6	50.0	43.41
Confusion:											
100 − Rank	65	47.5	35	27.5	20	15	15	15	7.5	7.5	25.50
As percentage of 100 − Regular	81.3	54.3	42.4	36.7	26.7	21.4	21.4	24.0	11.5	13.6	33.33
Either:											
RegRank − Regular	−10	10	10	15	10	15	20	30	35	20	15.5
As percentage of 100 − Regular	−13.0	11.4	12.1	20.0	13.3	21.4	28.6	48.0	53.8	36.4	23.26

Understanding behavior in public goods games

Chaudhuri (2011) surveys many experiments in this area, focusing on three aspects

1. Conditional cooperation
   - People who are conditional cooperators contribute more when they expect others to contribute more
2. Costly monetary punishments to sustain cooperation
   - The possibility of sanctioning those who contribute 'too little' can help to increase contribution rates
3. Non-monetary means to sustain cooperation
   - The ability to express disapproval or choose one's group can substitute for the effect of cash punishments

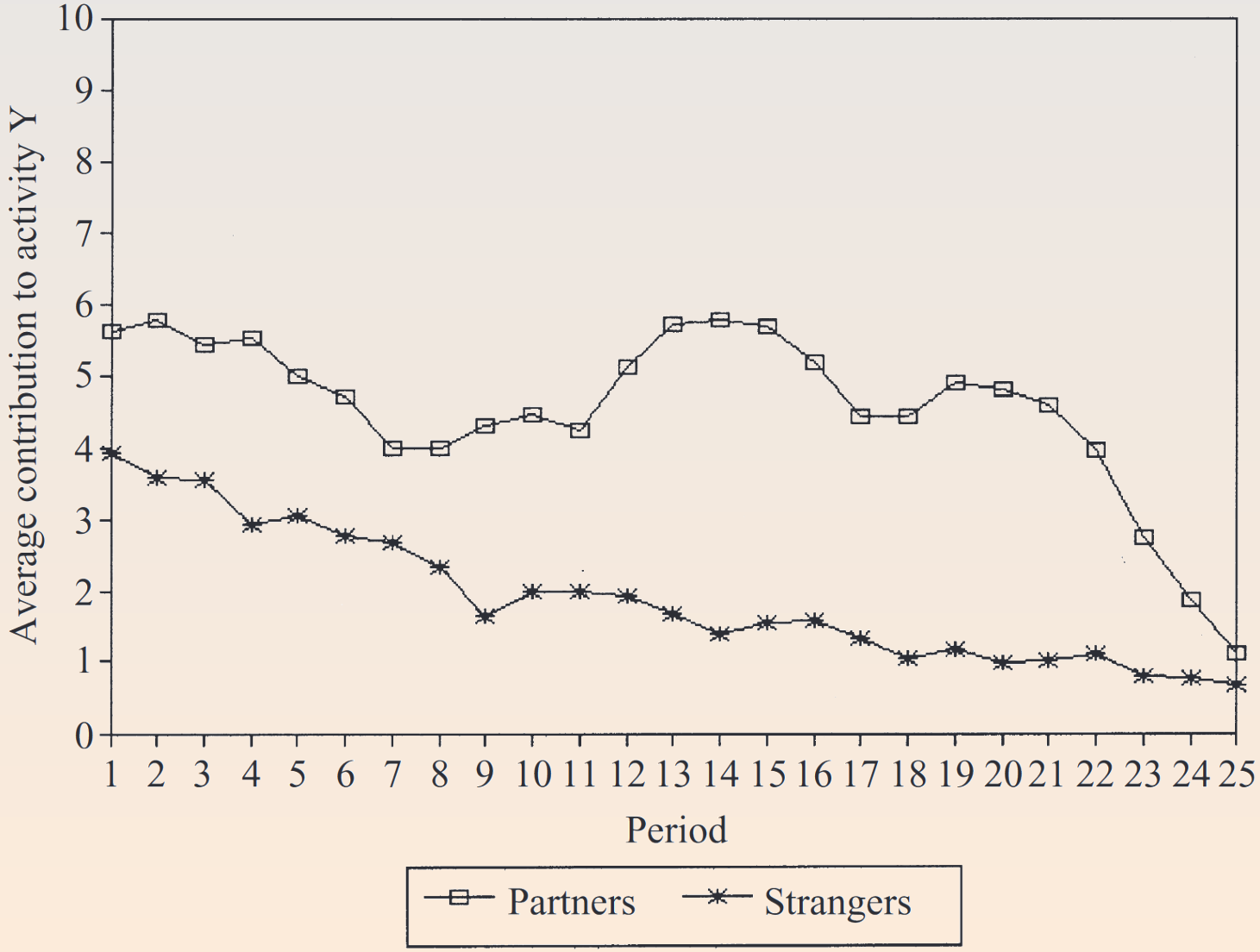
Notice there is some relationship here to the game theoretic literature on community enforcement (e.g. Kandori 1992, Takahashi 2010, Campbell 2018)

Conditional cooperation

An example of an experiment in the conditional cooperation literature is Keser and van Winden (2000)

- Two experimental treatments:
  1. Partners condition: same group plays a repeated public goods game
  2. Strangers condition: subjects play the game in groups that are changing between rounds
- Theoretical framework: two drivers of conditional cooperation
  1. Future-oriented behavior: actions induced by beliefs about future periods
  2. Reactive behavior: behavior influenced by average behavior of others, consistent with reciprocity
- Authors consider alternative theories from the literature; end-game behavior is present in the data and hard to reconcile with many alternative explanations for cooperation

Strangers vs. partners condition



Reputation and punishment

Fehr and Fischbacher (2003) describe experiments to study reputation and repetition effects in punishment

- Two conditions with ten ultimatum game repetitions
- Subjects play both conditions, half in order and half in reverse order
- Each repetition has a stake of 10 monetary units
  1. Baseline: each repetition is a fresh proposer-responder match
  2. Reputation: each repetition is a fresh proposer-responder match but proposers are informed about the current responder's past rejection behavior

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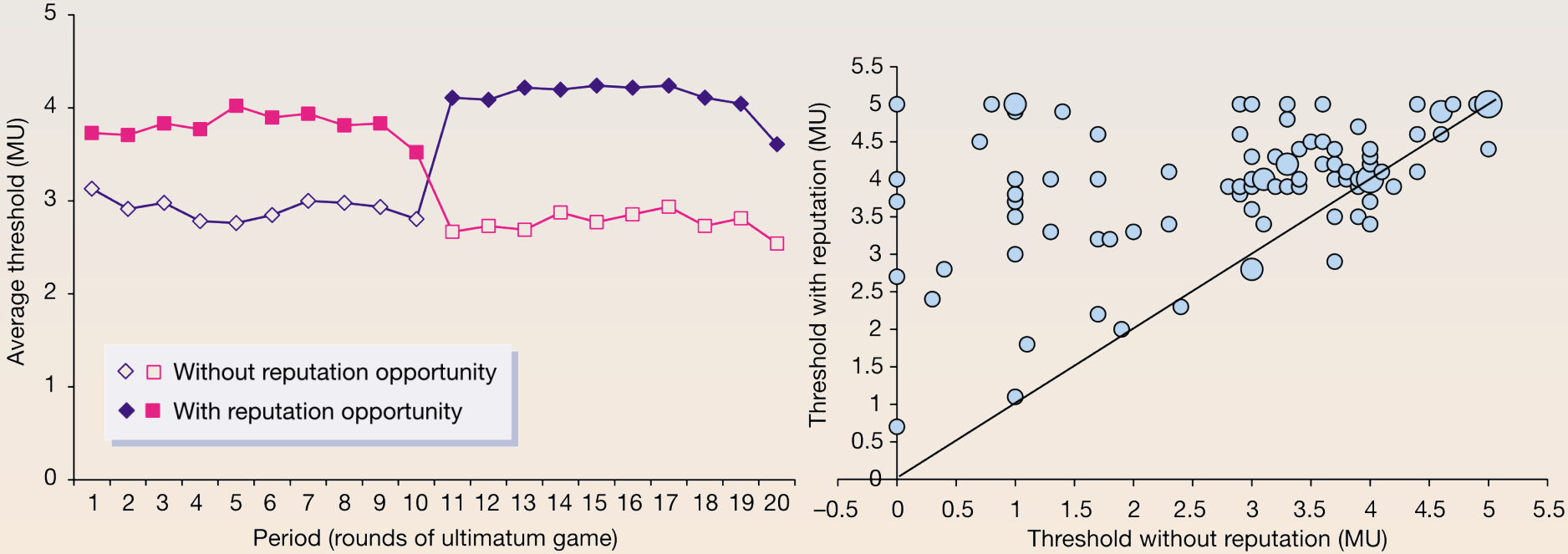
  1. Baseline: each repetition is a fresh proposer-responder match
  2. Reputation: each repetition is a fresh proposer-responder match but proposers are informed about the current responder's past rejection behavior
- Potential for responder to try to establish a tough reputation by setting a higher reject threshold

Fehr & Fischbacher (2003)



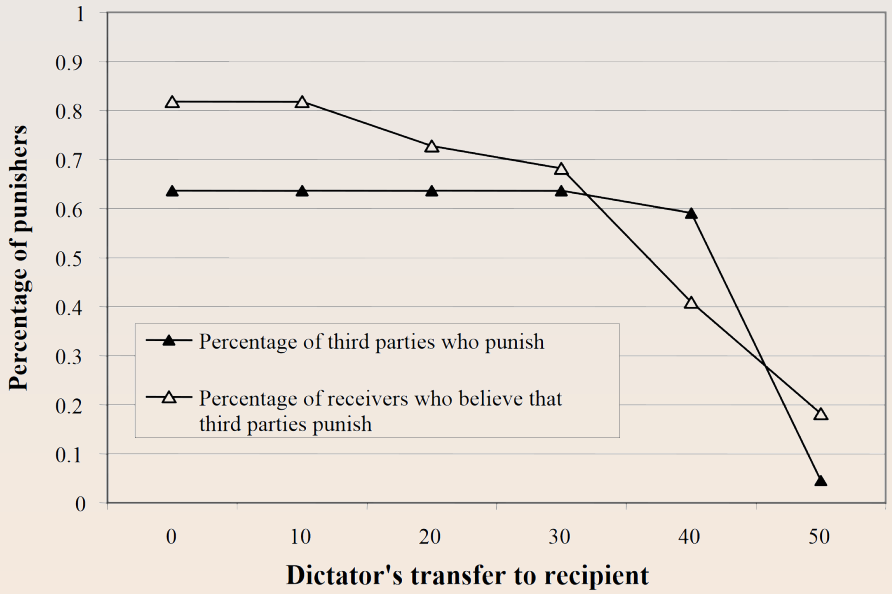
We see higher thresholds in the reputation treatment whether or not it comes first; 82% of subjects increased their threshold in the reputation treatment

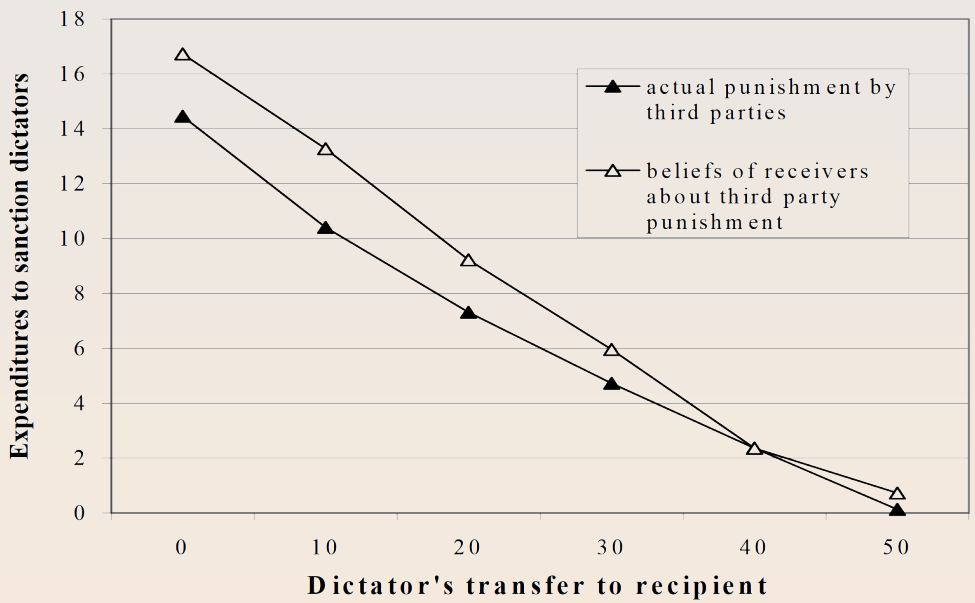
Reputation and punishment by others

Fehr and Fischbacher (2004) looks at third-party punishment

- Three player dictator game: dictator A, recipient B, third party C
- A starts with 100, B 0, C 50
- A can make a transfer to B; C observes and can punish A (elicited with the strategy method)
- Each punishment point costs C 1 point and costs A 3 points
- B's beliefs about how C acted are also elicited with the strategy method

Fehr & Fischbacher (2004)





- Transfers below 50 receive punishment; lower transfers are punished more
- *B* believes this but slightly overestimates punishment

Modeling fairness attitudes

One possible class of social preference models is those in which a person's utility depends on the outcome for all players

- That is $U_i = f(x_i, x_{-i})$
- But how should we make U_i (payoff to i) depend on x_{-i} (what other people get)?
  1. The difference in payoff between i and all other players?
  2. The payoff of the least well-off player?
  3. i's share of the total payoff?
  4. The total payoff earned by others?

Inequality aversion

Fehr and Schmidt (1999) propose a model of inequality aversion; here's the form for a two player case:

$$U_i(x_i, x_j) = \begin{cases} x_i - \alpha_i(x_j - x_i) \text{ if } x_i \leq x_j \\ x_i - \beta_i(x_i - x_j) \text{ if } x_i > x_j \end{cases} \tag{1}$$

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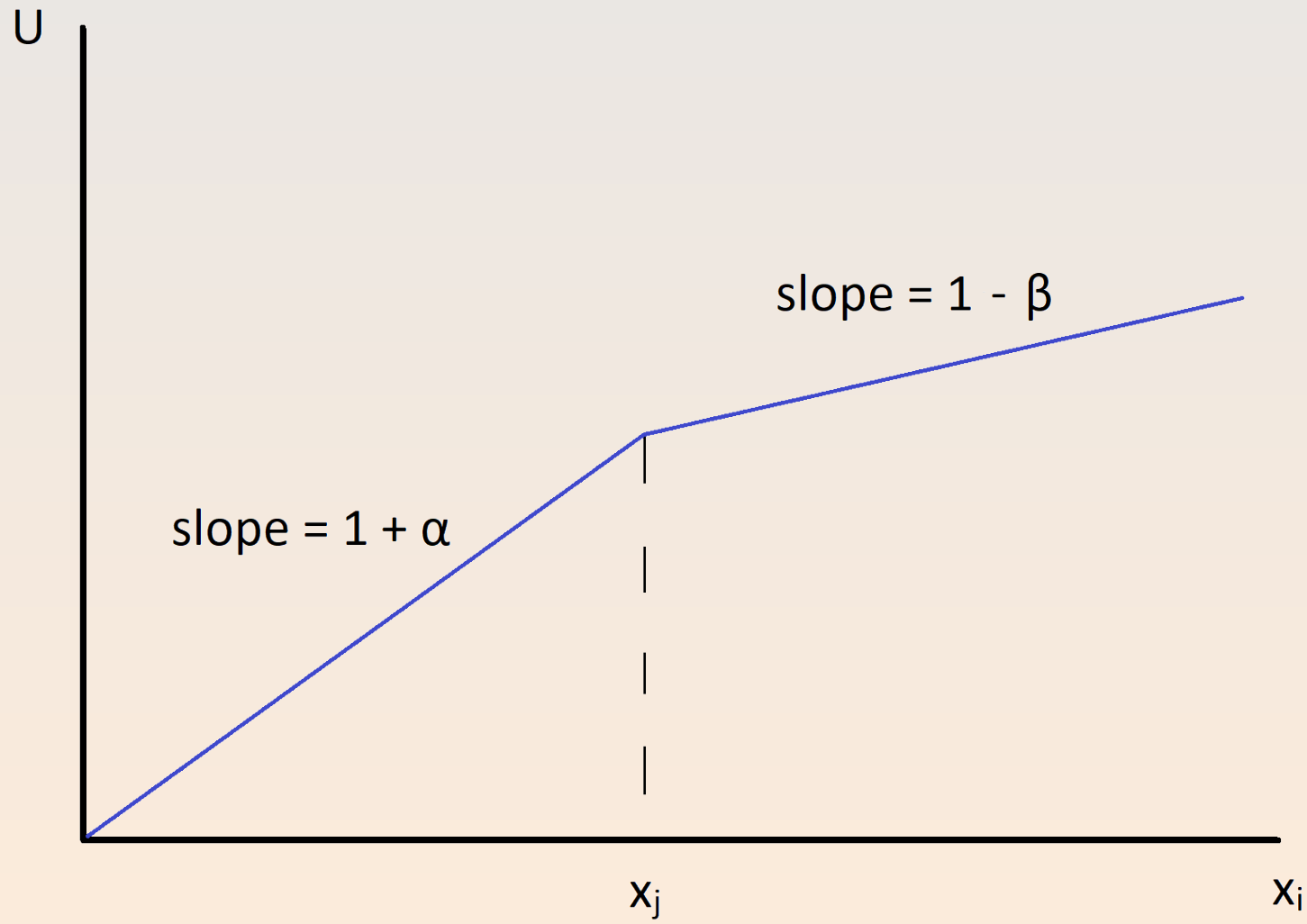
- α_i is a parameter for the amount that i suffers from disadvantageous inequality (having less than the other player)
- β_i is a parameter for the amount that i suffers from advantageous inequality (having more than the other player)
  - Authors assume $\alpha_i \geq \beta_i \geq 0$
  - And $\beta_i < 1$ which rules out burning money to reduce inequality

The Fehr-Schmidt utility function



Fehr-Schmidt in the ultimatum game

Applying this framework to the ultimatum game with \$10 pie

- Say that player 1 proposes s for themselves and $10 - s$ for player 2

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- Let's think about P2 incentives first; utility of player 2 is given by

$$U_2(x_1, x_2) = x_2 - \alpha_2 \max\{x_1 - x_2, 0\} - \beta_2 \max\{x_2 - x_1, 0\} \tag{2}$$

$$= (10 - s) - \alpha_2 \max\{s - (10 - s), 0\} - \beta_2 \max\{(10 - s) - s, 0\} \tag{3}$$

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- Rejecting the offer means $x_1 = x_2 = 0$ and so player 2 would get $U_2 = 0$
- To calculate the utility of accepting the offer, we need to know whether it is more or less than \$5, since that determines which part of the utility function is activated

Fehr-Schmidt in the ultimatum game: player 2

Case 1: $s < 5$, so that P2 is getting more than P1; utility of accepting is

$$U_2 = (10 - s) - \beta_2((10 - s) - s) \tag{4}$$
$$= (1 - \beta_2)(10 - s) + \beta_2 s \tag{5}$$

This is bigger than zero for sure since $\beta_2 < 1$; P2 always accepts the offer

Fehr-Schmidt in the ultimatum game: player 2

Case 2: $s > 5$, so that P2 is getting less than P1; utility of accepting is

$$U_2 = (10 - s) - \alpha_2(s - (10 - s)) \tag{6}$$

$$= (1 - \alpha_2)(10 - s) - \alpha_2 s \tag{7}$$

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This is less than 0 if

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- For a given α_1, this is the most that player 1 can get
- For $\alpha_2 = 0$ this is 10
- For $\alpha_2 \to \infty$ this tends to 5

Fehr-Schmidt in the ultimatum game: player 1

- Player 1 can guarantee themselves 5 by proposing $s = 5$ which is accepted by any Fehr-Schmidt player 2
- Their optimal offer depends on the α_2 parameter of the responder but also perhaps on their own β_1 parameter

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If P1 is getting more than P2

$$U_1 = s - \beta_1(s - (10 - s)) \tag{9}$$

$$= x - \beta_1(2s - 10) \tag{10}$$

$$\frac{dU_1}{ds} = 1 - 2\beta_1 \tag{11}$$

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- For $\beta_1 < \frac{1}{2}$, P1's utility is higher when s is higher, and they will therefore propose $s = \frac{(1+\alpha_2)}{(1+2\alpha_2)}10$
- For $\beta_1 > \frac{1}{2}$, P1 prefers to offer $s = 5$
- Since $\beta_1 < 1$, will never offer $s > 5$

Fair share

A slightly different approach is found in Bolton and Ockenfels (2000); they call it ERC for equity, reciprocity, and competition

- n players, $i = 1, ..., n$; payoffs $x_i \geq 0$ for all i;

$$U_i = U_i(x_i, s_i), \tag{12}$$

  where $s_i = \frac{x_i}{\sum x_j}$ (or $s_i = \frac{1}{n}$ if $\sum x_j = 0$)
- U_i assumed weakly increasing in x_i and concave in s_i with a maximum at $s_i = \frac{1}{n}$

Equity and efficiency concerns

Carness and Rabin (2002) model DM who cares about their own payoff, total payoff, and the lowest payoff

- First: $W(x_1, ..., x_n) = \delta \min\{x_1, ..., x_n\} + (1 - \delta) \sum x_i$
- This other-regarding part puts some weight on the least well-off person and some weight on the total payoff
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- This other-regarding part puts some weight on the least well-off person and some weight on the total payoff
- Somewhat like equity and efficiency concerns (with the extreme Rawlsian version of inequity aversion)
- Then: $U_i = (1 - \lambda)x_i + \lambda W$
- Some weight on own payoff and some weight on the other-regarding part

Economic incentives and social preferences

A standard economic 'truism' is that people respond to incentives—but how do different types of incentives interact?

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- On the other hand: social or moral incentives

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- On one hand: pecuniary incentives
- On the other hand: social or moral incentives
- There is pretty robust evidence that in some situations the introduction or presence of cash incentives can crowd out intrinsic motivation to 'be good' or 'do the right thing'
- At the very least one should probably not automatically assume that cash incentives will work in the direction or at the magnitude that is intended

Crowding out

Bowles and Polonía-Reyes (2012) survey the evidence on whether economic and social incentives are substitutes or complements

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- There is pretty robust evidence that in some situations the introduction or presence of cash incentives can crowd out intrinsic motivation to 'be good' or 'do the right thing'
- In other settings, can crowd in incentives
- But the idea of pay-for-performance was really deeply baked in to standard economics (principal-agent contract theory models)

The daycare example

An extremely famous example of evidence consistent with this kind of thing is from Gneezy & Rustichini (2000)

- 10 private day-care centers in Haifa, Israel, January to June 1998
- Similar centers, same part of town
- Fee about $380 per month in U.S. dollar equivalent
- Contract says day-care is 0730-1600 with no mention of what happens if you're late to pick up
- A teacher has to wait until children are picked up

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- Contract says day-care is 0730-1600 with no mention of what happens if you're late to pick up
- A teacher has to wait until children are picked up
- First 4 weeks: record number of parents arriving late
- Week 5: Introduce fine for lateness in 6 of 10 daycares, posted on bulletin board; about $3 equivalent
  - Money paid to principal, rolled in to monthly fees, not to teacher who waits with the child
- Week 17: remove fine with no explanation

Gneezy & Rustichini (2000)

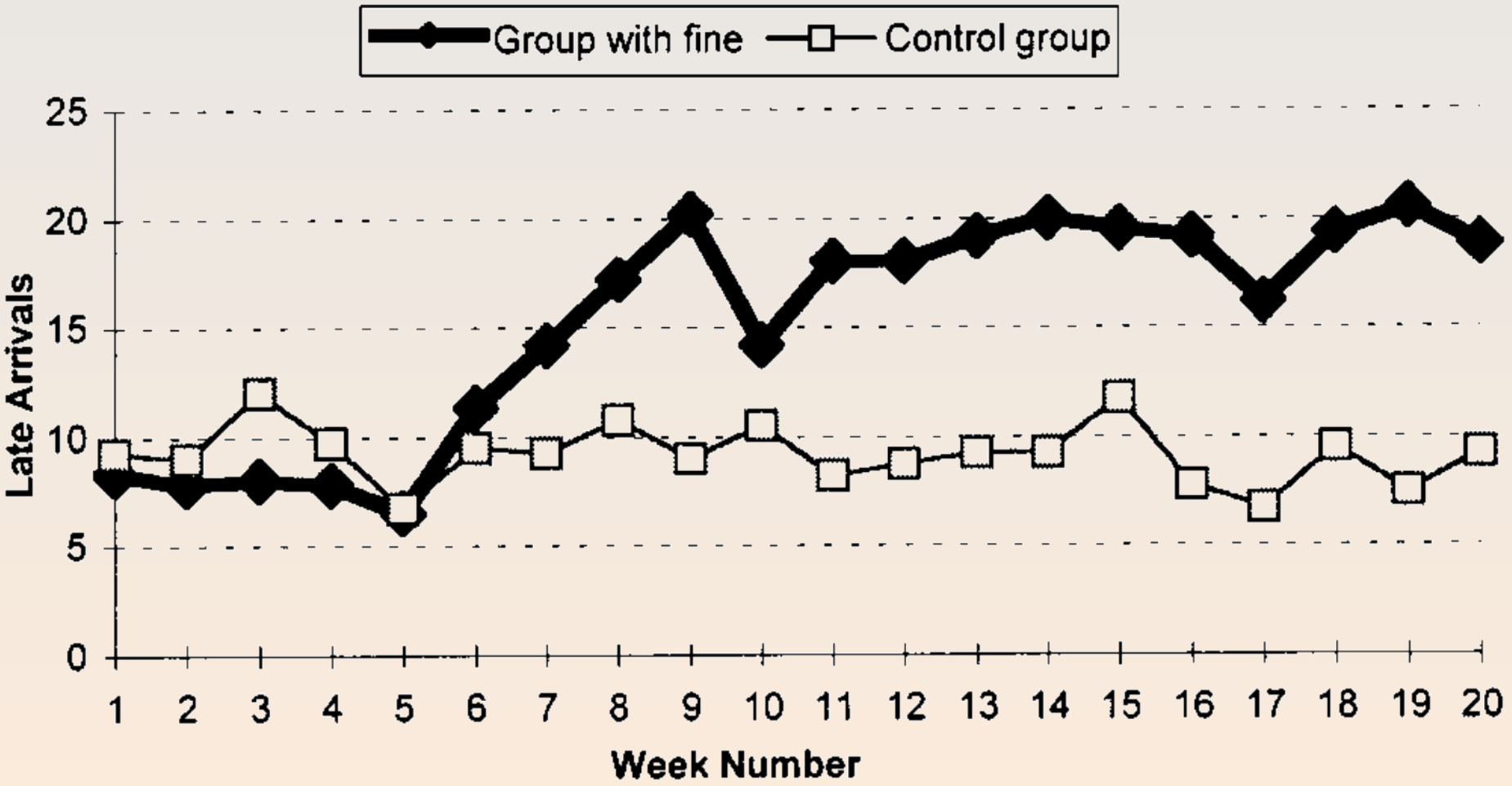

FIGURE 1.—Average number of late-coming parents, per week

Gneezy & Rustichini (2000)

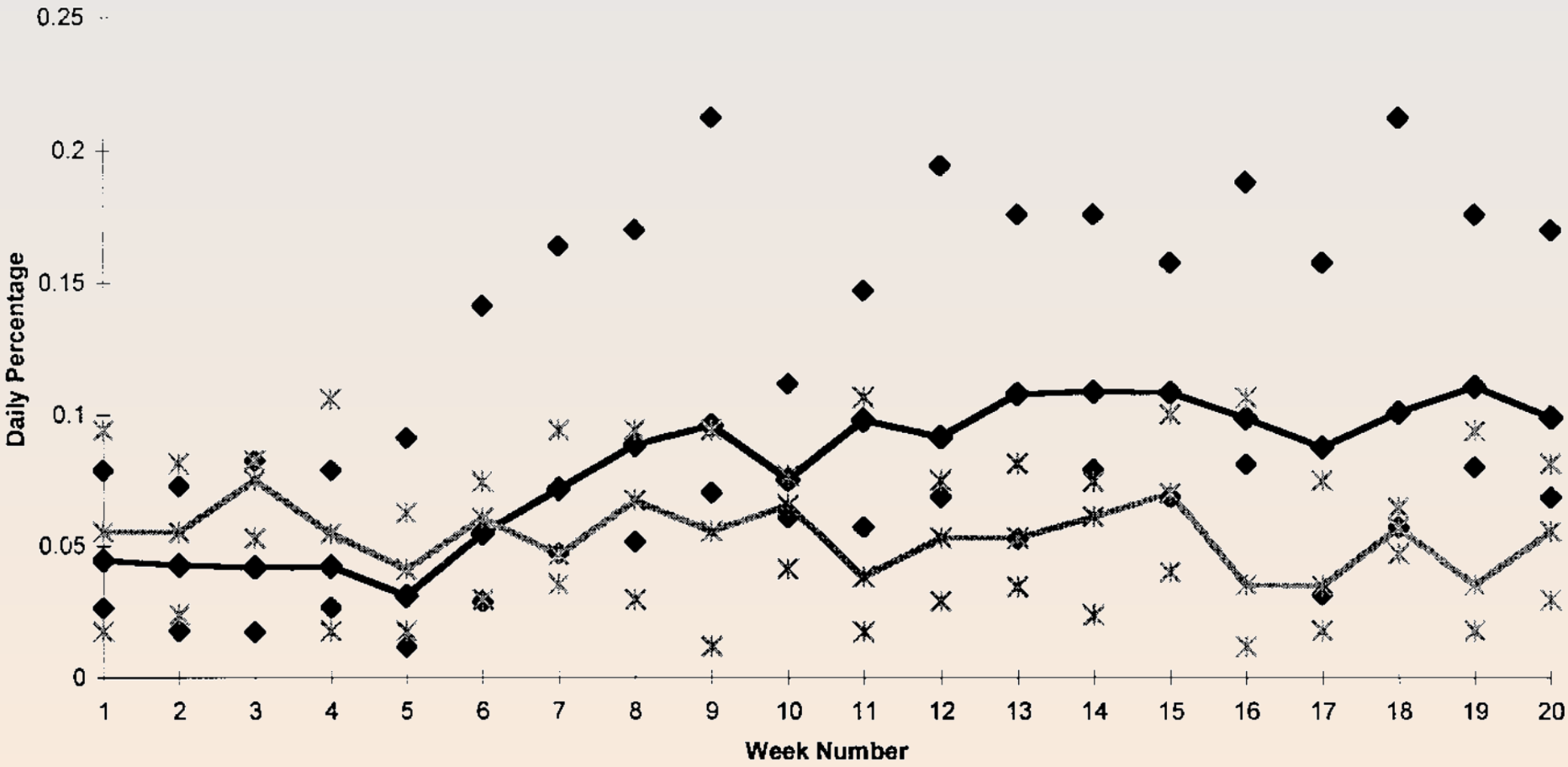

FIGURE 2.—Median value of delay for the test (dark line) and the control (light line) groups. The diamonds and the crosses indicate the extreme values for the test and the control groups, respectively.

Crowding out

Frey and Jegen (2001) go through psychological framework

- Two psychological processes that might influence response:
  1. Impaired self-determination: substitution of extrinsic for intrinsic motivation
  2. Impaired self-esteem: extrinsic reward makes the person feel like their intrinsic motivation or involvement is not being recognized

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- Two psychological processes that might influence response:
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- What should we then expect?
  1. External intervention perceived as controlling: self-determination and self-esteem suffer, intrinsic motivation crowded out
  2. External intervention perceived as supportive: self-esteem and self-determination fostered, intrinsic motivation crowded in

Social norms

Frey and Oberholzer-Gee (1997): evidence of crowding out of intrinsic motivation

- 305 interviews in Switzerland in 1993 about building of a low- and mid-level nuclear waste repository in subject's community
- Demographics collected (subsamples found representative of their communities)
- Survey conducted one week before actual referendum on the subject, so respondents likely well-informed and hypothetical questions might not be totally off base

Question with and without compensation

Question 1: ''Suppose that the National Cooperative for the Storage of Nuclear Waste (NAGRA), after completing exploratory drilling, proposes to build the repository for low- and mid-level radioactive waste in your hometown. Federal experts examine this proposition, and the federal parliament decides to build the repository in your community. In a townhall meeting, do you accept this proposition or do you reject this proposition?''

Question 2: ''Suppose that the National Cooperative for the Storage of Nuclear Waste (NAGRA), after completing the exploratory drilling, proposes to build the repository for low- and mid-level radioactive waste in your hometown. Federal experts examine this proposition, and the federal parliament decides to build the repository in your community. Moreover, the parliament decides to compensate all residents of the host community with 5,000 francs per year and per person. Your family will thus receive xxx francs per year. The compensation is financed by all taxpayers in Switzerland. In a townhall meeting, do you accept this proposition or do you reject this proposition?'' (The size of compensation was varied as described above; total compensation per family was automatically computed by the laptop computer the interviewer used. The payments were said to be continued during the lifetime of the facility.)

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  - Amount offered varied from $2,175 per person per year, to $4,350, to $6,525 (median household income $4,565 per month)
  - 24.6% in favor, 44.9% opposed, 4.3% didn't care
  - For those who rejected the offer, another question asked with a better cash offer (one third increase)
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  - For those who rejected the offer, another question asked with a better cash offer (one third increase)
  - Only one respondent switched from decline to accept
- Strategic explanation? (holding out for compensation)
  - 4.9% said insufficient compensation for why they declined
  - Opposition was least when compensation wasn't offered
- Signaling? (interpret compensation as higher risk)
  - 6.3% agreed when asked if they perceived a link between amount of compensation and level of risk

Question with and without compensation

TABLE 1—DETERMINANTS OF ACCEPTANCE TO HOST A NUCLEAR WASTE REPOSITORY—RESULTS OF A LOGIT ANALYSIS

Independent variables	Willingness to accept facility without compensation (I)		Willingness to accept facility with compensation (II)	
	Estimate (S.E.)	Change in probability of acceptance in percent (*t*-ratio)	Estimate (S.E.)	Change in probability of acceptance in percent (*t*-ratio)
Constant	16.35 (28.03)		16.78 (22.85)	
Individual risk estimate (''1 = very low'' to ''6 = very high''; effect of 1-point increase reported)	−0.72** (0.13)	−7.1** (−5.57)	−0.28** (0.11)	−4.4** (−2.54)
Negative economic impacts Expected DY, 1 = yes, 0 = otherwise	−1.32** (0.45)	−13.0** (−2.95)	−1.10* (0.47)	−17.5* (−2.35)
Home ownership DY, 1 = yes, 0 = otherwise	−1.25** (0.44)	−12.4** (−2.83)	−0.59 (0.32)	−9.4 (−1.79)
Political orientation (''1 = left'' to ''6 = right'')	0.05 (0.14)	+1.0 (0.33)	0.13 (0.12)	+2.0 (1.05)
Income $870 per month	−0.01 (0.04)	0 (−0.33)	0.01 (0.03)	0 (0.12)
Age	−0.01 (0.01)	0 (−0.48)	−0.01 (0.01)	0 (−0.66)
Sex (Effect of being female)	−0.33 (0.39)	−3.2 (−0.84)	−0.23 (0.32)	−3.6 (−0.72)
General support for nuclear technology DY, 1 = yes, 0 = otherwise	1.13** (0.41)	+11.2** (2.76)	−0.21 (0.32)	−3.3 (−0.64)
Quality of current siting procedure (''1 = not acceptable at all'' to ''6 = completely acceptable''; effect of 1-point increase reported)	0.62** (0.13)	+6.2** (4.95)	0.04 (0.10)	+1 (0.42)

Difference between treatments in these last two rows interpreted as crowding out: they are factors that could generate civic-minded support, so prime candidates for motivational crowding out

Social norms

Another type of social preference is the pressure to adhere to social norms

- Can implement this with a modified utility function:

$$U = u(x) - \gamma(x - \bar{x})^2 \tag{13}$$

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- This has
  1. Symmetric utility loss from deviating from the norm $\bar{x}$ in either direction
  2. Utility cost getting worse the larger the deviation
- Where does the norm come from?
  - Identity, culture, societal average...
- Can be useful at explaining behavior but need some idea of where the norm comes from or else a bit ad hoc

Social norms in a dictator game

Krupka and Weber (2013) apply this idea in a dictator game lab experiment

- First, elicit the social norm
  1. Ask subjects to predict how socially acceptable other subjects will find a choice in the dictator game
  2. Incentivized by paying for prediction accuracy
  3. Transformed into an index measure of acceptability
- Four point scale and weights in the conversion: very socially inappropriate (-1), somewhat socially inappropriate $(-\frac{1}{3})$, somewhat socially appropriate $(\frac{1}{3})$, very socially appropriate (1)
- Two different frames on the same cash payoffs: dictator and bully games
- End up with measure $s(a)$ of social acceptability for each action

Elicited norms

Action (final wealth)	Standard ($n = 107$) (Initial wealth: \$10, \$0)					
	Action	**Mean**	$--$	$-$	$+$	$++$
\$10, \$0	"Give \$0"	**−0.80**	82%	10%	3%	5%
\$9, \$1	"Give \$1"	**−0.64**	61%	31%	3%	6%
\$8, \$2	"Give \$2"	**−0.44**	35%	51%	10%	4%
\$7, \$3	"Give \$3"	**−0.16**	8%	62%	26%	4%
\$6, \$4	"Give \$4"	**0.14**	3%	30%	61%	7%
\$5, \$5	"Give \$5"	**0.87**	0%	3%	14%	83%
\$4, \$6	"Give \$6"	**0.57**	0%	7%	50%	43%
\$3, \$7	"Give \$7"	**0.42**	1%	22%	39%	37%
\$2, \$8	"Give \$8"	**0.32**	6%	31%	23%	40%
\$1, \$9	"Give \$9"	**0.22**	17%	24%	19%	40%
\$0, \$10	"Give \$10"	**0.18**	26%	13%	18%	43%

Elicited norms

Bully ($n = 92$) (Initial wealth: \$5, \$5)					
Action	**Mean**	$--$	$-$	$+$	$++$
"Take \$5"	**−0.90**	91%	5%	0%	3%
"Take \$4"	**−0.83**	82%	14%	1%	3%
"Take \$3"	**−0.67**	55%	40%	3%	1%
"Take \$2"	**−0.38**	28%	53%	16%	2%
"Take \$1"	**−0.09**	12%	46%	36%	7%
"Give \$0" / "Take \$0"	**0.93**	0%	0%	11%	89%
"Give \$1"	**0.48**	4%	12%	40%	43%
"Give \$2"	**0.31**	7%	23%	38%	33%
"Give \$3"	**0.20**	14%	27%	23%	36%
"Give \$4"	**0.10**	27%	16%	21%	31%
"Give \$5"	**0.04**	36%	10%	16%	38%

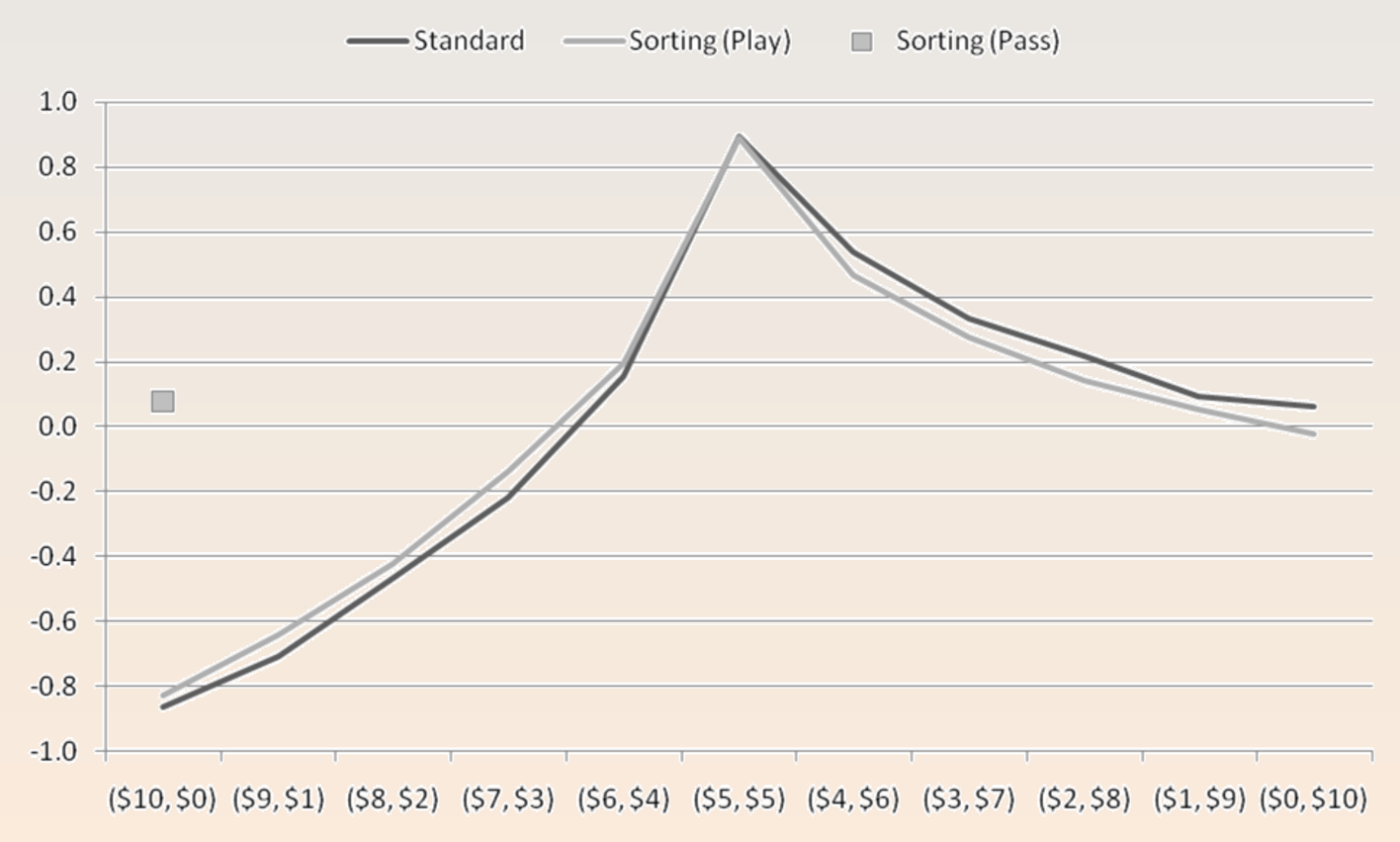
Social norms in dictator variants

Check how well behavior is explained by a model with weight on own payoff and the measure of acceptability:

$$U(a) = u(x) + \gamma s(a) \tag{14}$$

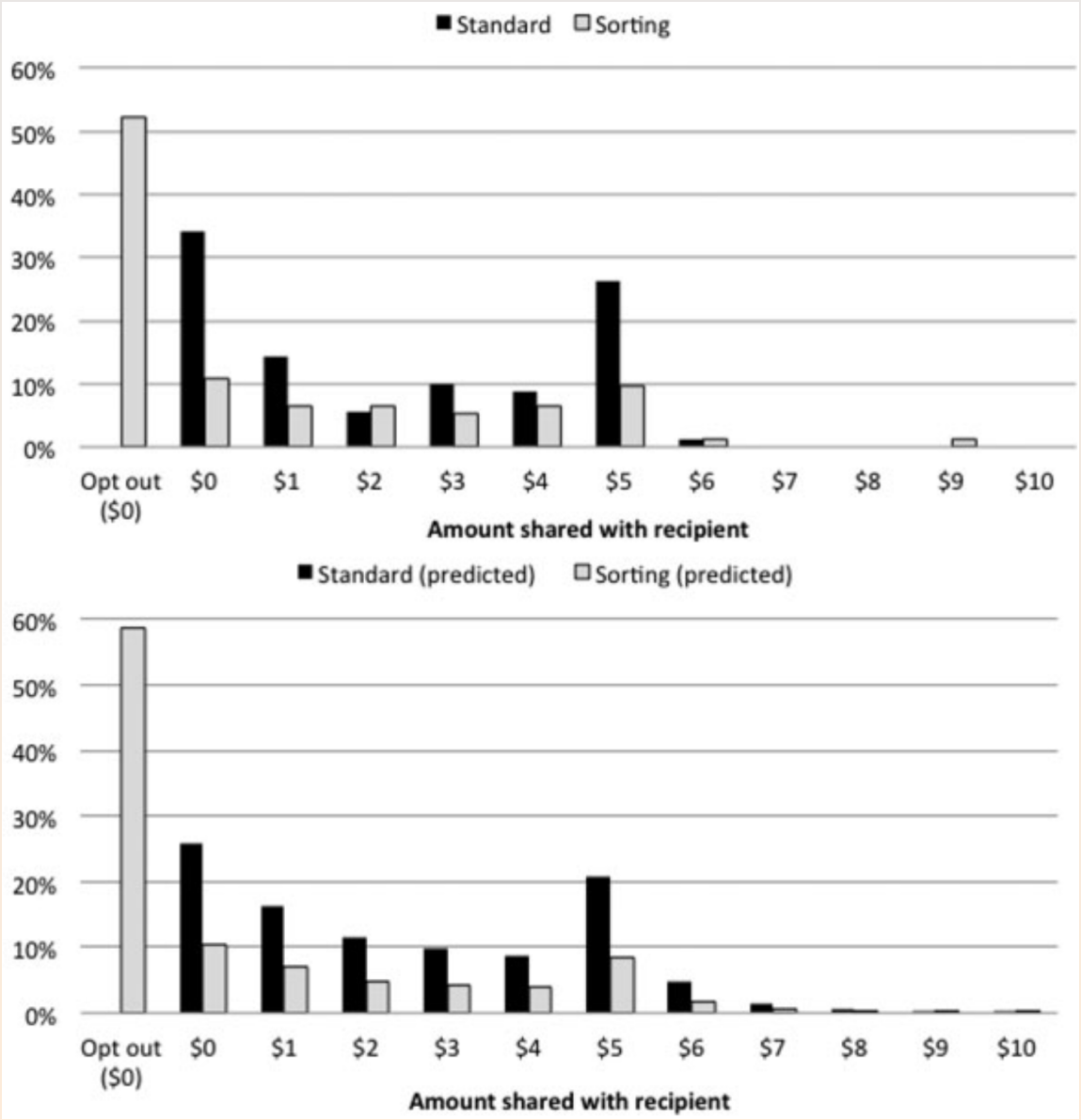
- Elicit norms and compare to behavior also for two variations on the dictator game:
  1. Dictator game with sorting (Lazear et al. 2012): player 1 can choose to 'opt out' of the game and keep the \$10 stake without making any further choice
  2. Take \$1 variant (List 2007): adds an option for player 1 to take a dollar from player 2 (i.e. proposing -\$1)
- How do you think elicited norms were different in these variations?

Elicited norms with sorting

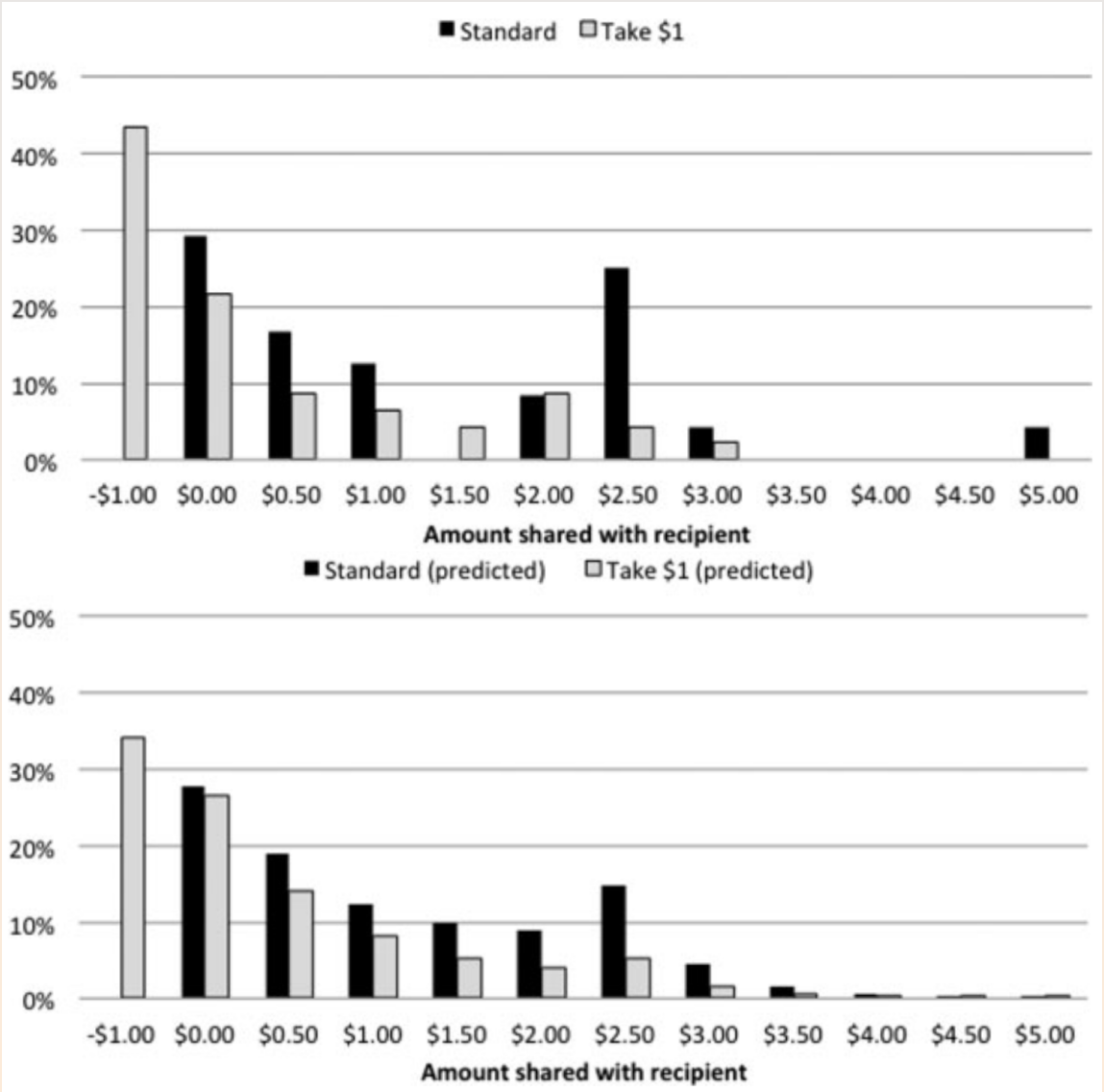


Opting out seen as much more acceptable than giving $0

Data vs. model with sorting



Data vs. model with take $1

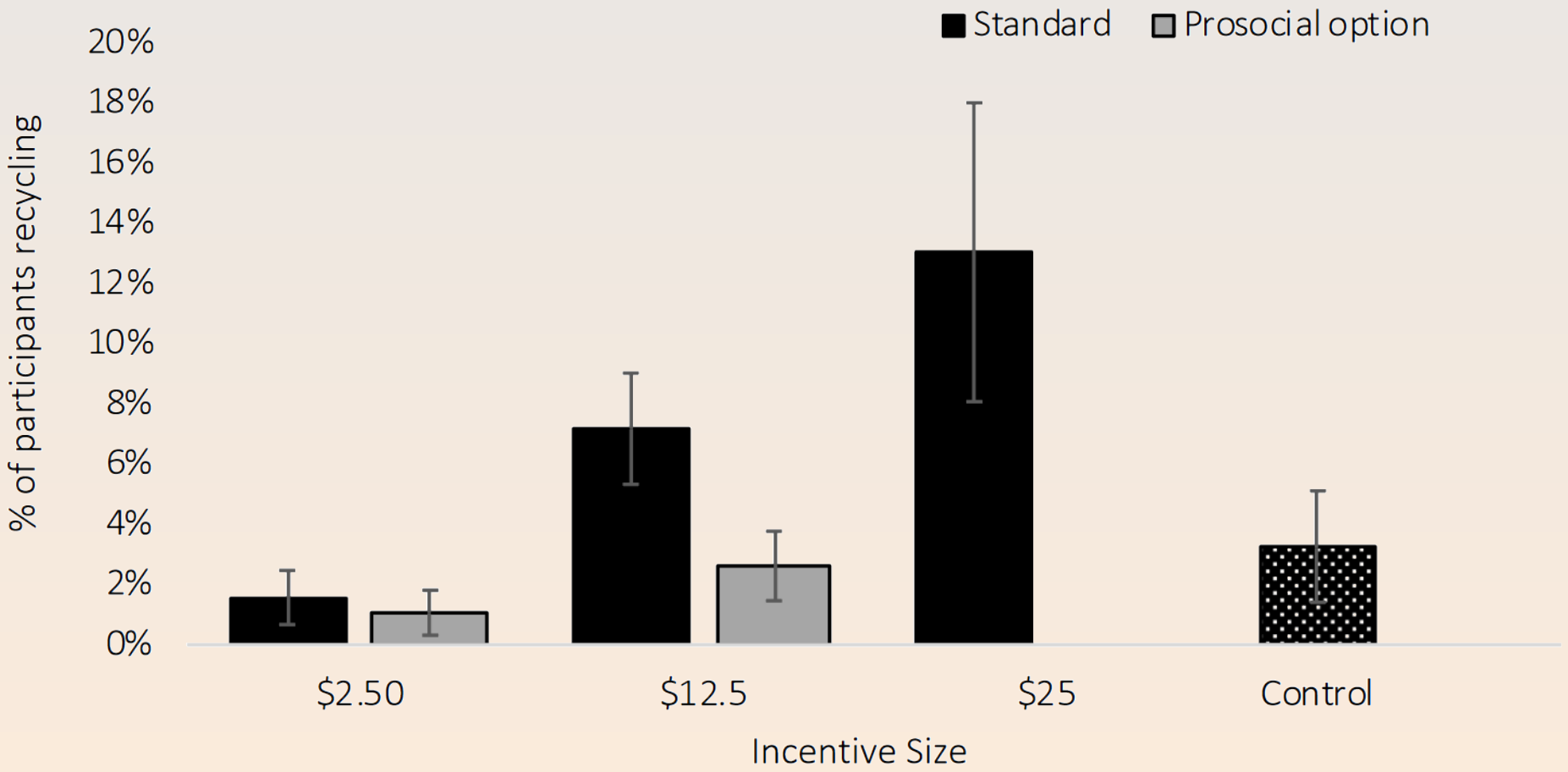


Prosocial incentives

Schwartz, Keenan, Imas, and Gneezy (2019): study effect of optional prosocial incentives

- Experiment 1: recycling program
  - 1000 apartments from 25 buildings in Chile
  - Invited to bring recycling to a point 0.1 or 0.7 miles away from their building at a later, specified date
  - Six conditions: incentive level \$2.50, \$12.50, or \$25 and standard vs. optional prosocial, plus a seventh control
  - Optional prosocial said "if you prefer, you can also donate this money to an environmental cause" (a list of causes was given)

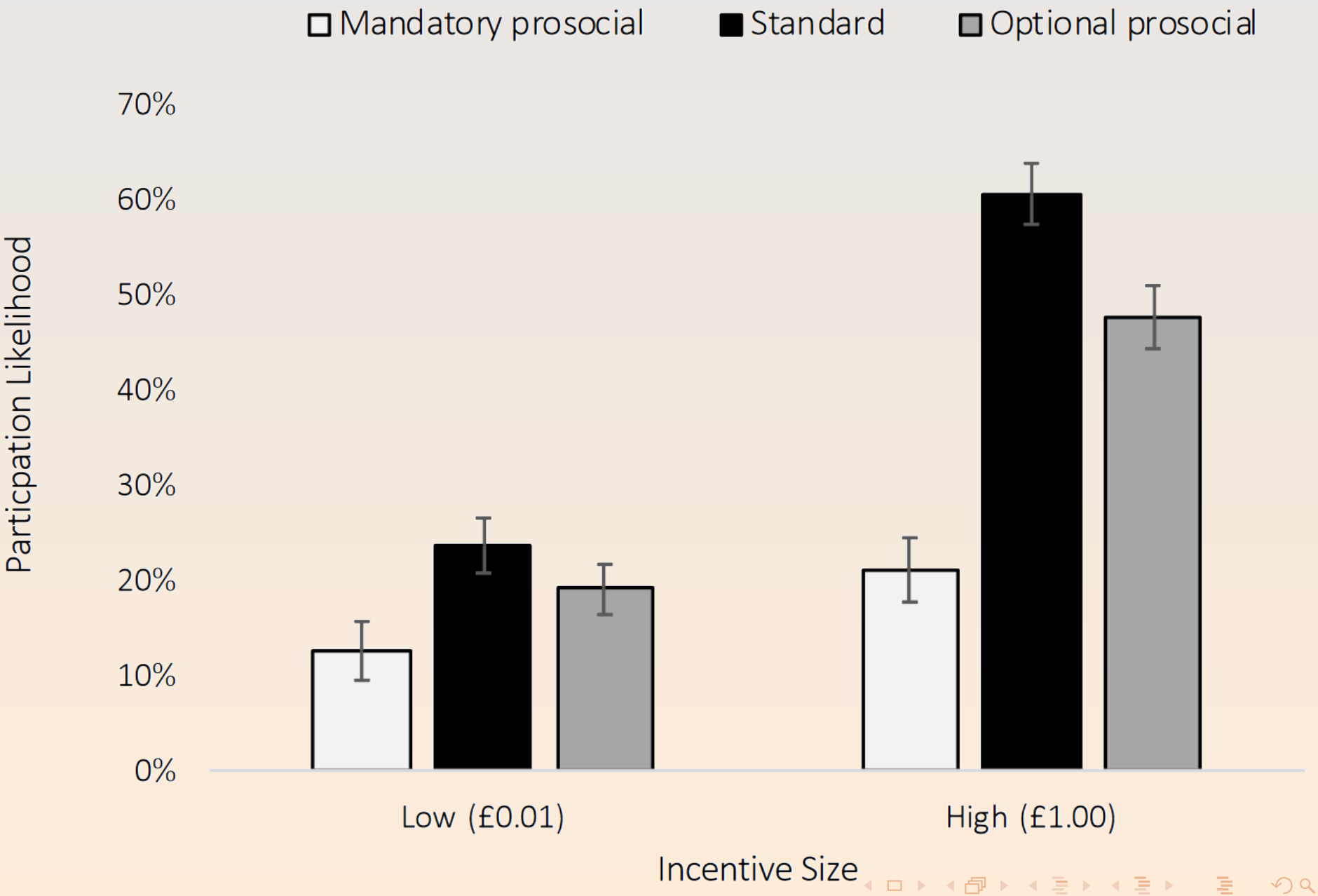
Schwartz, Keenan, Imas, and Gneezy (2019)



Prosocial incentives

- Experiment 2: 1,345 people hired to do an online task via Prolific Academic online labor market in the UK
  - Workers had to review online image links for a database for a flat fee of 0.50 GBP
  - After the task, given the opportunity to work on another unrelated task, providing URLs for 25 images to add to the database
  - Three incentive conditions: standard, mandatory prosocial, and optional prosocial, and two intensities, 0.01 GBP and 1.00 GBP
  - Beneficiary was Make-A-Wish Foundation; in optional condition, could either keep or give

Schwartz, Keenan, Imas, and Gneezy (2019)



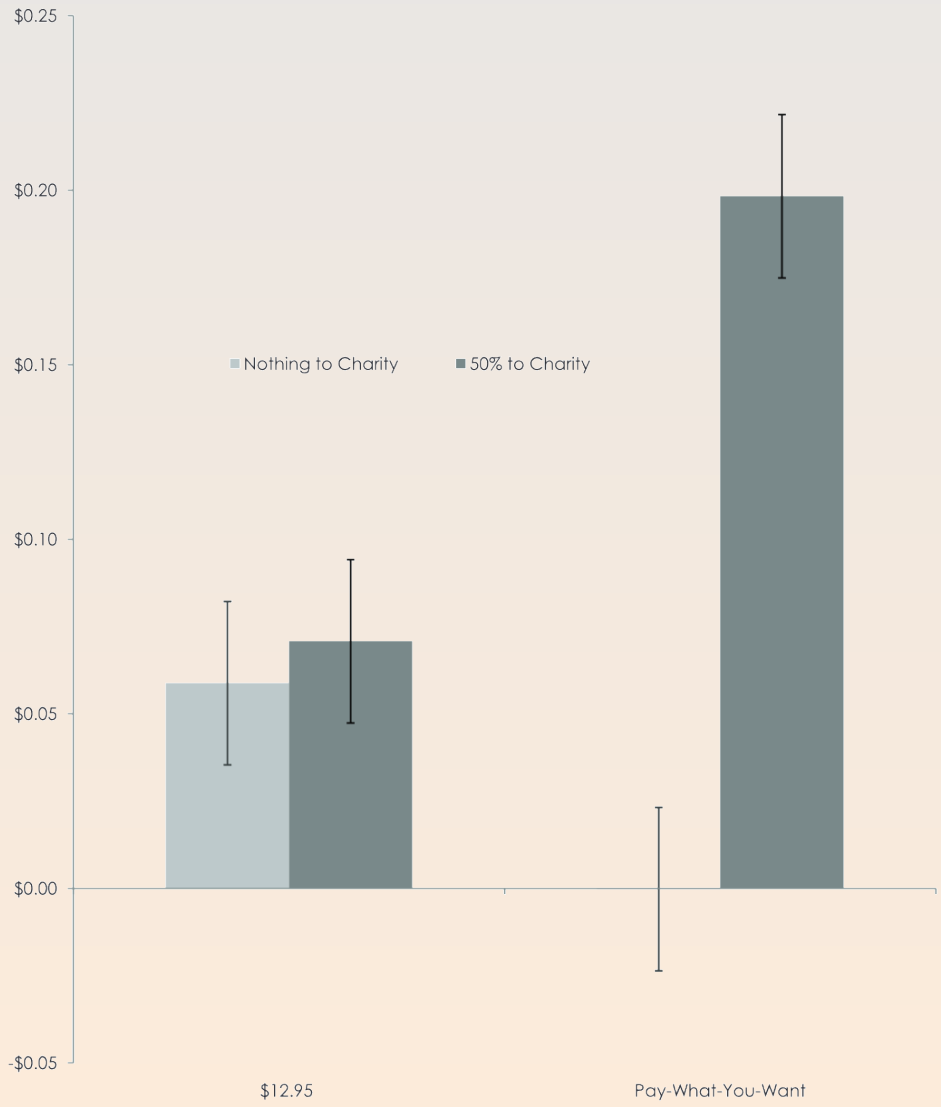
Pay-what-you-want and charitable giving

Gneezy, Gneezy, Nelson, and Brown (2010): field experiment manipulating the market for souvenir photos at a theme park

- 113,047 rollercoaster riders with the chance to buy their ride photo after riding
- 2x2 between participants design that varies
  1. Fixed price ($12.95) versus pay-what-you-want (including $0)
  2. Half of revenue went to charity vs none
- PWYW plus half to charity was the most profitable
- Extrapolated up to 5m riders per year this amounts to $600,000 in extra profits versus the fixed price status quo
- Mechanism? Could be that adding charity to PWYW discourages low valuation customers from buying at a really low price and sending a bad signal about how charitable they are

Gneezy, Gneezy, Nelson, and Brown (2010)

Fig. 1. Profit per rider (amount paid minus production costs). Photo sales were most profitable for the firm and made the largest contribution to charity when participants could pay what they wanted and half of their payment went to charity—the shared social responsibility treatment.



Gneezy, Gneezy, Nelson, and Brown (2010)

Table 1. Treatment effects on photo revenue and merchandise revenue. Merchandise refers to items such as souvenir keychains whose prices were not directly manipulated in the experiment. There were essentially no differences in merchandise sales over the same days. If anything, people spent slightly more on merchandise in the PWYW + Charity condition. We can likely rule out concerns that increased photo revenue was cannibalizing from other sources.

Treatment	Photo revenue	Merchandise revenue	Riders	Merchandise revenue per rider
$12.95	$1823	$11,280.98	28,224	$0.40
$12.95 + Charity	$2331	$12,322.72	30,592	$0.40
PWYW	$2175.80	$11,833.90	28,263	$0.42
PWYW + Charity	$6224.22	$11,694.03	25,968	$0.45

Pay-what-you-want

A rich literature on PWYW pricing has developed in recent years; a couple of examples:

- Samahita (2020): model of competition including possibility of PWYW pricing
  - Assumes some fraction of consumers always free ride
  - But some fraction will pay 'fairly', consuming only if their utility exceeds the marginal cost of the good and splitting the surplus equally with the seller
  - There can be an equilibrium in which first movers set a fixed price and late movers use PWYW pricing to avoid Bertrand competition
- Regner (2015): evidence from Magnatune, an online music store; PWYW between \$5 and \$18
  - Survey responses and payment behavior from 227 customers
  - Evidence that reciprocity drives greater than minimum voluntary payments
  - Inclination to conform to social norms drives payments around the \$8 'recommended' price