Econ 219B
Psychology and Economics: Applications (Lecture 8)

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Outline

1. Gift Exchange: Workplace II
2. Gift Exchange: Charitable Giving
3. Social Preferences Wave IV: Social Pressure, Signaling, and Social Norms
4. Social Pressure: Various
5. Social Pressure: Charitable Giving
6. Social Signaling
7. Social Norms

Section 1

Workplace: Gift Exchange II

DellaVigna, List, Malmendier, and Rao (2016)

- Address Issue 1 by informing of value of work to employer
- Address Issue 2 by estimating cost of effort function with piece rate variation
- Only then introduce gift treatments

- Introduce piece rate in design. Utility

$$\max_e u(e) = w + pe - c(e) + \alpha [ve - pe - w]$$

- First-order condition:

$$p - c'(e^*) + \alpha [v - p] = 0$$

- We vary piece rate p as well as return v

Logistics I

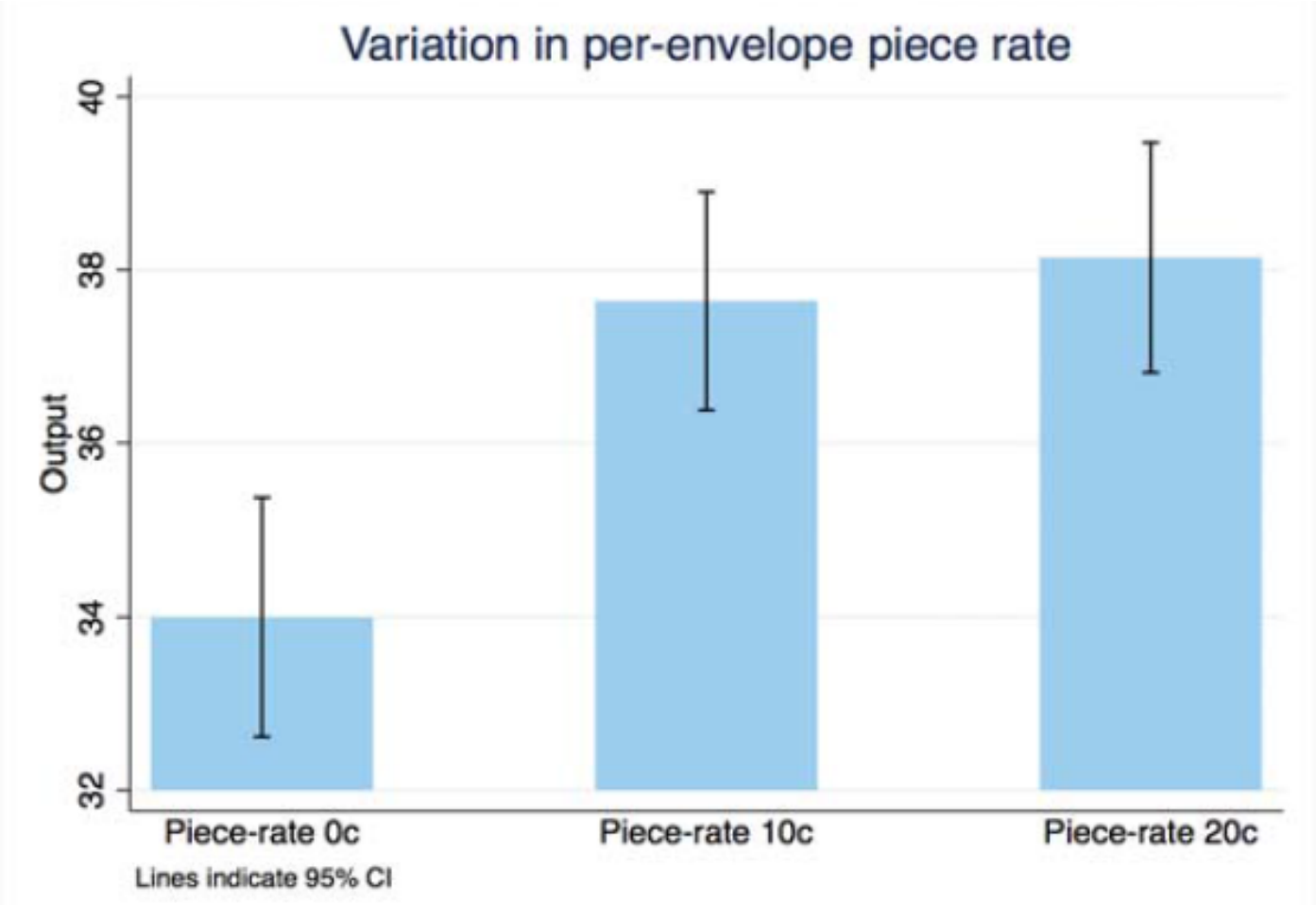
- Recruit for a one-time, 5-hour job
- Task is to fold letters, stuff into appropriate envelope, and attach mailing address
- Task is simple, but not implausible for a temp worker
- Workers are working for a charity which pays them X per envelope
- Workers are told the (expected) return Y to the charity
- Example: "The envelopes filled in this session will be used in a letter campaign of Breakthrough. As mentioned before, Breakthrough will be paying for your work. The pay is \$0.20 per envelope completed, as noted on your schedule. A number of such campaigns have been run by charities similar to Breakthrough, and historically, these charities have gotten roughly \$0.30 per mailer with such campaigns. Taking account of Breakthrough per-envelope payment for your help today, it expects to get roughly \$0.10 for each additional envelope that you prepare during this session."

Logistics II

- To estimate cost of effort, we vary the piece rate within person
  - Ten 20-minute periods of folding envelopes with 5 min breaks
  - We vary the piece rate X (0 cents vs. 10 cents vs. 20 cents)
  - We vary the return to charity Y (30 cents vs. 60 cents)
  - We introduce training sessions where output is discarded
  - Subjects work for three different charities (and a firm)
- In last 2 periods, we introduce a gift:
  - Control group – paid \$7 flat pay as before
  - Positive gift – paid \$14
  - Negative gift – paid \$3

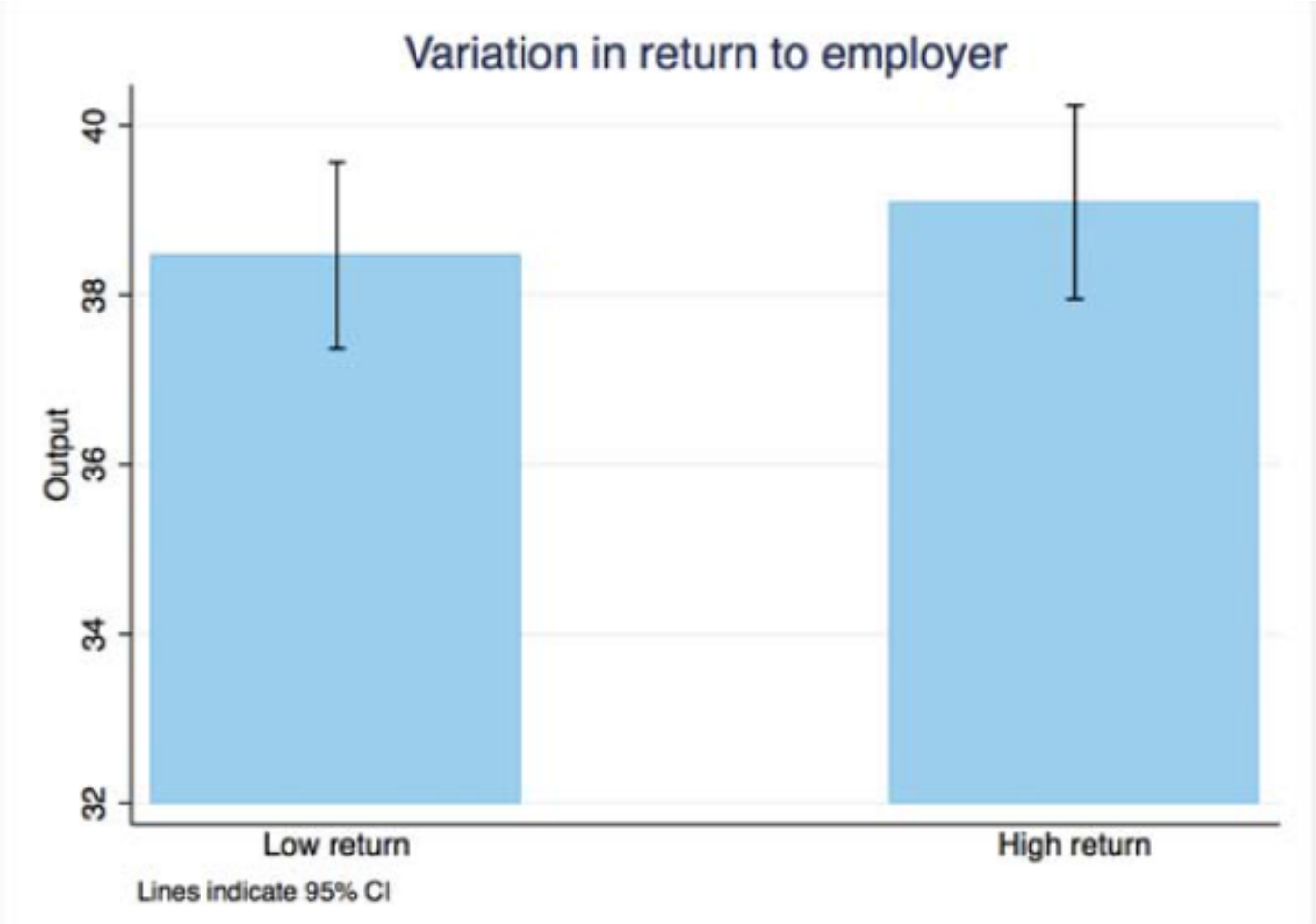
Finding 1

- Significant response to piece rate – critical pre-condition



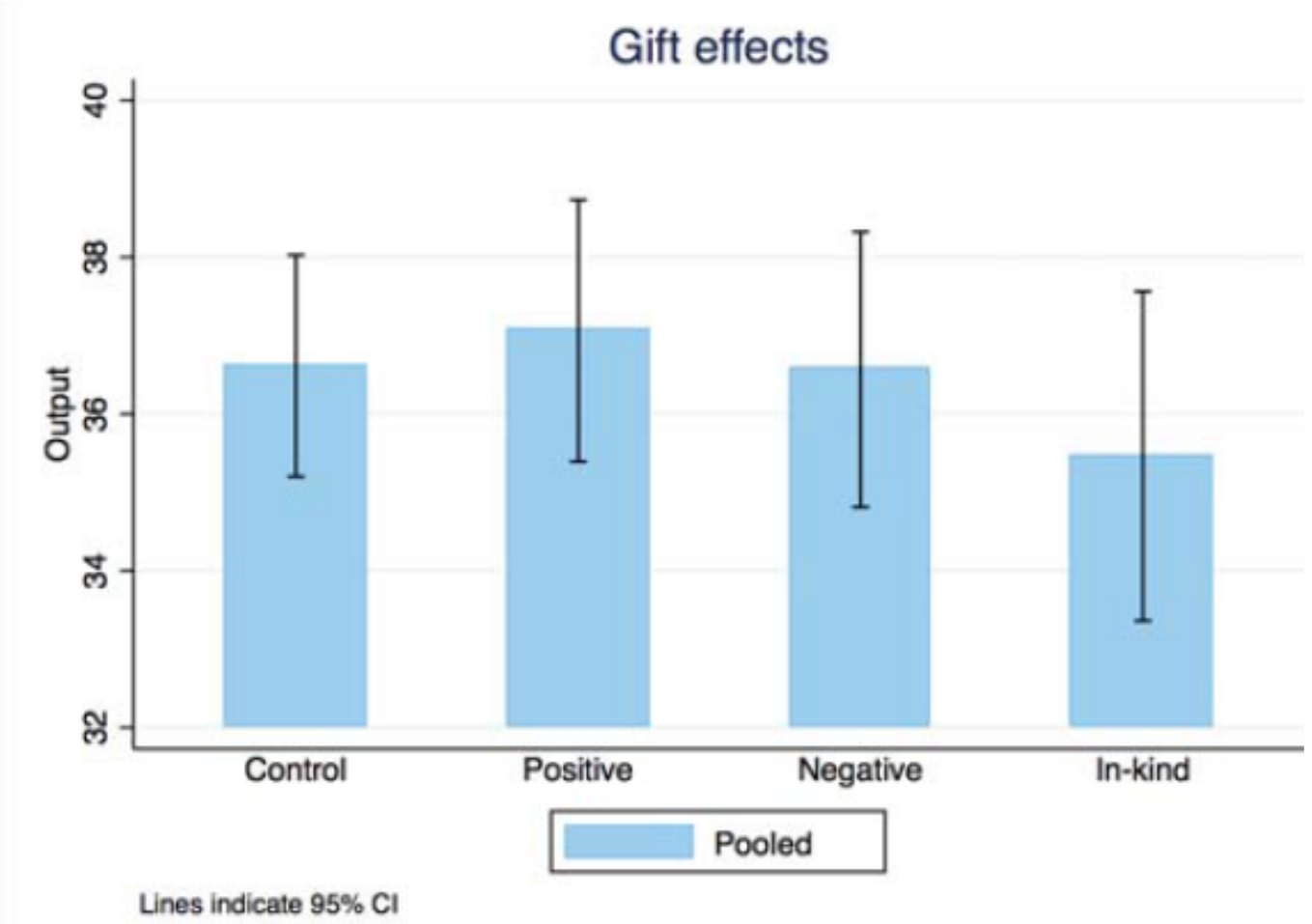
Finding 2

- Finding 2. Very small impact of match – it is not *pure altruism*



Finding 3

- No significant impact of any of the gifts



Follow-Up

- Ongoing work: Implement second design that is purely between-people
- Hire workers to code data for 2 hours for $60
- After work period is over, randomize whether gift, or not
- Then ask "Would you code some more for us up to 60 extra minutes"
  - for no extra pay
  - for 25c per minute
  - for 50c per minute
- Key variable is: How long people stay (0-60 minutes)
- Pick this variable because this margin appears to be more elastic (Abeler et al., 2011)

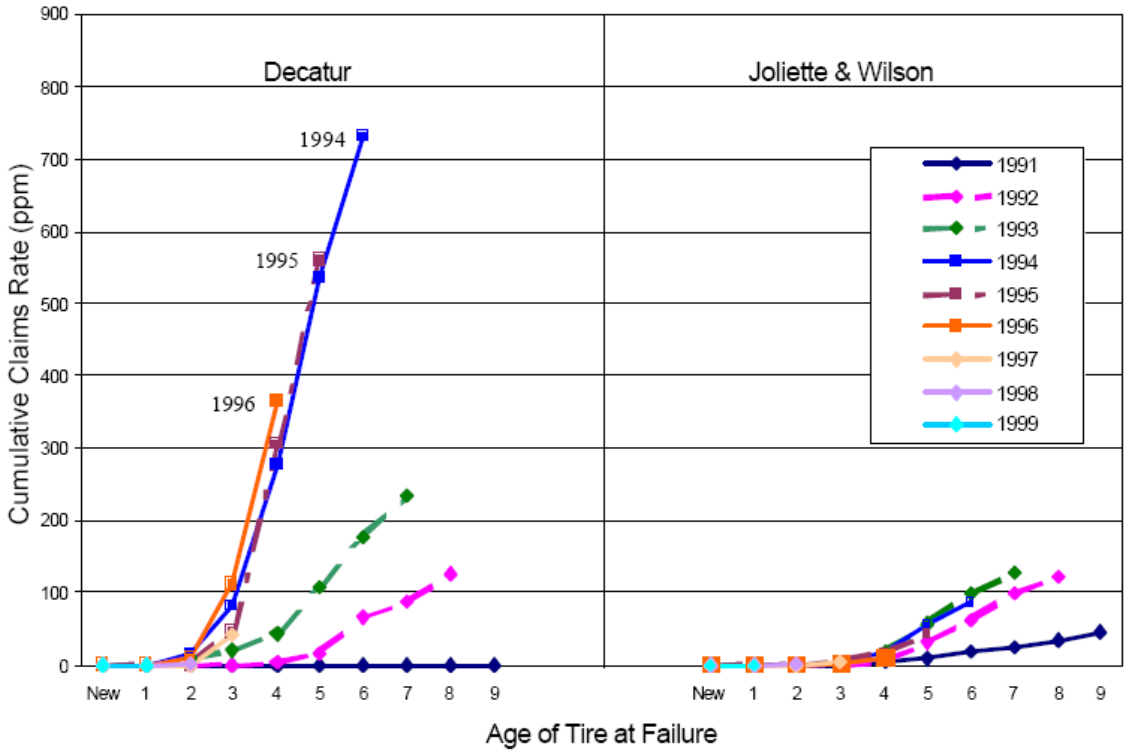
Negative Reciprocity: Sabotage?

- Is there evidence in a workplace of negative reciprocity towards unkind employer leading to sabotage?

- **Krueger-Mas (JPE, 2004).**
- Setting:
  - Unionized Bridgestone-Firestone plant
  - Workers went on strike in July 1994
  - Replaced by replacement workers
  - Union workers gradually reintegrated in the plant in May 1995 after the union, running out of funds, accepted the demands of the company
  - Agreement not reached until December 1996

Sabotage?

- Do workers sabotage production at firm?
  - Examine claims per million tires produced in plants affected
  - Compare to plant not affected by strike (Joliette & Wilson)

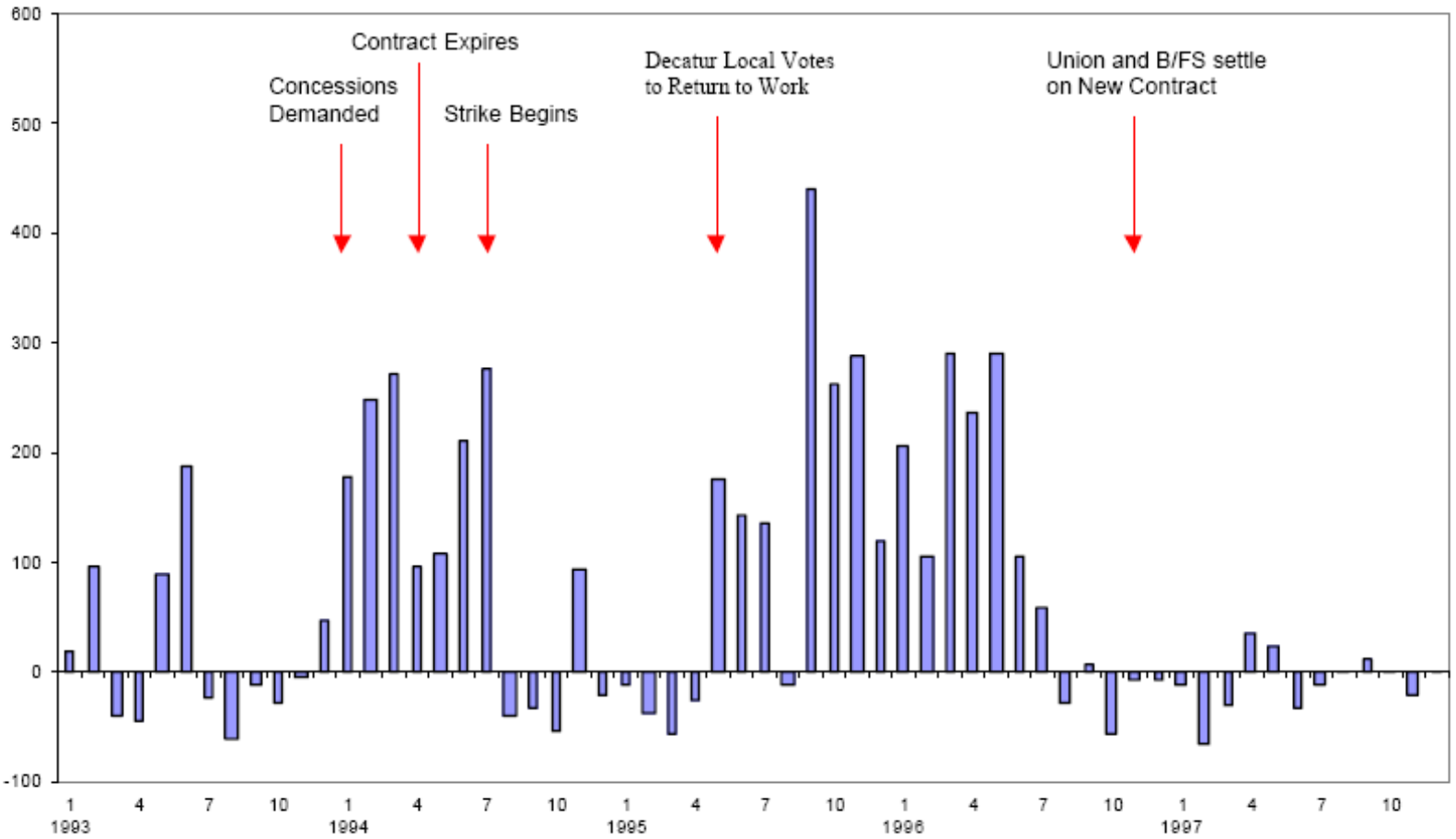


Sabotage?

- Ten-fold increase in number of claims
- Similar pattern for accidents with fatalities
- Possible explanations:
  - Lower quality of replacement workers
  - Boycotting / negative reciprocity by unionized workers
- Examine the timing of the claims

Claims Timing

Figure 8: Difference in the Number of Complaints per million Tires Produced by Month: Decatur Plant minus Joliette and Wilson Plants.



Source: Authors' calculations based on NHTSA complaints data. Records with missing data are excluded.

Claims Timing

- Two time periods with peak of claims:
  - Beginning of Negotiation Period
  - Overlap between Replacement and Union Workers
- Quality not lower during period with replacement workers
- Quality crisis due to Boycotts by union workers
- Claims back to normal after new contract settled

- Suggestive of extreme importance of good employer-worker relations

Section 2

Charitable Giving: Gift Exchange

Fund-raising

- **Falk (EMA, 2008)** — field experiment in fund-raising
  - 9,846 solicitation letters in Zurich (Switzerland) for Christmas
  - Target: Schools for street children in Dhaka (Bangladesh)
  - 1/3 no gift, 1/3 small gift, 1/3 large gift
  - Gift consists in postcards drawn by kids
  - Do gifts trigger higher generosity?

Example Postcard

Appendix: An example of the included postcards

Short-Run Donation Probability

- Short-Run effect: Donations within 3 months

TABLE 1: DONATION PATTERNS IN ALL TREATMENT CONDITIONS

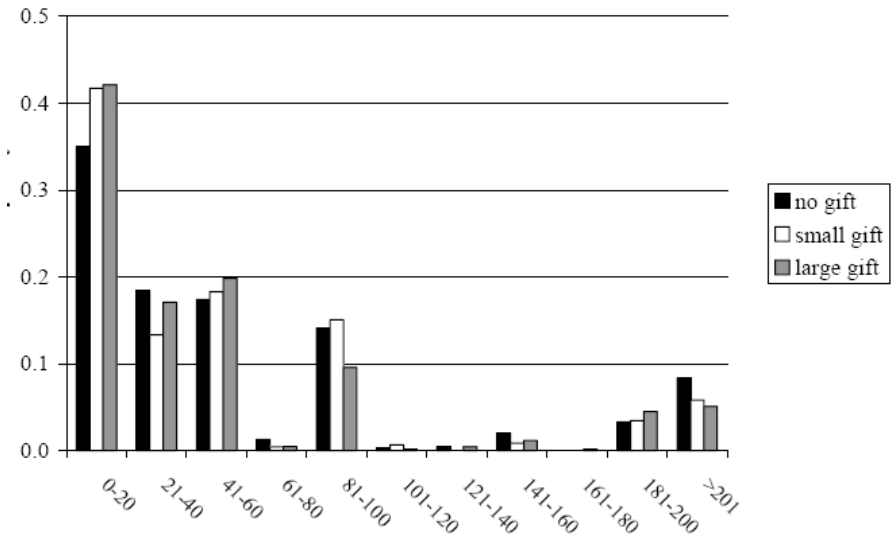
	No gift	Small gift	Large gift
Number of solicitation letters	3,262	3,237	3,347
Number of donations	397	465	691
Relative frequency of donations	0.12	0.14	0.21

- Large gift leads to doubling of donation probability
- Effect does not depend on previous donation pattern (donation in previous mailing)
- Note: High donation levels, not typical for US

Donation Amount

- Small decrease in average donation, conditional on donation (Marginal donors adversely selected, as in 401(k) Active choice paper)

FIGURE 1: HISTOGRAMS OF DONATIONS FOR EACH TREATMENT



- Limited intertemporal substitution. February 2002 mailing with no gift. Percent donation is 9.6 (control), 8.9 (small gift), and 8.6 (large gift) (differences not significant)

Section 3

Social Pref. Wave IV: Social Pressure, Signaling, and Norms

Introduction

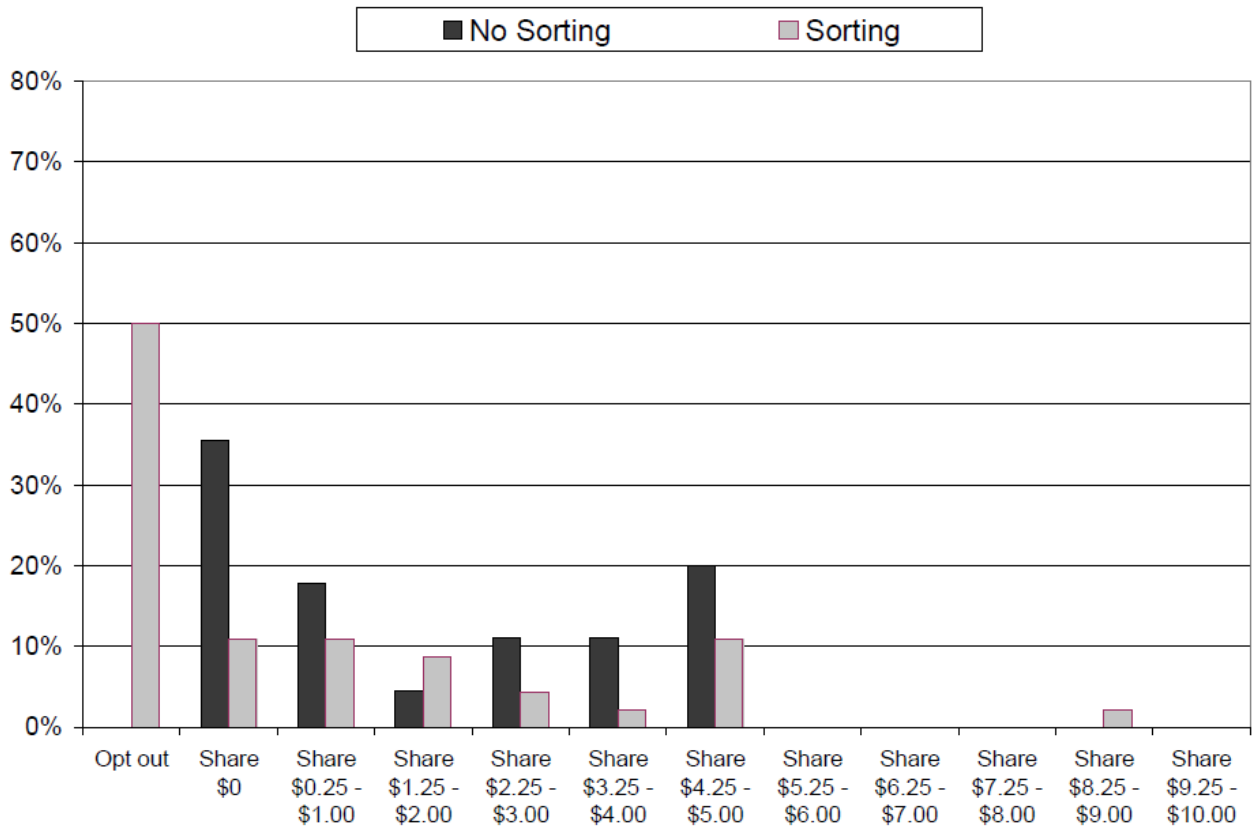
- Last 15 years: Evidence to suggest that altruism/warm glow/inequity aversion/reciprocity only part of story

- Dictator games with sorting (**Dana, Cain, and Dawes, 2007**; **Lazear, Malmendier, and Weber, AEJ Applied 2012**):
  - Subject can play dictator game ($10 to share)
  - OR can sort out and have privately $10
- Predictions of models of altruism/warm glow/inequity aversion/reciprocity:
  - Individuals who offer 0 still would offer 0 or sort out
  - Individuals who give to other would stay in and give

Results?

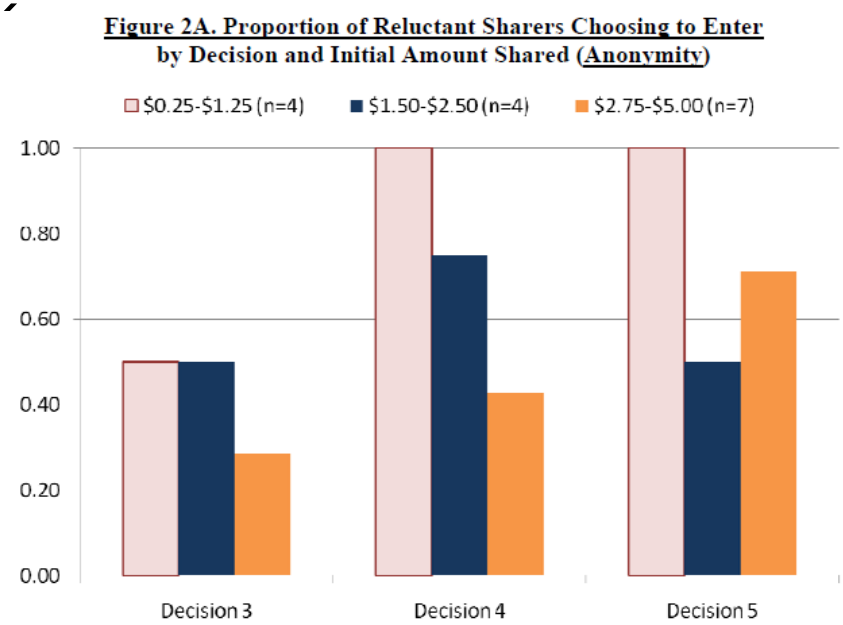
- From Lazear, Malmendier, and Weber (2012)

Figure 1A. Distributions of Amounts Shared
(Experiment 1, Berkeley)



Results?

- More than half of positive givers sort out instead!
- Need to increase dictator game payout to \$12 (Decision 5) to lure givers back



- Further evidence: Dictator games with moral wriggle room (**Dana, Weber, and Kuang, 2007**)
  - Avoid (free) information to justify not sharing

Social Pressure

- **DellaVigna, List, and Malmendier (QJE 2012)**
  - Pay a disutility cost $S > 0$ if do not give when asked
  - No disutility cost if can avoid to meet the solicitor or recipient
  - Give mostly *because asked*
- Can explain:
  - Sort out in dictator game with sorting
  - Wanting to ignore information
  - Give small amount to charities, no crowd out of giving
  - Also: Give more in higher social pressure environments
- Key prediction specific to Social Pressure model:
  - *Altruism/Glow*: Agent seeks giving occasions to get warm glow
  - *Social Pressure*: Agents avoids giving occasions to avoid social pressure
- Drawback of model
  - Social Pressure cost is reduced form

Social Signaling

- **Benabou and Tirole (2003):**

$$U = u(x_s) + \alpha u(x_o) + \lambda_\alpha E(\alpha | x_s)$$

- Individuals have an altruism weight α
  - Individuals 'forget' their altruism α
  - They infer α from their own behavior in a signaling game
  - They care about the inferred α with social signaling weight λ_α
  - Behave generously to convince one self (and others)
- Can explain:
  - People behave generously when observed, less so when no one sees (dictator with exit)
  - Small donations to signal generosity to others
  - Can generate crowd out of generosity with incentives (see below)
- Drawback: Can be hard to solve and estimate

Social Norms

- **Akerlof and Kranton (2003); Krupka and Weber (JEEA, 2013)**
- Utility is

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

  where $\bar{x}$ is a prescribed social norm
- The individual pays a disutility cost from deviating from norm
  - E.g., equal sharing in dictator game (Krupka and Weber, 2013)
  - E.g., a behavior prescribed by one's identity (Akerlof and Kranton, 2003)
- Can explain:
  - People are generous in some settings, not others, if social norms prescribes so
- Drawback:
  - Need to explain where social norm comes from

Section 4

Social Pressure: Various

Introduction: Milgram Experiment

- Early experiments: *Milgram experiment* post-WWII
- Motivation: Do Germans yield to pressure more than others?
  - Subjects: Adult males in US
  - Recruitment: experiment on punishment and memory
  - Teacher asks questions, administers shock for each wrong answer
  - Initial shock: 15V
  - Increase amount up to 450V (not deadly, but very painful)
  - Learner visible through glass (or audible)
  - Learner visibly suffers and complains

Results

1. 62% subjects reach 450V
2. Subjects regret what they did ex post
3. When people asked to predict behavior, almost no one predicts escalation to 450V

- It's not the Germans. *Most* people yield to social pressure
- Furthermore, naivete' — Do not anticipate giving in to social pressure
- Social Pressure likely to be important in organization and public events

Asch (1951)

- Second classical psychology experiment: **Asch (1951)**
  - Subjects are shown two large white cards with lines drawn on them
    - First card has three lines of substantially differing length on them
    - Second card has only one line.
  - Subjects are asked which of the lines in the first card is closest in length to the line in the second card
- Control treatment: subjects perform the task in isolation $\rightarrow$ 98 percent accuracy
- High social-pressure treatment: subjects choose after 4 to 8 subjects (confederates) unanimously choose the wrong answer $\rightarrow$ Over a third of subjects give wrong answer

Interpretations

- Social Pressure Interpretation:
  - Avoid disagreeing with unanimous judgment of the other participants
  - Result disappears if confederates are not unanimous
- Alternative interpretation: Social learning about the rules of the experiment
- Limitation: subjects not paid for accuracy

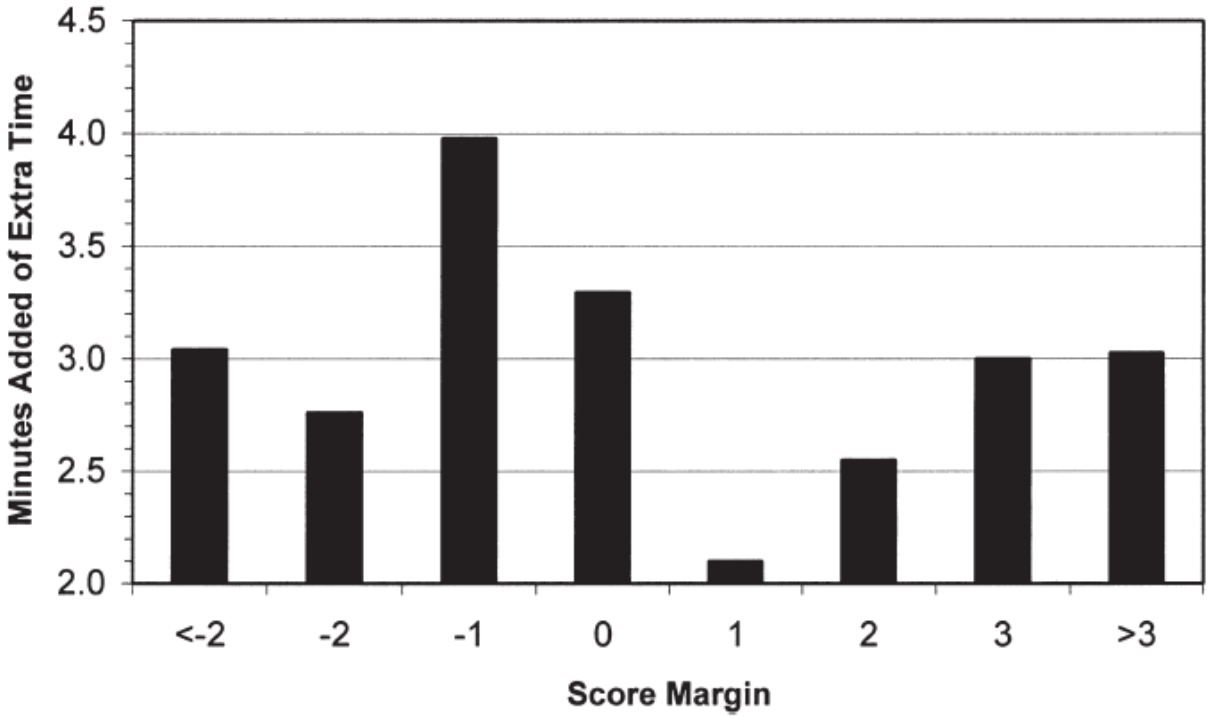
A more recent example

- An example of social pressure in a public event
- **Garicano, Palacios-Huerta, and Prendergast (REStat, 2006)**
  - Soccer games in Spanish league
  - Injury time at end of each game (0 to 5 min.)
  - Make up for interruptions of game
  - Injury time: last chance to change results for teams
- Social Pressure Hypothesis: Do referees provide more injury time when it benefits more the home team?
  - Yielding to social pressure of public
  - No social learning plausible
  - Note: referees professionals, are paid to be independent

Results I

- Figure 1 – Clear pattern, very large effects

FIGURE 1.—INJURY TIME AWARDED BY SCORE MARGIN



Number of minutes awarded by referees as a function of the margin in favor of the home team at the end of the match. Score margin = (goals scored by home team) − (goals scored by visiting team). Note: 3.3% of the matches ended with score differences smaller than −2; 5.2%, with score differences greater than 3.

Results II

- Table 5. Response to incentives → After 1994, 3 points for winning (1 for drawing, 0 for losing).

TABLE 5.—MARGINAL EFFECT OF INCENTIVES ON INJURY TIME

Statistic	[1]	[2]
Constant	3.50**	3.11**
	(0.14)	(0.32)
Score Difference	**−1.53****	**−1.56****
	(0.18)	**(0.18)**
Year Effect	0.81**	0.7**
	(0.18)	(0.21)
Year × Score Difference	**−0.58***	**−0.52***
	(0.23)	**(0.23)**
Yellow Cards		0.07**
		(0.02)

Results III

- Table 6. Response to social pressure: size of audience

TABLE 6.—EFFECT OF THE SIZE AND COMPOSITION OF THE CROWD ON REFEREE BI

Statistic	[1]	[2]
Constant	3.23**	2.94**
	(0.18)	(0.20)
Score Difference	**−0.93****	**−0.96****
	(0.20)	**(0.21)**
Year Effect	0.36**	0.33**
	(0.11)	(0.11)
Attendance	0.00	0.00
	(0.00)	(0.00)
Attendance × Score Difference	**−0.02****	**−0.02****
	(0.00)	**(0.00)**
Yellow Cards		0.07**
		(0.02)
Budget Home		

Social Pressure in the Workplace

- **Mas-Moretti (AER 2009).** Evidence of response to social pressure in the workplace
  - Workplace setting $\rightarrow$ Large retail chain
  - Very accurate measure of productivity, scanning rate at check-out counter
  - Examine what happens to productivity (no. of items scanned per second) in response to entry of faster/slower coworkers
  - Data for 2 years in 6 stores
  - Schedule determined 2 weeks in advance
  - Social Pressure: Are others observing the employer?
- Slides courtesy of Enrico

What is the relationship between individual effort and co-worker permanent productivity?

- First we measure the *permanent* component of productivity of each worker

$$y_{itcs} = \theta_i + \Sigma_{j \neq i} \pi_j W_{jtcs} + \psi X_{itcs} + \gamma_{dhs} + \lambda_{cs} + e_{itcs.}$$

  For each worker *i*, 10 minute period and store, we average the permanent productivity of all the co-workers (excluding *i*) who are active in that period: $\Delta\overline{\theta}_{-ist}$

- Second, we regress ten minutes *changes* in individual productivity on *changes* in average permanent productivity of co-workers

Finding 1: There is a positive association between changes in co-worker permanent productivity and changes in individual effort

	(1)	(2)
Δ Co-worker permanent Productivity	0.176 (0.023)	0.159 (0.023)
Controls	No	Yes

$$\Delta y_{itcs} = \beta \Delta \bar{\theta}_{-ist} + \gamma_{tds} + \psi \Delta X_{tcs} + e_{itcs}$$

i = individual
t = 10 minute time interval
c = calendar date
s = store

Finding 2: The magnitude of the spillover effect varies dramatically depending on the skill level

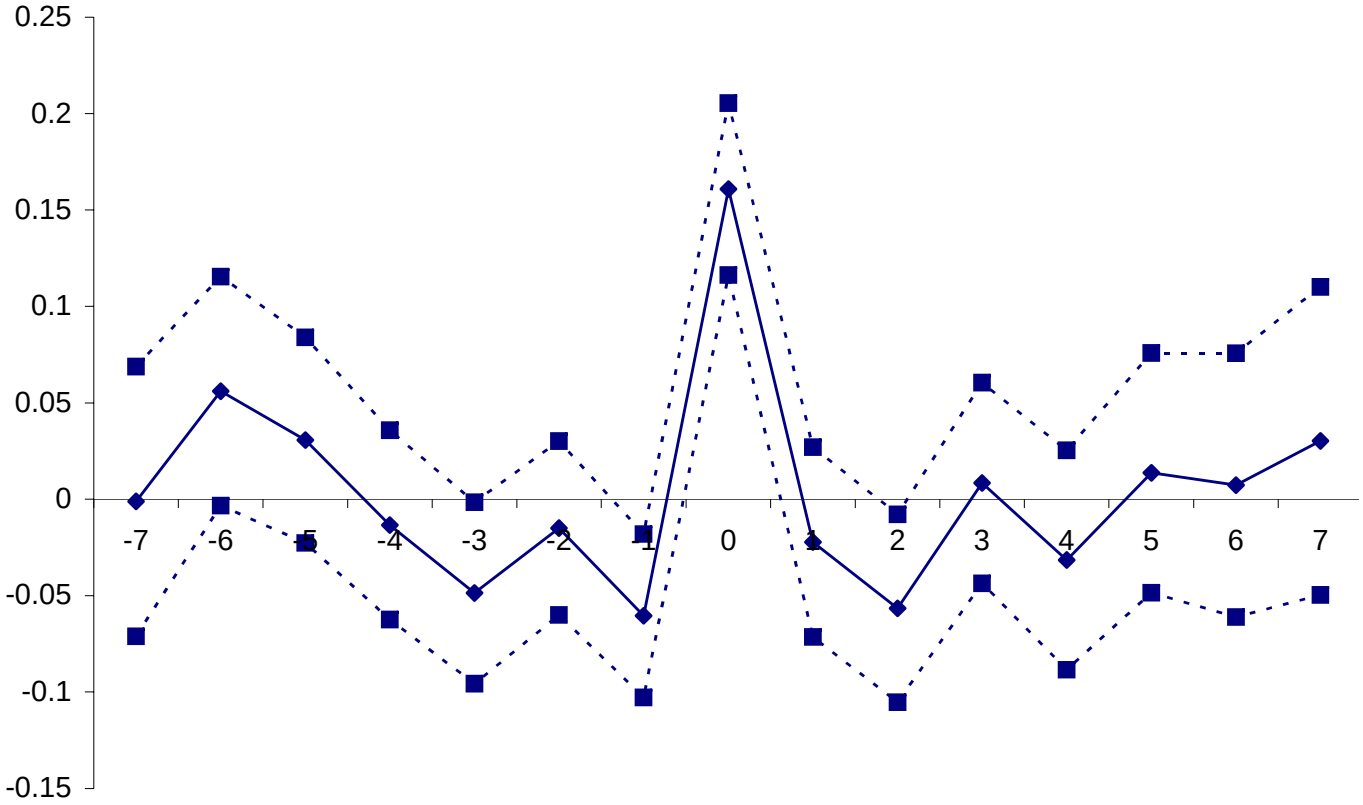
	(2)	(3)
Δ Co-worker permanent productivity	0.159 (0.023)	0.261 (0.033)
Δ Co-worker permanent prod. × Above average worker		-0.214 (0.046)
Observations	1,734,140	1,734,140
Controls	Yes	Yes

$$\Delta y_{itcs} = \beta \Delta \bar{\theta}_{-ist} + \gamma_{tds} + \psi \Delta X_{tcs} + e_{itcs}$$

What Determines Variation in Co-Workers Quality?

- Shifts are pre-determined
- Management has no role in selecting specific workers for shifts
- We measure co-workers productivity using permanent productivity (not current)
- Our models are in first differences: We use variation within a day and within a worker

The lags and leads for the effect of changes of average co-worker productivity on reference worker productivity



$$\Delta y_{itcs} = \beta_{-7}\Delta\bar{\theta}_{-i(t-7)cs} + \beta_{-6}\Delta\bar{\theta}_{-i(t-6)cs} + \beta_{-5}\Delta\bar{\theta}_{-i(t-5)cs} + \beta_{-4}\Delta\bar{\theta}_{-i(t-4)cs} + \beta_{-3}\Delta\bar{\theta}_{-i(t-3)cs} + \beta_{-2}\Delta\bar{\theta}_{-i(t-2)cs}$$
$$+ \beta_{-1}\Delta\bar{\theta}_{-i(t-1)cs} + \beta_{0}\Delta\bar{\theta}_{-i(t)cs} + \beta_{1}\Delta\bar{\theta}_{-i(t+1)cs} + \beta_{2}\Delta\bar{\theta}_{-i(t+2)cs} + \beta_{3}\Delta\bar{\theta}_{-i(t+3)cs} + \beta_{4}\Delta\bar{\theta}_{-i(t+4)cs} + \beta_{5}\Delta\bar{\theta}_{-i(t+5)cs}$$
$$+ \beta_{6}\Delta\bar{\theta}_{-i(t+6)cs} + \beta_{7}\Delta\bar{\theta}_{-i(t+7)cs} + \zeta\mathbf{M} + e_{itcs},$$

What explains spillovers?

- There are at least two possible explanations (Kendal and Lazear, 1992)
  - Guilt / Contagious enthusiasm
  - Social pressure ("I care what my co-workers think about me")
- We use the spatial distribution of register to help distinguish between mechanisms

- Guilt / Contagious enthusiasm implies that the spillover generate by the entry of a new worker should be larger for those workers who can observe the entering worker

- Social pressure implies that the spillover generate by the entry of a new worker should be larger for those workers who who are observed by the new worker

Table 5: Models by spatial orientation and proximity

	(1)	(3)
Δ Co-worker permanent productivity behind	0.233	
	(0.019)	
Δ Co-worker permanent productivity in front	0.007	
	(0.018)	
Δ Co-worker permanent productivity behind & closer		0.162
		(0.016)
Δ Co-worker permanent productivity in front & closer		0.016
		(0.015)
Δ Co-worker permanent productivity behind & farther		0.100
		(0.018)
Δ Co-worker permanent productivity in front & farther		0.003
		(0.018)

Voter Turnout

- Final Example: Effect of Social Pressure on Voting
  - Large literature of field experiments to impact voter turnout
  - Typical design: Day before (local) election reach treatment household and encourage them to vote
  - Some classical examples

Paper	Treatment (1)	Election type or question (2)	Variable t (3)	Year (4)	Place (5)	Sample size (6)	Control group t_T (7)	Treatment group t_C (8)	Exposure rate $e_T - e_C$ (9)	Persuasion rate (10)
Field Experiments										
Gerber and Green [2000]	Door-to-door canvassing	Federal elect.	Turnout	1998	New Haven	$N = 14{,}473$	0.422	0.463	0.270	0.263
	Canvassing + mail + calls	Federal elect.	Turnout	1998	New Haven	$N = 14{,}850$	0.422	0.448	0.270	0.167
Green, Gerber, and Nickerson [2003]	Door-to-door canvassing	Local elect.	Turnout	2001	6 cities	$N = 18{,}933$	0.286	0.310	0.293	0.118
Green and Gerber [2001]	Phone calls by youth vote	General elect.	Turnout	2000	4 cities	$N = 4{,}377$	0.660	0.711	0.737	0.205
	Phone calls 18–30-year-olds	General elect.	Turnout	2000	2 cities	$N = 4{,}377$	0.405	0.416	0.414	0.045

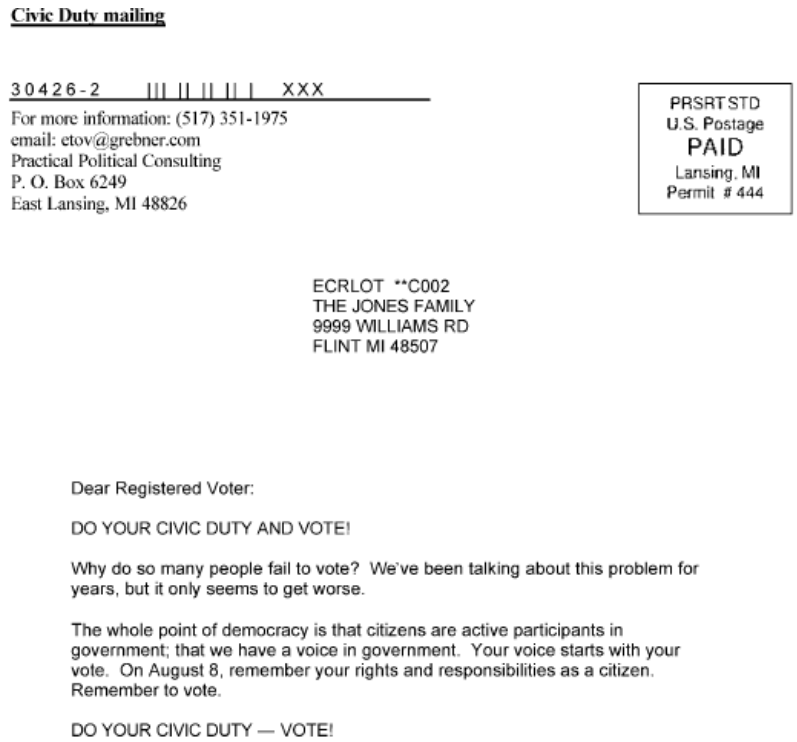
Example

- In these experiments, typically mailings are the cheapest, but also the least effective get-out-the-vote treatment

- **Gerber, Green, and Larimer (APSR, 2008):** Add social pressure to these treatments
- Setting:
  - August 2006, Michigan
  - Primary election for statewide offices
  - Voter turnout 17.7% registered voters
- Experimental sample: 180,000 households on Voter File
- Mailing sent 11 days prior to election

Experimental Design

- Control households get no mail (N=100,000)
- *Civic Duty Treatment.* 'DO YOUR CIVIC DUTY—VOTE!"'



Civic Duty mailing

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Dear Registered Voter:

DO YOUR CIVIC DUTY AND VOTE!

Why do so many people fail to vote? We've been talking about this problem for years, but it only seems to get worse.

The whole point of democracy is that citizens are active participants in government; that we have a voice in government. Your voice starts with your vote. On August 8, remember your rights and responsibilities as a citizen. Remember to vote.

DO YOUR CIVIC DUTY — VOTE!

Experimental Design

- *Hawthorne Treatment.* Information that voters' turnout records are being studied

Dear Registered Voter:

YOU ARE BEING STUDIED!

Why do so many people fail to vote? We've been talking about this problem for years, but it only seems to get worse.

This year, we're trying to figure out why people do or do not vote. We'll be studying voter turnout in the August 8 primary election.

Our analysis will be based on public records, so you will not be contacted again or disturbed in any way. Anything we learn about your voting or not voting will remain confidential and will not be disclosed to anyone else.

DO YOUR CIVIC DUTY — VOTE!

Experimental Design

- *Self-Information Treatment.* Give information on own voting record

Dear Registered Voter:

WHO VOTES IS PUBLIC INFORMATION!

Why do so many people fail to vote? We've been talking about the problem for years, but it only seems to get worse.

This year, we're taking a different approach. We are reminding people that who votes is a matter of public record.

The chart shows your name from the list of registered voters, showing past votes, as well as an empty box which we will fill in to show whether you vote in the August 8 primary election. We intend to mail you an updated chart when we have that information.

We will leave the box blank if you do not vote.

DO YOUR CIVIC DUTY—VOTE!

OAK ST	Aug 04	Nov 04	Aug 06
9999 ROBERT WAYNE		Voted	_____
9999 LAURA WAYNE	Voted	Voted	_____

Experimental Design

- *Other-Information Treatment.* Know if neighbors voted!

Dear Registered Voter:

WHAT IF YOUR NEIGHBORS KNEW WHETHER YOU VOTED?

Why do so many people fail to vote? We've been talking about the problem for years, but it only seems to get worse. This year, we're taking a new approach. We're sending this mailing to you and your neighbors to publicize who does and does not vote.

The chart shows the names of some of your neighbors, showing which have voted in the past. After the August 8 election, we intend to mail an updated chart. You and your neighbors will all know who voted and who did not.

DO YOUR CIVIC DUTY — VOTE!

MAPLE DR	Aug 04	Nov 04	Aug 06
9995 JOSEPH JAMES SMITH	Voted	Voted	_____
9995 JENNIFER KAY SMITH		Voted	_____
9997 RICHARD B JACKSON		Voted	_____

Results

- Substantial impacts especially when neighbors get to see
- All the results are highly statistically significant
- Results huge given that 1/3 of recipients probably never opened the mailer

TABLE 2. Effects of Four Mail Treatments on Voter Turnout in the August 2006 Primary Election

	Experimental Group				
	Control	Civic Duty	Hawthorne	Self	Neighbors
Percentage Voting	29.7%	31.5%	32.2%	34.5%	37.8%
N of Individuals	191,243	38,218	38,204	38,218	38,201

- Replication in competitive elections: Smaller impact, but replicates

Section 5

Social Pressure: Charitable Giving

DellaVigna, List, and Malmendier (2012)

- Test of prediction of social pressure model: Avoidance of fund-raiser
  - Consumer may receive advance notice of fundraiser
  - Consumer can avoid (or seek) fundraiser at a cost
  - Consumer decides whether to give (if at home)
- Field experiment: door-to-door fundraiser
  - Control group: standard fundraiser
  - Flyer Treatment: flyer on doorknob on day before provides advance notice about hour of visit
  - Opt-Out Flyer Treatment: flyer with box "do not disturb"

Flyer Layout with and without Opt-Out

- **Model**

- Giving game with giver and fund-raiser. Timing:
  - *Stage 1*:
    - No Flyer: Giver at home with probability $h = h_0$
    - Flyer:
      - Giver sees flyer with probability r
      - Can alter probability of being at home h from baseline h_0 at cost $c(h)$, with $c(h_0) = 0$, $c'(h_0) = 0$, and $c''(\cdot) > 0$
  - *Stage 2*:
    - Fund-raiser visits home of giver:
      - If giver at home (w/ prob. h), in-person donation $g^* \geq 0$

- Utility function of giver:

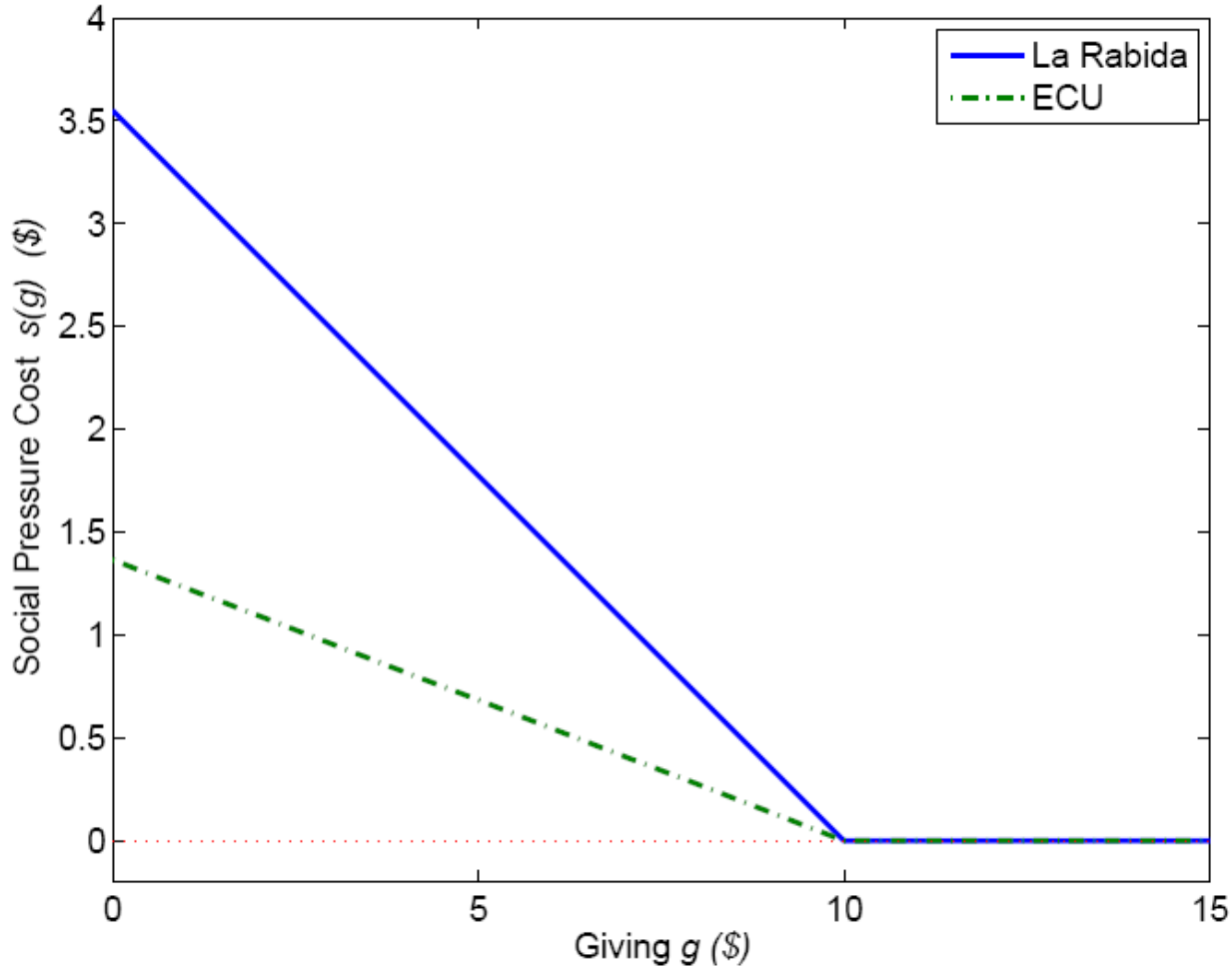
$$U(g) = u(W - g) + av(g, G_{-i}) - s(g)$$

- Agent cares about:
  - Private consumption $u(W - g)$, with $u'(\cdot) > 0$ and $u''(\cdot) \leq 0$
  - Giving to charity $av(\cdot, G_{-i})$, with $v'_g(\cdot, \cdot) > 0$, $v''_{g,g}(\cdot, \cdot) < 0$, $\lim_{g \to \infty} v'_g(g, \cdot) = 0$, and $v(0, G_{-i}) = 0$.

- Social Pressure $s(g) = S(g^s - g) \cdot \mathbf{1}_{g < g^s} \geq 0$
  - Social pressure $s = 0$ if not at home or if giving $g \geq g^s$ (socially acceptable amount)
  - Social pressure $s > 0$ for giving $g < g^s$, decreasing in g

- Captures identity (Akerlof and Kranton, 2000), social norms, or self-signalling (Bodner and Prelec, 2002; Grossman, 2007)

Figure. Social Pressure Cost At Estimated Parameters

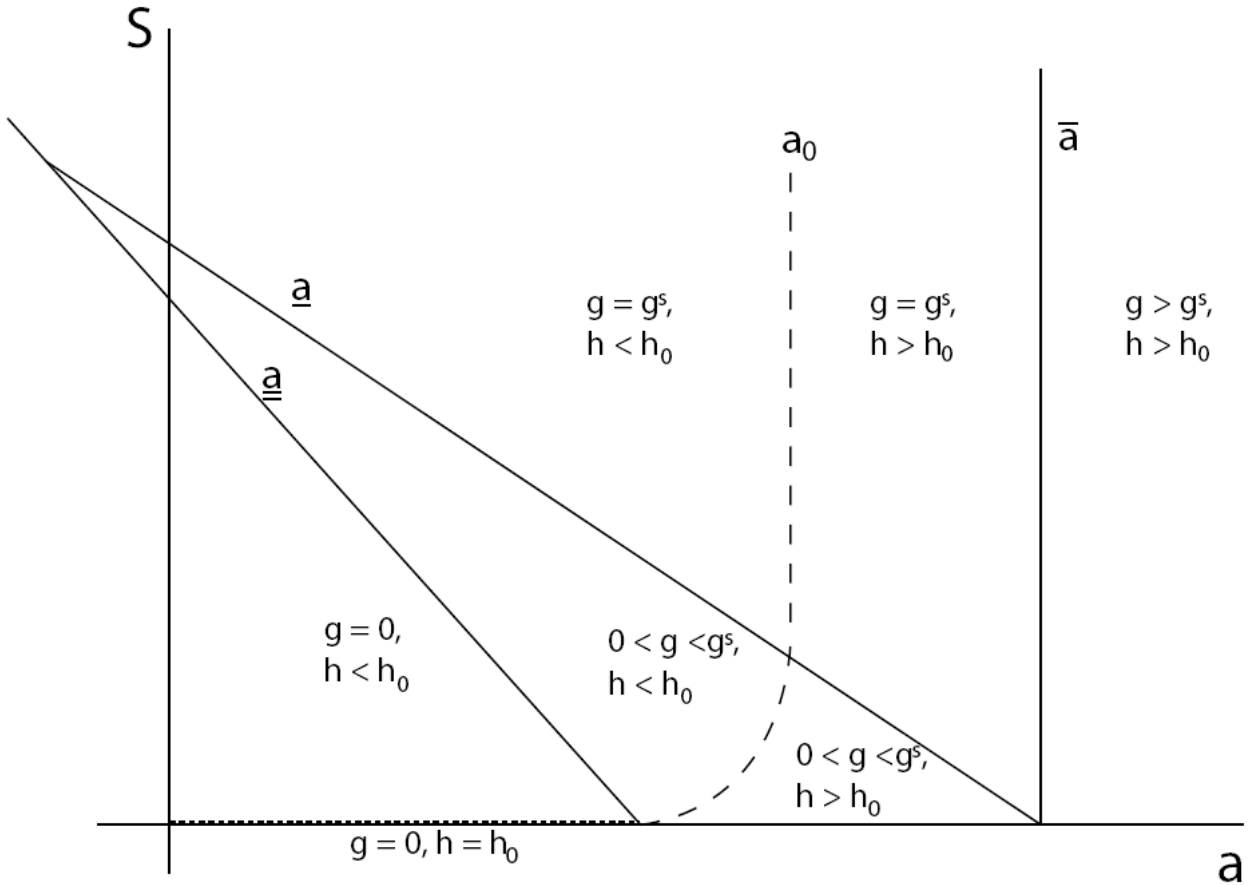


- **Lemma 1a. (Conditional Giving In Person).** *There is a unique optimal donation $g^*(a, S)$ (conditional on being at home), which is weakly increasing in a and takes the form: (i) $g^*(a, S) = 0$ for $a \leq \underline{\underline{a}}$; (ii) $0 < g^*(a, S) < g^s$ for $\underline{\underline{a}} < a < \underline{a}$; (iii) $g^*(a, S) = g^s$ for $\underline{a} \leq a \leq \bar{a}$; (iv) $g^*(a, S) > g^s$ for $a > \bar{a}$.*

- **Lemma 2 (Presence at Home).** *There is a unique optimal probability of being at home $h^*(a, S)$;* (i) *For $S = 0$ (no social pressure), $h^*(a, 0) = h_0$ for $a \leq \underline{\underline{a}}$ and $h^*(a, 0) > h_0$. (ii) For $S > 0$ (social pressure), $h^*(a, S) < h_0$ for $a \leq \underline{\underline{a}}$; there is unique $a_0(S) \in (\underline{\underline{a}}, \bar{a})$ such that $h^*(a_0(S)) = h_0$.*

- **Lemma 3 (Opt-Out Decision).** *For $S = 0$ (no social pressure), the agent never opts out for any a. For $S > 0$ (social pressure), the agent opts out for sufficiently low altruism, $a < a_0(S)$.*

Figure 1. Giving g and Probability of Home Presence h as Function of Parameters



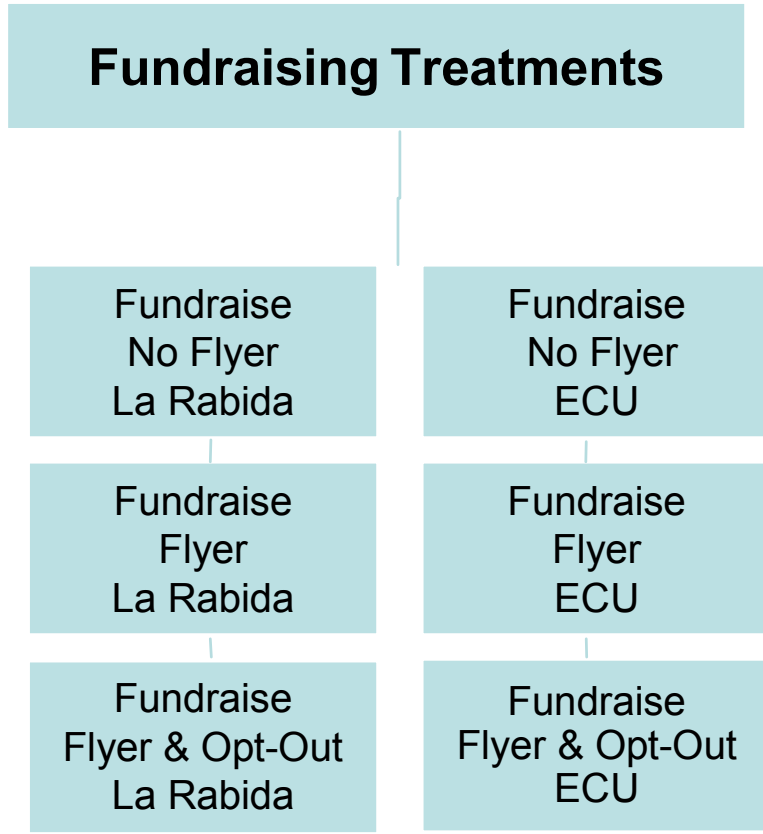
Notes: The Figure indicates the different regions for giving (no giving–g=0, small giving–$0<g<g^s$, giving equal to g^s, and large giving–$g> g^s$) and for probability of being at home (avoidance of solicitor--$h<h_0$, seeking solicitor–$h> h_0$). The regions are a function of the altruism parameter *a* and of the social pressure parameter *S*.

- Allow for heterogeneity in altruism a, with $a \sim F$

- Two special cases:
  - *Altruism and No Social Pressure* (*A-NoS*, $S = 0$ and $F\left(\underline{\underline{a}}\right) < 1$)
  - *Social Pressure and Limited Altruism* (*S-NoA*, $S > 0$ and $F\left(\underline{\underline{a}}\right) = 1$)

- **Proposition 1.** *The probability* $P(H)$ *of home presence is*
  - *A-NoS:* $P(H)_F = P(H)_{OO} > P(H)_{NF}$
  - *S-NoA:* $P(H)_{NF} > P(H)_F > P(H)_{OO}$

- **Proposition 2.** *The unconditional probability* $P(G)$ *of giving is*
  - *A-NoS:* $P(G)_F = P(G)_{OO} > P(G)_{NF}$
  - *S-NoA:* $P(G)_{NF} > P(G)_F > P(G)_{OO}$


Fundraising Treatments
Fundraise
No Flyer
La Rabida
Fundraise
No Flyer
ECU
Fundraise
Flyer
La Rabida
Fundraise
Flyer
ECU
Fundraise
Flyer & Opt-Out
La Rabida
Fundraise
Flyer & Opt-Out
ECU

Experimental Design

- Recruitment and Training: 48 solicitors and surveyors
  - undergraduate students at the University of Chicago, UIC, and Chicago State University
  - Interviewed, trained at UoC
  - aware of different charities but not of treatment
- Time and Place:
  - Saturdays and Sundays between April, 2008 and October, 2008
  - Hours between 10am and 5pm
  - Towns around Chicago: Burr Ridge, Flossmoor, Kenilworth, Lemont, Libertyville, Oak Brook, Orland Park, Rolling Meadows, and Roselle
- Randomization
  - within a solicitor-day observations (4h/6h shifts per day) and
  - at the street level within a town
- Different treatments in different periods ➔ randomization is conditional on solicitor and day fixed effects

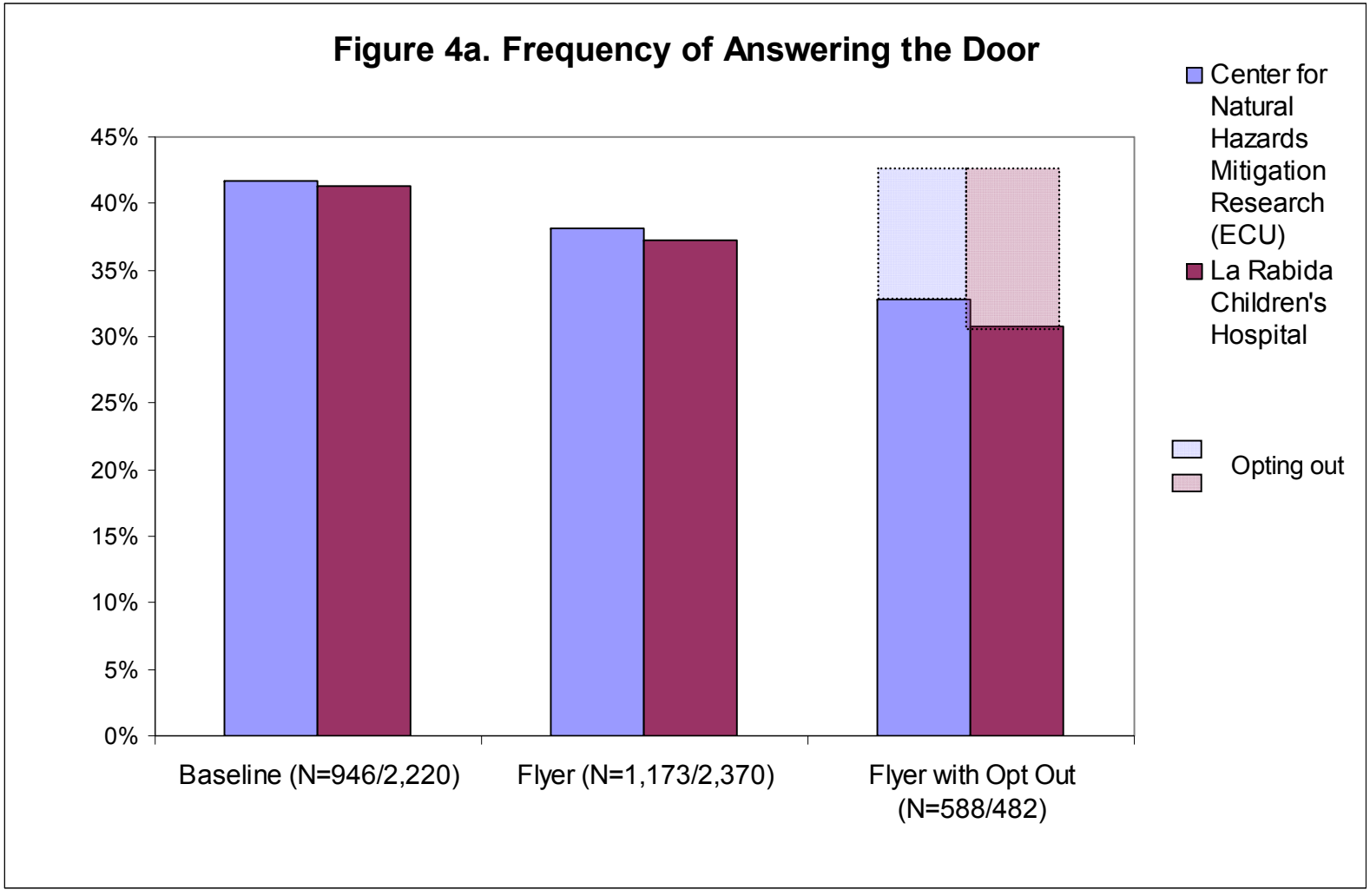


Figure 4a. Frequency of Answering the Door
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Baseline (N=946/2,220)
Flyer (N=1,173/2,370)
Flyer with Opt Out (N=588/482)
Center for Natural Hazards Mitigation Research (ECU)
La Rabida Children's Hospital
Opting out

Figure 4b. Frequency of (Unconditional) Giving

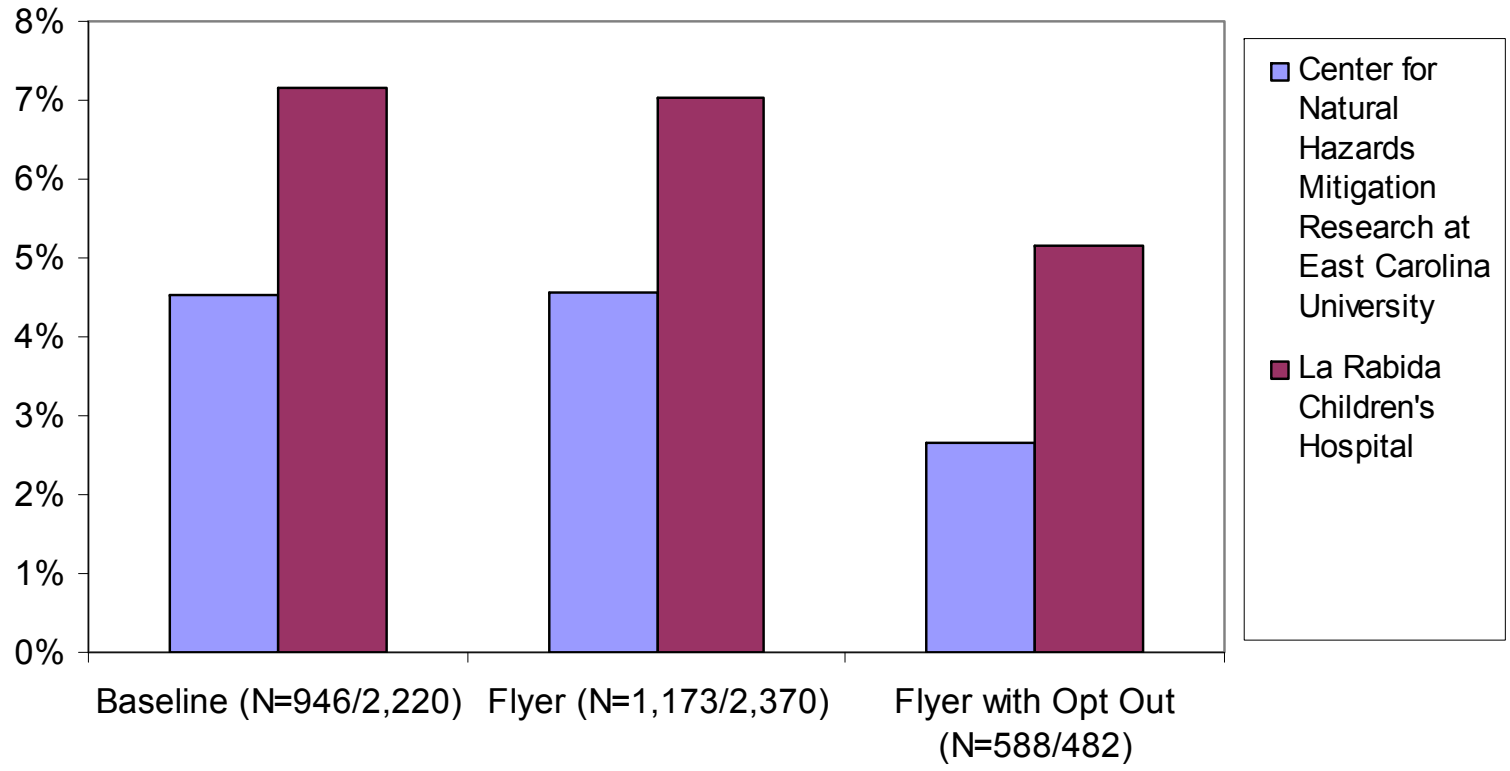


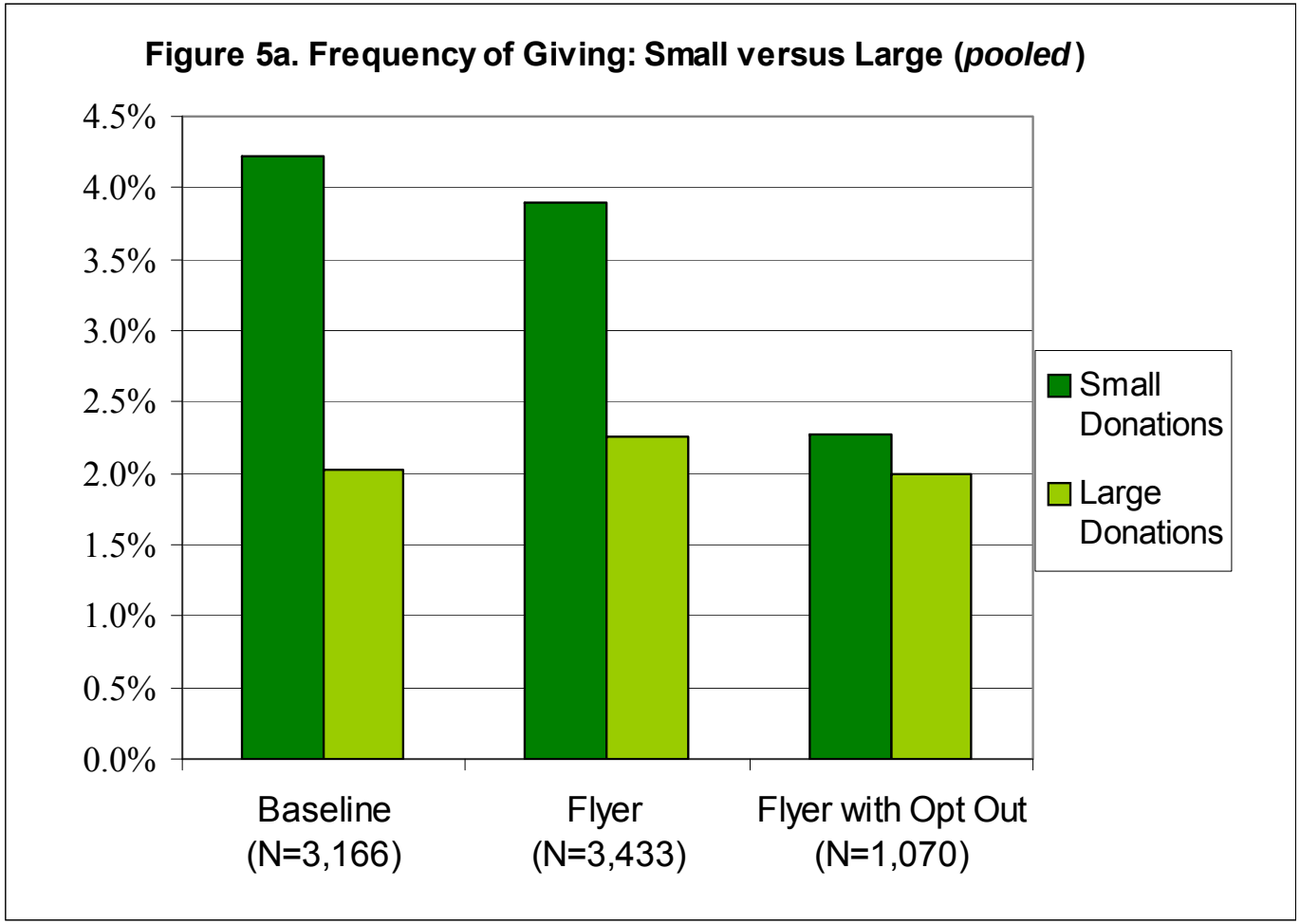
Table 2. Results for Fund-Raising Treatments

Specification:	OLS Regressions			
Dep. Var.:	Indicator for Answering the Door		Indicator for Giving	
	(1)	(2)	(3)	(4)
Flyer Treatment	-0.0388 (0.0137)***		-0.0009 (0.0062)	
Flyer with opt out Treatment	-0.0966 (0.0193)***		-0.0197 (0.0083)**	
Flyer Treatment * ECU Charity		-0.0365 (0.0313)		0.0006 (0.0094)
Flyer with opt out * ECU Charity		-0.089 (0.0271)***		-0.0183 (0.0100)*
Flyer Treatment * La Rabida Charity		-0.0396 (0.0144)***		-0.0019 (0.0078)
Flyer with opt out * La Rabida Charity		-0.106 (0.0319)***		-0.0202 (0.0132)
Indicator ECU Charity		0.0041 (0.0234)		-0.0263 (0.0085)***
Omitted Treatment	No-Flyer	No-Flyer, La Rabida	No-Flyer	No-Flyer, La Rabida
Mean of Dep. Var. for Omitted Treatment	0.4151	0.413	0.0629	0.0717
Fixed Effects for Solicitor, Date-Location, Hour, and Area Rating	X	X	X	X
N	N = 7668	N = 7668	N = 7668	N = 7668

- **Evidence by Donation Size:**

Social pressure more likely to yield small donations

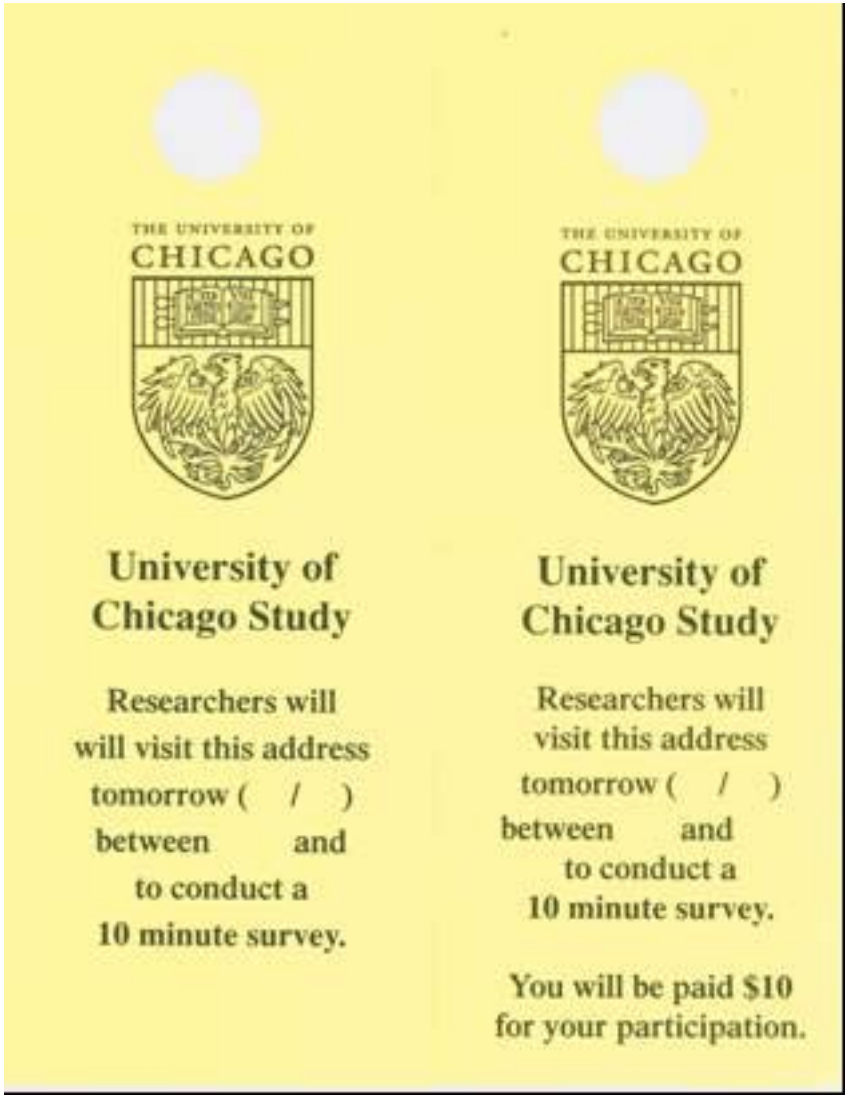
Use median donation size ($10) as cut-off point



Survey Treatments

- Results of fundraiser do not easily allow the estimation of altruism and social pressure parameters
  - Unobserved cost of adjustment *c(h)*
- Solution: estimate elasticity with respect to monetary incentives
- Survey treatments with varying compensation and duration
- Treatments run in 2008 and 2009

Survey Flyers



THE UNIVERSITY OF
CHICAGO

University of Chicago Study

Researchers will will visit this address tomorrow (/) between and to conduct a 10 minute survey.

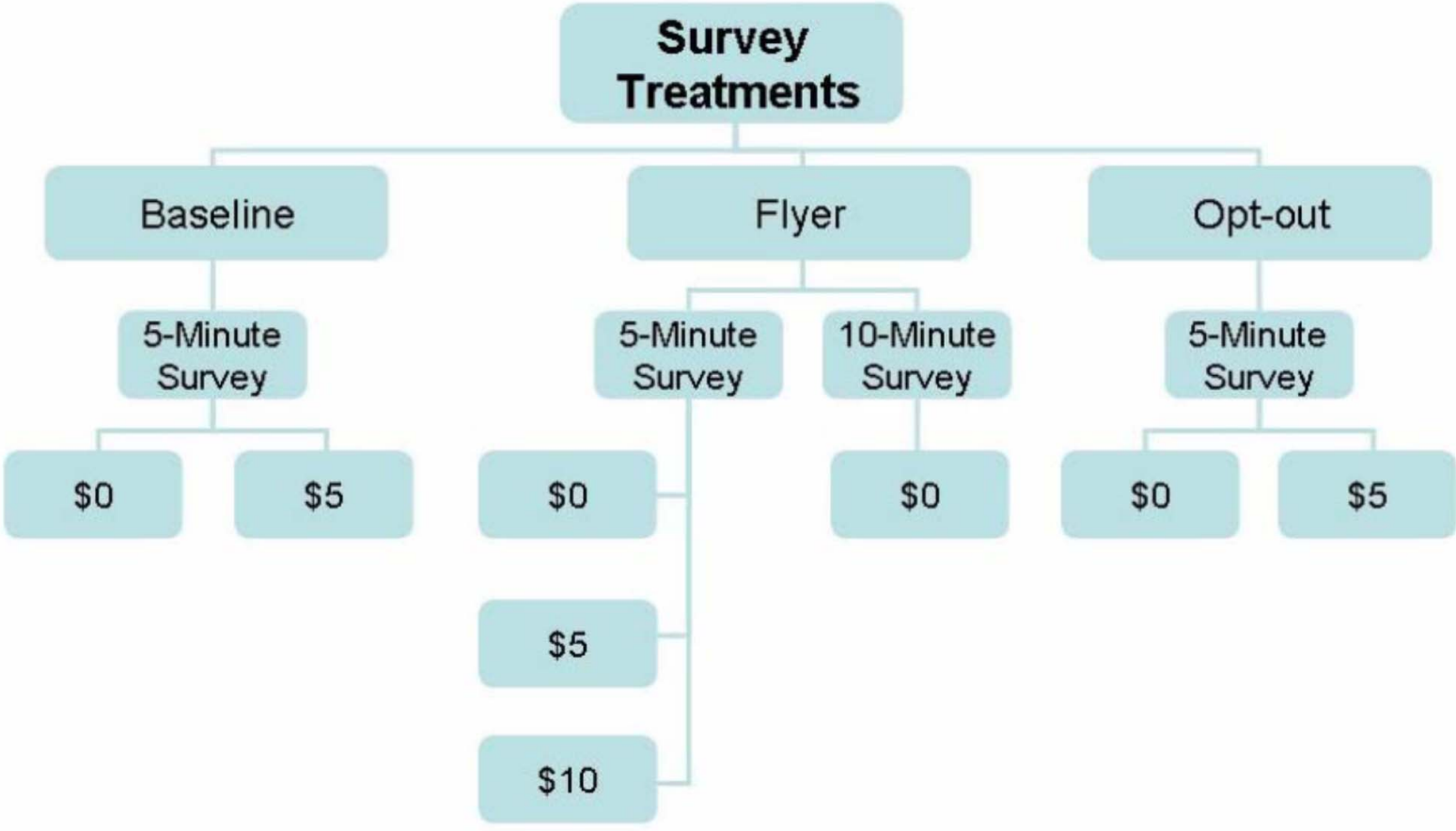
THE UNIVERSITY OF
CHICAGO

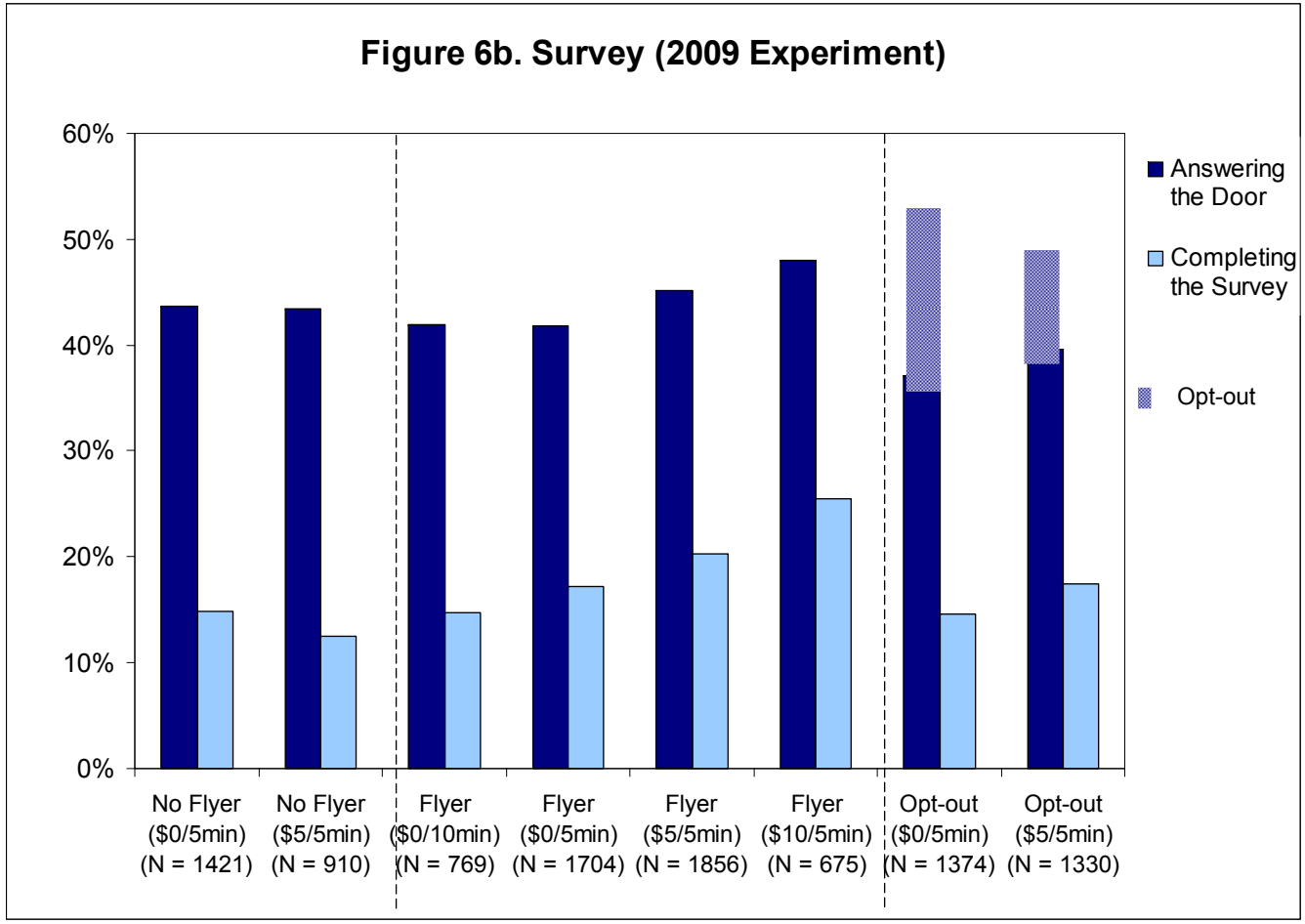
University of Chicago Study

Researchers will visit this address tomorrow (/) between and to conduct a 10 minute survey.

You will be paid $10 for your participation.

Figure 2b. Summary of Door-to-Door Experimental Treatments Run in 2009





- **Survey Results (2009, N = 10,032)**

Higher payment (lower duration)
 increases proportion at home monotonically
 increases survey completion monotonically (except in NF)

- **Structural estimates (Minimum-distance estimator)**

- Minimize distance between predicted moments $m(\vartheta)$ and observed ones $\hat{m}$:

$$\min_{\vartheta} (m(\vartheta) - \hat{m})' W (m(\vartheta) - \hat{m})$$

- Moments $m(\vartheta)$:
  1. Probability of opening the door $(P(H)_j^c,\ j = F, NF, OO,\ c = LaR, Ecu)$
  2. Probability of checking opt-out box $(P(OO)_{OO}^c,\ c = LaR, Ecu)$
  3. Probability of giving at all, and giving an amount range $(P(G)_j^c,\ j = F, NF, OO,\ c = LaR, Ecu)$
  4. Probability of opening door in survey $(P(H)_j^S)$
  5. Probability of filling survey $(P(S)_j^S)$

- Straightforward logic: All you are trying to do is to get model parameters ϑ to reproduce the graphical findings, with quadratic loss function

- Consider simplified case: $W = I$, minimization reduces to

$$\min_{\vartheta} \left[P(H)_{NF}((\vartheta)) - \widehat{P(H)}_{NF}\right]^2 + \left[P(H)_{F}((\vartheta)) - \widehat{P(H)}_{F}\right]^2 + \left[P(H)_{OO}((\vartheta)) - \widehat{P(H)}_{OO}\right]^2 + \left[P(G)_{NF}((\vartheta)) - \widehat{P(G)}_{NF}\right]^2 + \left[P(G)_{F}((\vartheta)) - \widehat{P(G)}_{F}\right]^2 + ...$$

- All moments $\hat{P}$ are probabilities, straight from Figures

- What is ϑ? Social pressure cost S, mean altruism μ, cost of sorting parameter, etc.

- Complication 1 *(Assumptions)*. Extra assumptions relative to model
  - On heterogeneity of altruism a we assume normality
  - Conduct as much robustness as possible

- Complication 2 *(Computations)*. Model may be hard to solve for given ϑ
  - Simplify whenever possible, i.e., no heterogeneity for social pressure
  - Sometimes, need to simulate model if cannot solve analytically

- Complication 3 (*Weighting*). Weight moments W
  - In theory weight, by inverse of variance-covariance matrix
  - In practice, often better to use only diagonal

- Complication 4 (*Optimization*).
  - Unlike in OLS, need to check that optimum is a global minimum
  - Use different starting points
  - Yet sometimes need to restrict parameters to meaningful economic values

- Weighting matrix W diagonal of inverse of variance-covariance matrix

- Parametric assumption to estimate the model:
  1. Consumption utility linear: $u(W-g) = W-g$
  2. Altruism function $av(g, G_{-i}) = a \log(G+g)$
  3. Altruism a is distributed $N(\mu, \sigma)$
  4. Acceptable donation $g^S = \$10$ (median)
  5. Cost function $c(h) = (h-h_0)^2/2\eta$
  6. No mail giving ($\theta = 0$)

- Marginal utility of giving: $a/(G+g) - 1$

- Parameters ϑ:
  1. h_0^{2008} and h_0^{2009}—probability of being at home in no-flyer conditions
  2. r—probability of observing and remembering the flyer
  3. η—responsiveness of the probability of being at home to the utility of being at home
  4. μ_a^c $(c = LaR, Ecu)$—mean of the distribution F of the altruism α
  5. σ_α^c $(c = LaR, Ecu)$—standard deviation of $F(\alpha)$
  6. G—curvature of altruism/warm glow function
  7. S^c $(c = LaR, Ecu)$—social pressure associated with not giving
  8. μ^S—mean of the distribution F^S from which the utility of the survey is drawn
  9. σ^S—standard deviation of F^S
  10. S^S—social pressure associated with saying no
  11. v^S—value of an hour of time completing a survey

- Identification:
  - Prob. being at home h_0 <– Control group
  - Prob. seeing flyer r <– Share opting out
  - Utility of doing survey μ^S and σ^S <– Share completing survey
  - Value of time v^S <– Comparison of effect of \$10 payment and 5 minute duration
  - Elasticity of home presence η <– Share opening door in survey for different payments + Giving in charity
  - Altruism parameters μ^c, σ^c, G <– Given η, share giving different amounts
  - Social pressure parameters S^i and S^S <– Share opening door and giving

Appendix Table 1. Empirical Moments and Estimated Moments

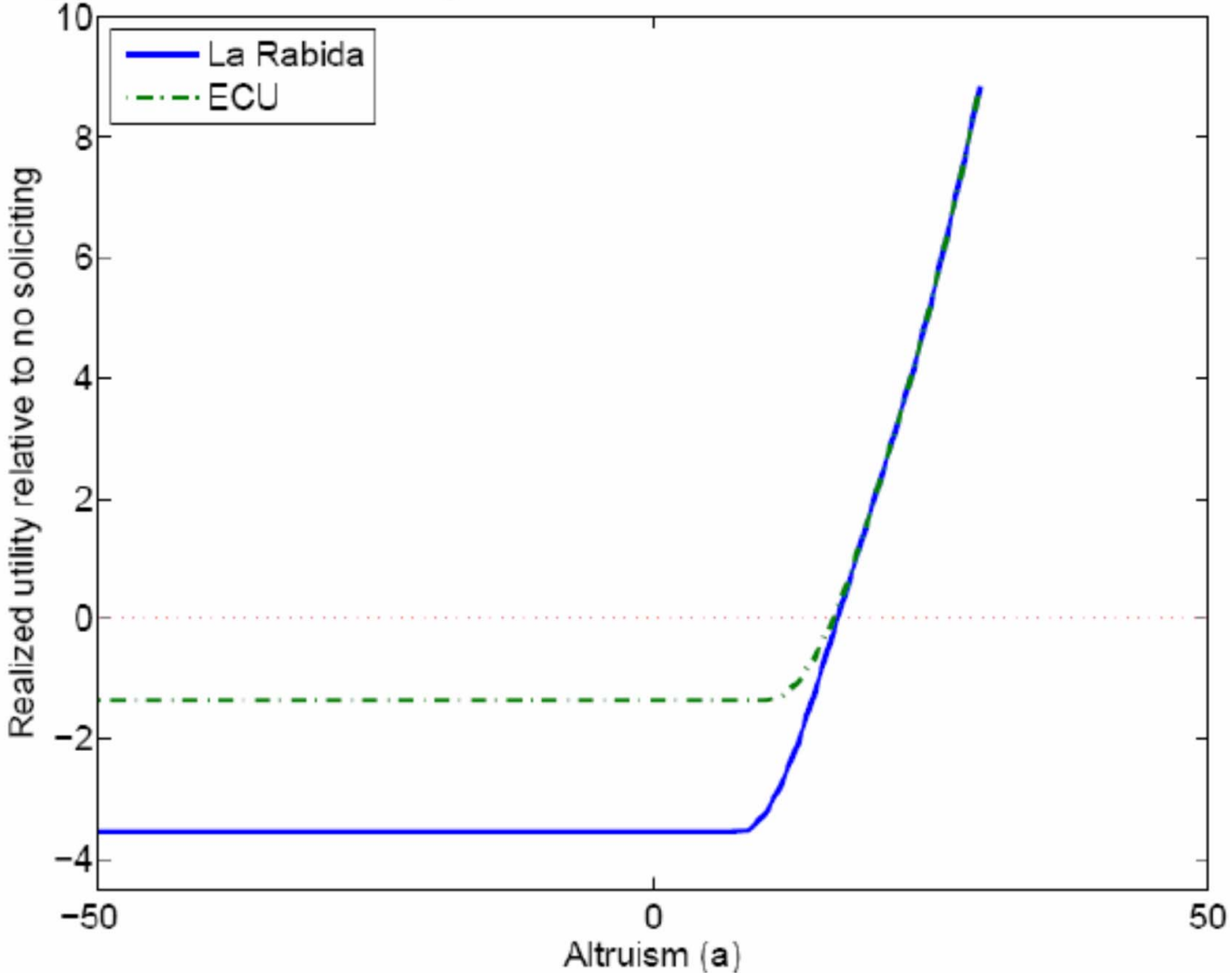
Specification:	Minimum-Distance Estimates			
Charity	La Rabida Charity		ECU Charity	
Moments for Charity	Empirical Moments	Estimated Moments	Empirical Moments	Estimated Moments
Moments	(1)	(2)	(3)	(4)
P(Home) No Flyer	0.4130	0.4142	0.4171	0.4142
P(Home) Flyer	0.3733	0.3735	0.3806	0.3983
P(Home) Opt-Out	0.3070	0.2989	0.3281	0.2911
P(Opt Out) Opt-Out	0.1202	0.1142	0.0988	0.1179
P(Giving) No Flyer	0.0717	0.0666	0.0455	0.0422
P(Giving) Flyer	0.0699	0.0710	0.0461	0.0449
P(Giving) Opt-Out	0.0515	0.0633	0.0272	0.0390
Additional Moments (not shown)				
P(0<Giving<10), P(Giving=10), P(10<Giving<=20), P(20<Giving<=50), P(Giving>50) in Treatments NF, F, OO	X	X	X	X
N	N = 4962	N = 4962	N = 2707	N = 2707

Table 4. Minimum-Distance Estimates: Benchmark Results

	Benchmark Estimates		Estimates with Identity Weighting Matrix	
Common Parameters	(1)		(2)	
Prob. Answering Door (h) - Year 2008	0.414		0.414	
	(0.004)		(0.006)	
Prob. Answering Door (h) - Year 2009	0.449		0.445	
	(0.007)		(0.008)	
Prob. Observing Flyer (r)	0.322		0.302	
	(0.011)		(0.012)	
Elasticity of Home Presence (eta)	0.047		0.060	
	(0.014)		(0.031)	
Implied Cost of Altering Prob. Home by 10 pp.	0.106		0.083	
Survey Parameters				
Mean Utility (in $) of Doing 10-Minute Survey	-26.865		-26.936	
	(4.233)		(5.509)	
Std. Dev. of Utility of Doing Survey	30.285		30.332	
	(5.208)		(6.303)	
Value of Time of One-Hour Survey	74.580		76.761	
	(22.901)		(26.130)	
Social Pressure Cost of Saying No to Survey	4.784		3.869	
	(1.285)		(1.918)	
Charity Parameters	La Rabida	ECU	La Rabida	ECU
Mean Weight on Altruism Function (mu)	-13.910	-10.637	-13.586	-15.109
	(3.250)	(4.273)	(9.481)	(10.919)
Std. Dev. of Weight on Altruism Function	21.935	16.620	19.832	19.832
	(1.335)	(1.832)	(3.885)	(3.998)
Curvature of Altruism Function (G)	12.133		12.224	
	(5.147)		(15.518)	
Social Pressure Cost of Giving 0 in Person	3.550	1.364	3.140	1.906
	(0.615)	(0.744)	(1.674)	(1.475)

Welfare: Does a fund-raiser increase utility for the giver?

Figure 7b. Overall Utility of Fund-Raiser as function of Altruism



Welfare

1. Low-altruism households pay social pressure cost
2. High-altruism households get benefit
3. Since the former dominate, on net negative welfare for solicitee

Panel C. Welfare	**La Rabida Charity**	**ECU Charity**
Welfare in Standard (No-Flyer) Fund-Raiser		
Welfare per Household Contacted (in $)	-1.077 (0.160)	-0.439 (0.286)
Money Raised per Household Contacted	0.722 (0.036)	0.332 (0.046)
Money Raised per Household, Net of Salary	0.247 (0.036)	-0.143 (0.046)

- Societal welfare effect can still be positive if money used very well
  But amount of money raised small (negative for ECU)

Flyer and opt-out treatment increase solicitee welfare

Can also raise charity welfare (i.e., net fund-raising)

Panel C. Welfare	**La Rabida Charity**	**ECU Charity**
Welfare in Standard (No-Flyer) Fund-Raiser		
Welfare per Household Contacted (in $)	-1.077 (0.160)	-0.439 (0.286)
Money Raised per Household Contacted	0.722 (0.036)	0.332 (0.046)
Money Raised per Household, Net of Salary	0.247 (0.036)	-0.143 (0.046)
Welfare in Fund-Raiser with Flier		
Welfare per Household Contacted (in $)	-0.924 (0.145)	-0.404 (0.273)
Money Raised per Household Contacted	0.859 (0.044)	0.333 (0.046)
Money Raised per Household, Net of Salary	0.248 (0.044)	-0.278 (0.046)
Welfare in Fund-Raiser with Opt-out		
Welfare per Household Contacted (in $)	-0.586 (0.085)	-0.248 (0.196)
Money Raised per Household Contacted	0.810 (0.045)	0.369 (0.055)
Money Raised per Household, Net of Salary	0.294 (0.036)	-0.147 (0.046)

Section 6

Social Signaling

Social Signaling

- **Benabou and Tirole (2003):**

$$U = u(x_s) + \alpha u(x_o) + \lambda_\alpha E(\alpha | x_s)$$

- Individuals have an altruism weight α
  - Individuals 'forget' their altruism α
  - They infer α from their own behavior in a signaling game
  - They care about the inferred α with social signaling weight λ_α
  - Behave generously to convince one self (and others)
- Can explain:
  - People behave generously when observed, less so when no one sees (dictator with exit)
  - Small donations to signal generosity to others
  - Can generate crowd out of generosity with incentives

Example

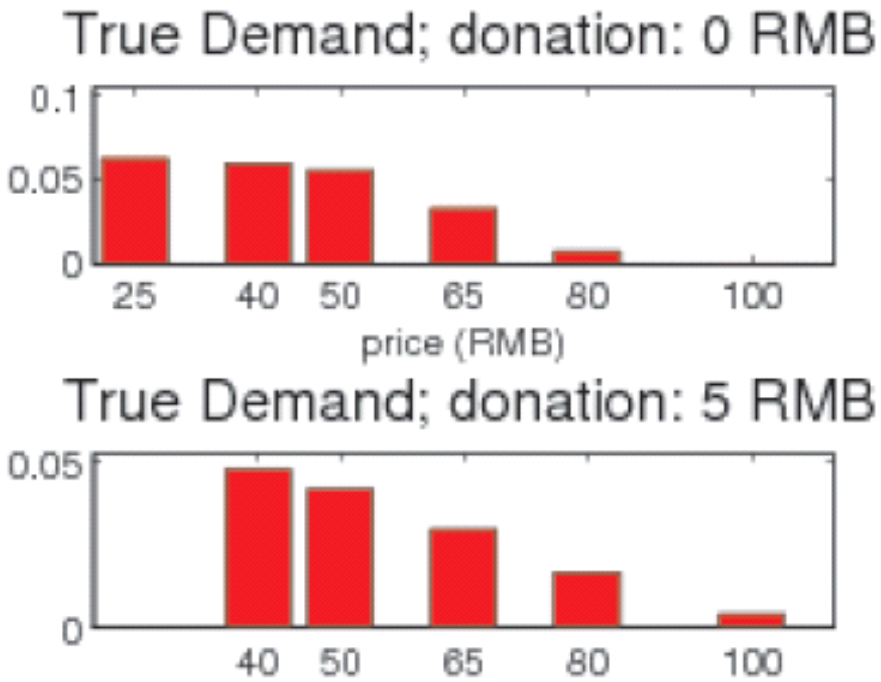
- Consider this in the context of **Dube, Luo, and Fang (Mktg Science, 2017)** paper on case-based marketing
  - Send 30,000 SMS messages in China offering to buy movie ticket for 3-D version of *X-Men: Days of Future Past*
  - Standard price: 100 RMB
  - Randomize price discount: 0, 20, 35, 50, 60, 75 RMB
  - Cross-randomize charitable giving bundled with movie ticker purchase: "If you purchase ticket, X RMB will go to charity': 0, 5, 10, 15 RMB
  - Follow-up survey on motivation

Sample sizes

Variable	Donation (RMB)				
discount (RMB)		0	5	10	15
	0	700	700	700	700
	20	700	1,000	1,000	1,000
	35	700	1,000	3,000	3,000
	50	700	1,000	3,000	3,000
	60	700	1,000	3,000	3,000
	75	700	-	-	-

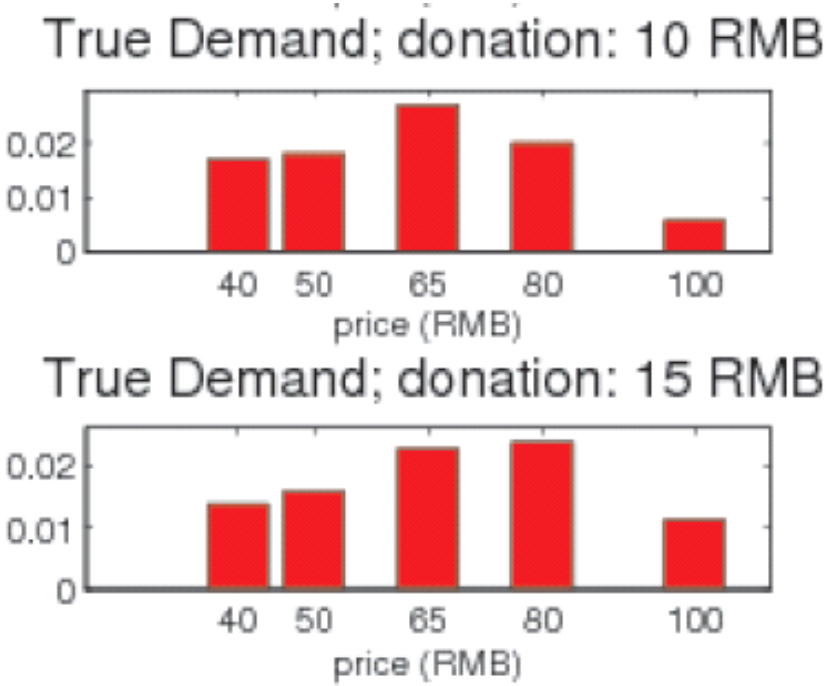
Results: Low Donation

- For low donation, monotonic effect of discount



Results: High Donation

- For high donation, non-monotonic effect of discount $\rightarrow$ Crowd-out of motivation



Striking result: Interpretation?

- Model adapted from Benabou-Tirole
- Part 1: Individual has consumption utility

$$V + \alpha p + \gamma a$$

  - V is utility from movie,
  - p is price of movie, α (<0) is price elasticity
  - a is donation, γ is (reduced-form) altruism
  - So far, standard model with altruism

Striking result: Interpretation?

- Part 2a: Ego utility on altruism:

$$\lambda_\gamma E\left(\gamma | a, p, y\right)$$

  - Individual derives utility from thinking of being altruistic (high a)
  - Weight on ego utility is λ_γ: for $\lambda_\gamma = 0$, back to pure altruism case
  - Individual solves a signaling game to infer γ given price p, discount a, and donation decision $y \in 0, 1$
  - Thus, donation ($y = 1$) has ego utility benefits, raising $E\gamma$

Striking result: Interpretation?

- This is not enough: need Part 2b in Ego utility:

$$\lambda_\alpha E\left(\alpha | a, p, y\right)$$

  - Individual derives utility from thinking of self as stingy – or not
  - Why this term? There needs to be a signal extraction problem: giving can signal high generosity or low price elasticity
  - Unattractive part of Benabou and Tirole model

- Decision: Give $(y = 1)$ if

$$\begin{aligned} U(1) &= V + \alpha p + \gamma a + \lambda_\alpha E(\alpha|a, p, 1) + \lambda_\gamma E(\gamma|a, p, 1) \geq \\ U(0) &= \lambda_\alpha E(\alpha|a, p, 0) + \lambda_\gamma E(\gamma|a, p, 0) \end{aligned}$$

  or

$$V + \alpha p + \gamma a + \Delta(a, p) > 0$$

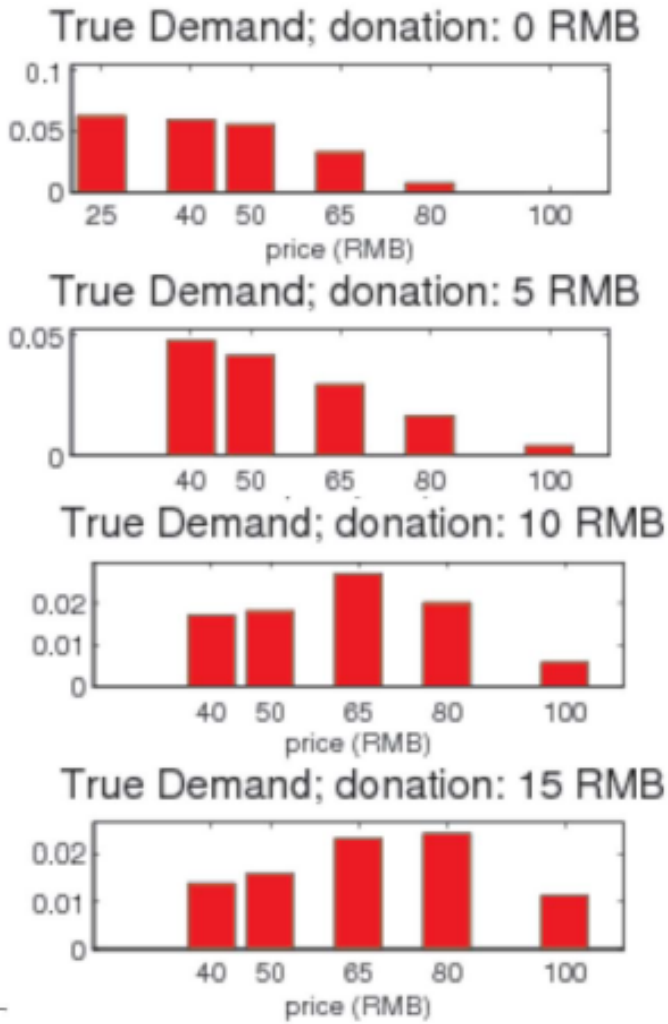
  where Δ is net ego utility

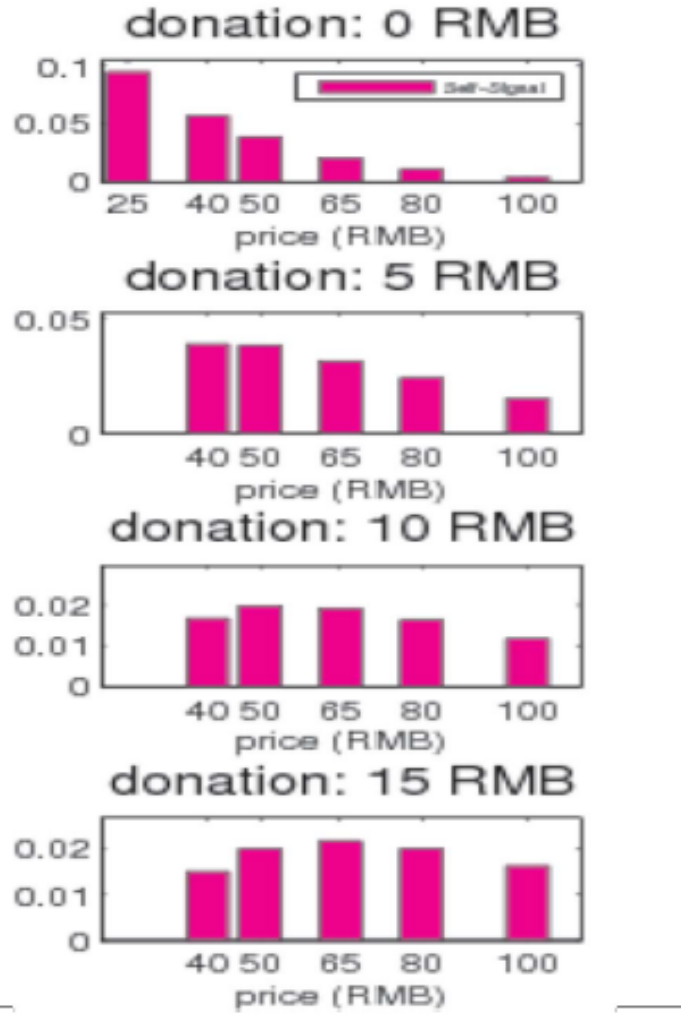
- Updating on γ if purchase $(y = 1)$:

$$E\left(\gamma|\gamma > -\frac{V + \alpha p + \Delta(a, p)}{a}\right)$$

- Specify priors on parameters to derive separating equilibrium of signaling game

True Demand vs. Model





Parameter Values

- Remarkably good fit, but value of some parameters odd
  - Relatedly: How much do you need ego utility on price elasticity: not obvious to interpret

$$\lambda_\gamma E\left(\gamma|a,p,y^h\right)+\lambda_\alpha E\left(\alpha|a,p,y^h\right)$$

  - Relatedly: Estimation of some parameters appears problematic
    - Value V of good negative on average?

    (What if allow for not all to pay attention)
    - σ_α is at boundary

	coefficient	st. error
Donation ($\bar{\gamma}$)	-0.1411	0.1345
Price, (α)	-0.0183	0.0077
Intercept, ($\bar{V}$)	-0.8526	0.225
σ_γ	0.1327	0.0632
σ_α	0.0001	0.307
λ_γ	2.1948	0.7931
λ_α	-15.9831	3.452

Other Work

- **Karing (2018)**: Introduce social signal for health choice
  - Bracelet for mothers to wear (in Sierra Leone) when child reached 3rd vaccination
  - Compare to control group that got object of similar private value, but with no signaling capacity
  - Does this motivate additional vaccination?
- **Birke (2018):** Study of precise predictions of crowd-out with effort task
  - Consider pro-social behavior, like coding for GitHub
  - Introduce a private incentive, say a payment for coding 1,000 lines
  - Standard model has bunching at threshold
  - Social signaling has anti-bunching instead, as people signal that they are not motivated by love of money, but more by pro-social mission

Section 7

Social Norms

Social Norms

- Utility is

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

  where $\bar{x}$ is a prescribed social norm
- The individual pays a disutility cost from deviating from norm
  - E.g., equal sharing in dictator game (Krupka and Weber, 2013)
  - E.g., a behavior prescribed by one's identity (Akerlof and Kranton, 2003)
- Can explain:
  - People are generous in some settings, not others, if social norms prescribes so
- Drawback:
  - Need to explain where social norm comes from

Krupka and Weber (2013)

- **Krupka and Weber (JEEA 2013)**
- Consider social preference experiments with moral wriggle-room
  - dictator games with exit
  - avoidance of information
- Can observed behavior in these experiments be explained with a social norm term $\gamma (x_s - \bar{x})^2$?
- Elicit social norm by asking how acceptable each action is
  - More precisely, to incentivize reporting, ask subjects to predict how socially acceptable other forecasters will find an action
  - Pay for accuracy in prediction
  - Then transform this measure with scaling into a measure of acceptability of an action

Elicitation of Social Norms

TABLE 1. Elicited norms ($N(a_k)$) for bully versus standard dictator environments (data from Experiment 1).

Action (final wealth)	Standard ($n = 107$) (Initial wealth: \$10, \$0)						Bully ($n = 92$) (Initial wealth: \$5, \$5)						*Rank-sum test (z)*
	Action	**Mean**	−−	−	+	++	**Action**	**Mean**	−−	−	+	++	
\$10, \$0	"Give \$0"	**−0.80**	82%	10%	3%	5%	"Take \$5"	**−0.90**	91%	5%	0%	3%	*1.85**
\$9, \$1	"Give \$1"	**−0.64**	61%	31%	3%	6%	"Take \$4"	**−0.83**	82%	14%	1%	3%	*3.13****
\$8, \$2	"Give \$2"	**−0.44**	35%	51%	10%	4%	"Take \$3"	**−0.67**	55%	40%	3%	1%	*3.27****
\$7, \$3	"Give \$3"	**−0.16**	8%	62%	26%	4%	"Take \$2"	**−0.38**	28%	53%	16%	2%	*3.34****
\$6, \$4	"Give \$4"	**0.14**	3%	30%	61%	7%	"Take \$1"	**−0.09**	12%	46%	36%	7%	*3.42****
\$5, \$5	"Give \$5"	**0.87**	0%	3%	14%	83%	"Give \$0" / "Take \$0"	**0.93**	0%	0%	11%	89%	*1.26*
\$4, \$6	"Give \$6"	**0.57**	0%	7%	50%	43%	"Give \$1"	**0.48**	4%	12%	40%	43%	*0.72*
\$3, \$7	"Give \$7"	**0.42**	1%	22%	39%	37%	"Give \$2"	**0.31**	7%	23%	38%	33%	*1.12*
\$2, \$8	"Give \$8"	**0.32**	6%	31%	23%	40%	"Give \$3"	**0.20**	14%	27%	23%	36%	*1.08*
\$1, \$9	"Give \$9"	**0.22**	17%	24%	19%	40%	"Give \$4"	**0.10**	27%	16%	21%	31%	*0.99*
\$0, \$10	"Give \$10"	**0.18**	26%	13%	18%	43%	"Give \$5"	**0.04**	36%	10%	16%	38%	*1.13*

$^{*}p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$; all two-tailed.
Responses are: "very socially inappropriate" (−−), "somewhat socially inappropriate" (−), "somewhat socially appropriate" (+), "very socially appropriate" (++); modal response are shaded. To construct the mean ratings, we converted responses into numerical scores ("very socially inappropriate" = −1, "somewhat socially inappropriate" = −1/3, "somewhat socially appropriate" = 1/3, "very socially appropriate" = 1).

- Example for standard dictator game versus dictator game with different framing ("bully" game)
- Derive summary measure of acceptability, $s(a)$, for each action a

Elicitation of Social Norms

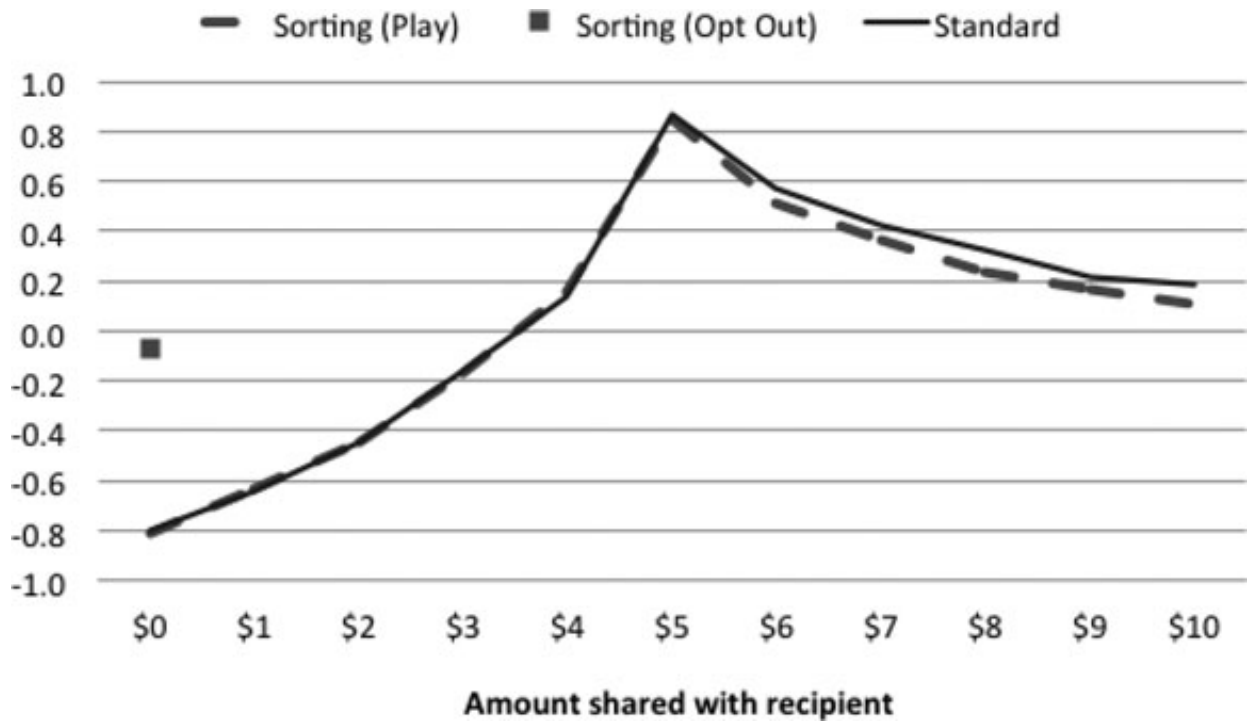


FIGURE 3. Mean ratings of social appropriateness from standard versus sorting treatments (data from Experiment 1).

- In dictator game with sorting, sorting out is much more acceptable than not giving

Fitting Behavior

- How well can predict behavior with simple model:

$$U(a) = u(x_s) + \gamma s(a)$$

TABLE 3. Conditional (fixed-effect) logit estimation of choice determinants across experiments (includes mean appropriateness ratings from Experiment 1 as an explanatory variable).

Behavioral data (experimental treatment)	Experiment 2 (Standard vs. Bully)		Lazear et al. (2012) (Standard vs. Sorting)		List (2007) (Standard vs. Take $1)		Data from all three experiments	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Monetary payoff (β)	0.656***	0.630***	0.811***	0.810***	1.456***	1.312***	0.750***	0.808***
	(0.132)	(0.138)	(0.075)	(0.075)	(0.408)	(0.401)	(0.060)	(0.105)
Appropriateness rating (γ)	1.858***	1.556***	2.304***	2.283***	1.941**	1.982**	1.856***	2.192***
	(0.410)	(0.521)	(0.287)	(0.312)	(0.921)	(0.843)	(0.204)	(0.326)
Appropriateness rating X non-standard treatment		0.374		0.062		−0.629		
		(0.326)		(0.331)		(0.593)		
Monetary payoff X Lazear et al., experiment								−0.094
								(0.127)
Appropriateness rating X Lazear et al., experiment								−0.125
								(0.470)
Monetary payoff X List experiment								0.426
								(0.391)
Appropriateness rating X List experiment								−1.029
								(1.038)
$2\gamma/\beta$	*5.66***	*4.94***	*5.68***	*5.64***	*2.67***	*3.02***	*4.95***	*5.43***
	(0.49)	*(0.98)*	*(0.39)*	*(0.48)*	*(0.98)*	*(0.90)*	*(0.29)*	*(0.30)*
Log-likelihood	−208.5	−207.7	−308.8	−308.7	−126.8	−126.1	−672.3	−649.8
Obs.	1,166	1,166	2,105	2,015	816	816	4,087	4,087
(subjects)	(106)	(106)	(183)	(183)	(70)	(70)	(359)	(359)

*$p < 0.1$; **$p < 0.05$; ***$p < 0.01$; all two-tailed.
Bootstrapped standard errors are in parentheses. The variable "appropriateness rating" converts subject responses in Experiment 1 to numerical scores ("very socially inappropriate" = –1, "somewhat socially inappropriate" = –1/3, "somewhat socially appropriate" = 1/3, "very socially appropriate" = 1).

Explaining Dictator Game with Sorting

- Good fit of observed behavior in dictator game with sorting

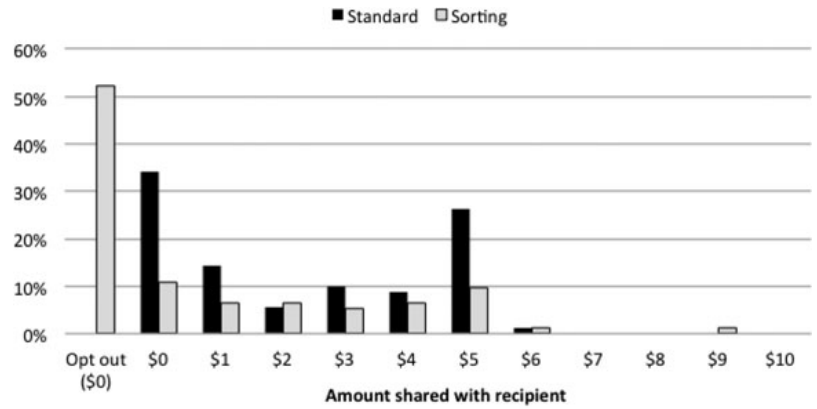


FIGURE 2(a). Distributions of amounts shared in standard versus sorting treatments (data from Experiments 1 and 2 of Lazear, Malmendier, and Weber 2012).

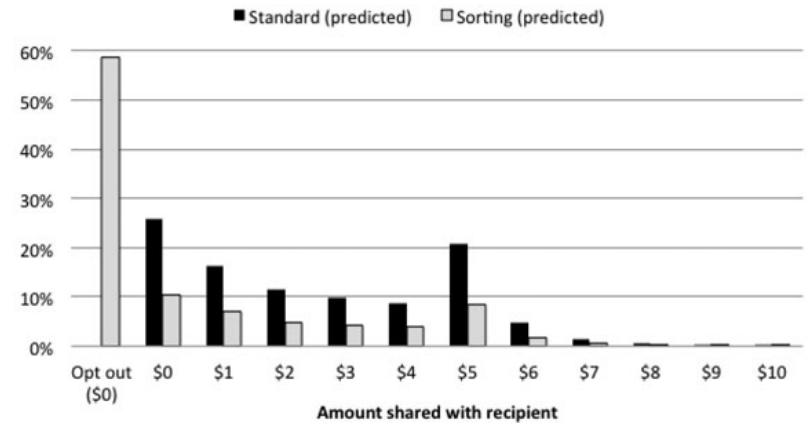


FIGURE 2(b). Predicted distributions of amounts shared in standard versus sorting treatments (based on coefficients in Table 3, Model 3).

Field Evidence on Social Norms

- Field evidence on social norms relies typically on public/private design
- Identify setting where it is clear what is the signal to be sent:
  - Example 1: Student wants to signal that she is cool (eg., not hard-working), see "acting white" literature
  - Example 2: Student wants to signal that she is smart (and hard-working)
  - Example 3: Single professional woman wants to signal that she is not too ambitious
- Offer a choice and randomize whether the choice is private, or publicly observed by peers
- When choice is public, signaling component is turned on –> Estimate impact on choice
- Series of papers by Leonardo Bursztyn

Social Norms in Education

- **Bursztyn and Jensen (QJE 2015)**
- Experiment in 4 Los Angeles public high schools
  - 11th graders, low income, 96% Hispanic
- N=560 students in non-honors classes, N=265 in honors classes
- Offer free SAT prep course (normally costs $200)
  - *"[Company Name] is offering a free online test preparation course for the SAT that is intended to improve your chances of being accepted and receiving financial aid at a college you like."*
  - Public condition: "*Your decision to sign up for the course will be kept completely private from everyone, except the other students in the room*"
  - Private condition: "*Your decision to sign up for the course will be kept completely private from everyone, including the other students in the room*"
- Randomization within classroom

Social Norms in Education

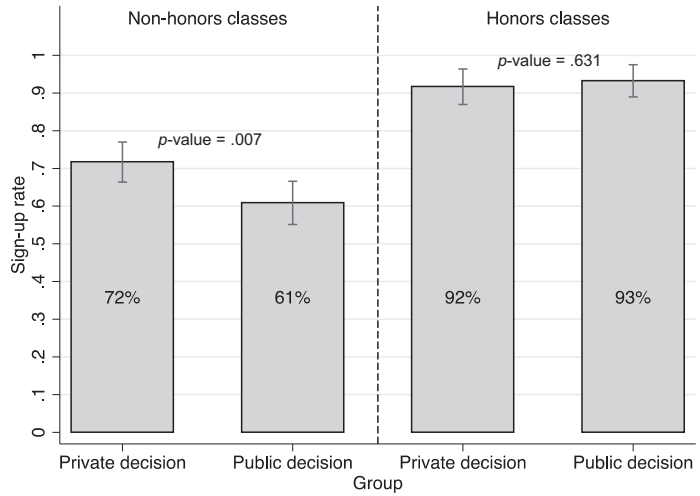


FIGURE IV

Sign-up Rates for Private versus Public Decisions, NonHonors versus Honors Classes

- Results:
  - Take up is higher in honors class, as expected
  - Public (vs private) has slight positive effect for honors class (ceiling effect)
  - Public (vs private) has strong negative effect for non-honors class
- Interpretation: students do not like to signal to peers in non-honors class that they want to go to college, uncool

Social Norms and Gender Roles

- Evidence from speed dating (eg, Fisman, Kamenica, Simonsohn, Yiengar 2006) suggest that
  - women value professional ambition and achievements in men
  - men instead are conflicted about professional ambition and achievements in women
- Does this impact signals sent by single men versus single women?
- **Bursztyn, Fujiwara, and Pallais (AER 2017)**
- Setting is prestigious MBA
- Questionnaire during session with career center on 1st day
  - Randomize whether mention that answers will be discussed
  - "*The information on this survey will help the career center get to know you and help it find the right fit for your first-year internship. [...] This information will be shared with your career advisor and* **[your/anonymized]** *answers will be discussed during the [name of the career class].*"

Social Norms and Gender Roles

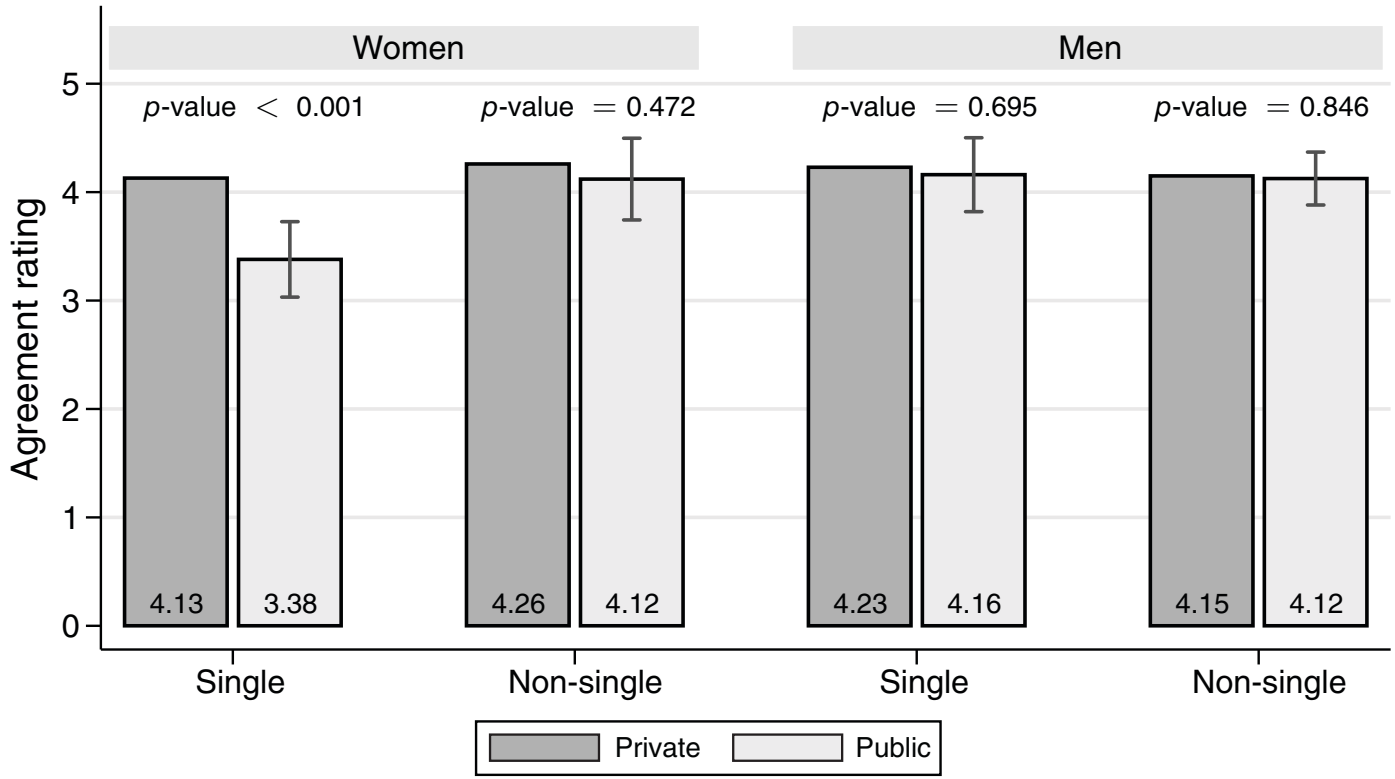


FIGURE 6. PROFESSIONAL AMBITION (*Primary Experiment*)

- Single women in public distort their stated ambition, at a real cost

Section 8

Next Lecture

Next Lecture

- Non-Standard Beliefs
  - Overconfidence
  - Law of Small Numbers
  - Projection Bias
- Non-Standard Decision-Making
  - Limited Attention I