Econ 219B
Psychology and Economics: Applications
(Lecture 6)

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Outline

1. Social Preferences: Introduction

2. Social Preferences: Gift Exchange

3. Social Preferences: Workplace

4. Social Preferences: Charitable Giving I

5. Methodology: Field Experiments
1 Social Preferences: Introduction

- Laboratory data from ultimatum, dictator, and trust games
  $\rightarrow$ Clear evidence of social preferences

- Fehr-Schmidt (QJE, 1999) and Charness-Rabin (QJE, 2002)

- Simplified model of preferences of $B$ when interacting with $A$:
  \[
  U_B(\pi_A, \pi_B) \equiv \rho \pi_A + (1 - \rho) \pi_B \quad \text{when } \pi_B \geq \pi_A.
  \]
  \[
  U_B(\pi_A, \pi_B) \equiv \sigma \pi_A + (1 - \sigma) \pi_B \quad \text{when } \pi_B \leq \pi_A.
  \]

- Captures:
  - baseline altruism (if $\rho > 0$ and $\sigma > 0$)
  - differentially so if ahead or behind ($\rho > \sigma$)
- Example: Dictator Game. Have $10 and have to decide how to share

- Forsythe et al. (GEB, 1994): sixty percent of subjects transfers a positive amount.

- Transfer $5 if

  \[ \rho 5 + (1 - \rho) 5 = 5 \geq \rho 0 + (1 - \rho) 10 \rightarrow \rho \geq 1/2 \text{ and} \]

  \[ \sigma 5 + (1 - \sigma) 5 \geq \sigma 10 + (1 - \sigma) 0 \rightarrow \sigma \leq 1/2 \]

- Transfer $5 if \( \rho \geq .5 \geq \sigma \)
• Taking this to field data? Hard

• **Charitable giving.**

• Qualitative Patterns consistent overall with social preferences:
  
  – 240.9 billion dollars donated to charities in 2002 (Andreoni, 2006)
  
  – 2 percent of GDP

• Quantitative patterns, however: Hard to fit with models of social preferences from the lab
• Issue 1:
  
  – Person $B$ with disposable income $M_B$ meets needy person $A$ with income $M_A < M_B$
  
  – Person $B$ decides on donation $D$
  
  – Assume parameters $\rho \geq .5 \geq \sigma$
  
  – This implies $\pi^*_A = \pi^*_B \implies M_B - D^* = M_A + D^* \implies D^* = (M_B - M_A)/2$
  
  – Wealthy person transfers half of wealth difference!
  
  – Clearly counterfactual
• Issue 2.
  – Lab: Person $A$ and $B$.
  – Field: Millions of needy people. Public good problem

• Issue 3.
  – Lab: Forced interaction.
  – Field: Sorting – can get around, or look for, occasions to give
• In addition to payoff-based social preferences, intentions likely to matter

• $\rho$ and $\sigma$ higher when $B$ treated nicely by $A$

• Positive reciprocity and negative reciprocity

• More evidence of the latter in experiments
2 Social Preferences: Gift Exchange

- Laboratory evidence: Fehr-Kirchsteiger-Riedl (QJE, 1993).
  - 5 firms bidding for 9 workers
  - Workers are first paid $w \in \{0, 5, 10, \ldots\}$ and then exert effort $e \in [0, 1]$
  - Firm payoff is $(126 - w)e$
  - Worker payoff is $w - 26 - c(e)$, with $c(e)$ convex (but small)

- Standard model: $w^* = 30$ (to satisfy IR), $e^*(w) = .1$ for all $w$
- Findings: effort $e$ increasing in $w$ and $Ew = 72$

- These findings are stable over time
• Where evidence of gift exchange in the field?

• 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
Appendix: An example of the included postcards

Our benefits lie in children's smiles
• **Short-Run effect**: Donations within 3 months

<table>
<thead>
<tr>
<th></th>
<th>No gift</th>
<th>Small gift</th>
<th>Large gift</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of solicitation letters</td>
<td>3,262</td>
<td>3,237</td>
<td>3,347</td>
</tr>
<tr>
<td>Number of donations</td>
<td>397</td>
<td>465</td>
<td>691</td>
</tr>
<tr>
<td>Relative frequency of donations</td>
<td>0.12</td>
<td>0.14</td>
<td>0.21</td>
</tr>
</tbody>
</table>

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

• 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)
• **Gneezy-List (EMA, 2006)**  →  Evidence from labor markets

• *Field experiment 1.* Students hired for one-time six-hour (typing) library job for $12/hour
  – No Gift group paid $12 ($N = 10$)
  – Gift group paid $20 ($N = 9$)
• **Field experiment 2.** Door-to-Door fund-raising in NC for one-time weekend for $10/hour
  - Control group paid $10 \((N = 10)\)
  - Treatment group paid $20 \((N = 13)\)

• Note: Group coming back on Sunday is subset only \((4+9)\)
• Evidence of reciprocity, though short-lived

• Issue: These papers test only for positive reciprocity

• Laboratory evidence: negative reciprocity stronger than positive reciprocity

• More difficult to test for negative reciprocity

• Can say that pay is random and see what happens to (randomly) lower paid people
• Kube-Marechal-Puppe (2007).

• Field Experiment: Hire job applicants to catalog books for 6 hours
• Announced Wage: ‘Presumably’ 15 Euros/hour

  – Control ($n = 10$). 15 Euros/hour

  – Treatment 1 (Negative Reciprocity, $n = 10$). 10 Euros/hour (No one quits)

  – Treatment 2 (Positive Reciprocity, $n = 9$). 20 Euros/hour

• Offer to work one additional hour for 15 Euros/hour
• Result 1: Substantial effect of pay cut
• Result 2: Smaller effect of pay increase
• Result 3: No decrease over time
• Notice: No effect on quality of effort (no. of books incorrectly classified)

• Finding consistent with experimental results:
  - Positive reciprocity weaker than negative reciprocity

• Final result: No. of subjects that accept to do one more hour for 15 Euro:
  - 3 in Control, 2 in Pos. Rec., 7 in Neg. Rec.
  - Positive Reciprocity does not extend to volunteering for one more hour
• Kube-Marechal-Puppe (2008).

• Field Experiment 2: Hire job applicants to catalog books for 6 hours

• Announced Wage: 12 Euros/hour for 3 hours = 36
  – Control \( (n = 17) \). 36 Euros
  – Treatment 1 (Positive Reciprocity, Cash, \( n = 16 \)). \( 36 + 7 = 43 \) Euros
  – Treatment 2 (Positive Reciprocity, Gift, \( n = 15 \)). 36 Euros plus Gift of Thermos
  – Treatment 3 – Same as Tr. 2, but Price Tag for Thermos
• What is the effect of cash versus in-kind gift?
• Result 1: Small effect of 20% pay increase
• Result 2: Large effect of Thermos $\rightarrow$ High elasticity, can pay for itself
• Result 3: No decrease over time
• Explanation 1. Thermos perceived more valuable
  – –> But Treatment 3 with price tag does not support this
  – Additional Experiment:
    * At end of (unrelated) lab experiment, ask choice for 7 Euro or Thermos
    * 159 out of 172 subjects prefer 7 Euro

• Explanation 2. Subjects perceive the thermos gift as more kind, and respond with more effort

• Survey: Ask which is kinder? Thermos rated higher in kindness than 7 Euro
• Wat is missing from these paper? **Model**

• Fehr, Kirchsteiger, and Riedl (QJE, 1993) - Two main model-based explanations:
  
  – *Reciprocity* (Rabin, 1993; Dufwenberg and Kirchsteiger, 2003): Worker is nice towards firm because firm showed nice intentions

  – *Inequity Aversion* (Fehr and Schmidt, 1999): Worker puts effort because firm had fallen behind in payoffs by putting effort

• Model for Gneezy and List (2006) and follow-up work?
  
  – Inequity aversion does not predict gift exchange in the field
– Intuition: Firm does not fall behind the worker just because of a pay increase

• Hence, in the field gift exchange, when occurs, is due to reciprocity, not inequity aversion

• Model would also make finer predictions

• Moreover, model would also give a sense of magnitudes
  – How much reciprocity does gift exchange indicate?
  – What are welfare effects of gift?
• Key unobservable is *cost of effort*: How costly is it to increase effort at margin?

• If not costly \(\rightarrow\) minuscule reciprocity can generate gift exchange

• If costly \(\rightarrow\) reciprocity needs to be sizeable

• Additional treatments varying announced pay (but holding sample constant) can identify elasticity

• Frontier in this literature
• List (JPE, 2006). Test of social preferences from sellers to buyers

• Context: sports card fairs —> Buyers buying a particular (unrated) card from dealers

• Compare effect of laboratory versus field setting

• Treatment I-R. Clever dual version to the Fehr-Kirchsteiger-Riedl (1993) payoffs
  – Laboratory setting, abstract words
  – Buyer pay \( p \in \{5, 10, \ldots\} \) and dealer sells card of quality \( q \in [0.1, 1] \)
  – Buyer payoff is \( (80 - p)q \)
  – Dealer payoff is \( p - c(q) \), with \( c(q) \) convex (but small)

• Standard model: \( p^* = 5 \) (to satisfy IR), \( q^*(p) = 0.1 \) for all \( p \)
- Effect: Substantial reciprocity
  - Buyers offer prices $p > 0$
  - Dealers respond with increasing quality to higher prices
- *Treatment I-RF.* Similar result (with more instances of $p = 5$) when payoffs changed to
  - Buyer payoff is $v(q) - p$
  - Dealer payoff is $p - c(q)$, with $c(q)$ convex (but small)
  - $v(q)$ estimated value of card to buyer, $c(q)$ estimate cost of card to dealer
• Treatment II-C. Same as Treatment I-RF, except that use context (C) of Sports Card

• Relatively similar results
• *Treatment II-M* → Laboratory, real payoff (for dealer) but...
  – takes place with face-to-face purchasing
  – Group 1: Buyer offers $20 for card of quality PSA 9
  – Group 2: Buyer offers $65 for card of quality PSA 10
  – Substantial “gift exchange”
• *Treatment III* — In field setting, for real payoffs (for dealer)
  – Group 1: Buyer offers $20 for card of quality PSA 9
  – Group 2: Buyer offers $65 for card of quality PSA 10
  – Lower quality provided, though still “gift exchange”
- However, “gift exchange” behavior depends on who the dealer is
  - Local dealer (frequent interaction): Strong “gift exchange”
  - Non-Local dealer (frequent interaction): No “gift exchange”

- This appears to be just rational behavior

- Treatment IV. → Test a ticket market before (IV-NG) and after (IV-AG and IV-G) introduction of certification
  - No “gift exchange” in absence of certification (IV-NG)
  - “gift exchange” only for local dealers
Table 1. Experimental Design

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Treatment I-R</th>
<th>Treatment I-RF</th>
<th>Treatment I-RF1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment I</td>
<td>Replicate lab studies</td>
<td>Extend to field values</td>
<td>Extend to one-shot environment</td>
</tr>
<tr>
<td></td>
<td>$n = 25$</td>
<td>$n = 25$</td>
<td>$n = 27$</td>
</tr>
<tr>
<td>Treatment II</td>
<td>Treatment II-C</td>
<td>Treatment II-MS20</td>
<td>Treatment II-MS65</td>
</tr>
<tr>
<td></td>
<td>Adds market context</td>
<td>Adds market interaction</td>
<td>Adds market interaction</td>
</tr>
<tr>
<td></td>
<td>$n = 32$</td>
<td>$n = 30$</td>
<td>$n = 30$</td>
</tr>
<tr>
<td>Treatment III</td>
<td>Treatment III$S20</td>
<td>Treatment III$S65</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Naturally occurring sportscards</td>
<td>Naturally occurring sportscards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$n = 50$</td>
<td>$n = 50$</td>
<td></td>
</tr>
<tr>
<td>Treatment IV</td>
<td>Treatment IV-NG</td>
<td>Treatment IV-AG</td>
<td>Treatment IV-G</td>
</tr>
<tr>
<td></td>
<td>Naturally occurring tickets before grading was available</td>
<td>Naturally occurring tickets post-grading announcement</td>
<td>Naturally occurring tickets when grading service is available</td>
</tr>
<tr>
<td></td>
<td>$n = 60$</td>
<td>$n = 54$</td>
<td>$n = 36$</td>
</tr>
</tbody>
</table>

Notes: Each cell represents one (or two, in the case of Treatment IV) unique treatment. For example, Treatment I-R in row 1, column 1, denotes that 25 dealer and 25 nondealer observations were gathered to replicate the laboratory gift exchange studies in the literature.
Table 3: Marginal Effects Estimates for the Sellers’ Quality\(^a,b\)

<table>
<thead>
<tr>
<th>Variable</th>
<th>I-R</th>
<th>I-RF</th>
<th>I-RFI</th>
<th>II-C</th>
<th>II-M</th>
<th>III</th>
<th>IV-NG</th>
<th>IV-AG</th>
<th>IV-G</th>
<th>IV-P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price</strong></td>
<td>0.05*</td>
<td>0.05^</td>
<td>0.10^</td>
<td>0.06^</td>
<td>0.02^</td>
<td>0.02^</td>
<td>-0.001</td>
<td>0.02^</td>
<td>0.02</td>
<td>0.02^</td>
</tr>
<tr>
<td></td>
<td>(1.8)</td>
<td>(3.3)</td>
<td>(5.0)</td>
<td>(4.2)</td>
<td>(4.4)</td>
<td>(6.6)</td>
<td>(0.01)</td>
<td>(2.1)</td>
<td>(1.1)</td>
<td>(2.6)</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>0.6</td>
<td>-0.4</td>
<td>-0.8</td>
<td>-0.6</td>
<td>1.6^</td>
<td>0.6^</td>
<td>1.7^</td>
<td>1.6^</td>
<td>1.8^</td>
<td>1.7^</td>
</tr>
<tr>
<td></td>
<td>(0.7)</td>
<td>(0.7)</td>
<td>(1.7)</td>
<td>(1.7)</td>
<td>(6.2)</td>
<td>(3.1)</td>
<td>(8.0)</td>
<td>(5.8)</td>
<td>(3.3)</td>
<td>(7.3)</td>
</tr>
<tr>
<td>(\theta)</td>
<td>---</td>
<td>$0.72^\wedge$</td>
<td>$1.3^\wedge$</td>
<td>$0.77^\wedge$</td>
<td>$0.45^\wedge$</td>
<td>$0.21^\wedge$</td>
<td>$0.01$</td>
<td>$0.17$</td>
<td>$0.23$</td>
<td>$0.21^\wedge$</td>
</tr>
<tr>
<td></td>
<td>(3.6)</td>
<td>(3.5)</td>
<td>(4.2)</td>
<td>(2.1)</td>
<td>(5.0)</td>
<td>(0.3)</td>
<td>(1.1)</td>
<td>(1.1)</td>
<td>(1.1)</td>
<td>(2.3)</td>
</tr>
<tr>
<td>Person Random Effects</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>N</td>
<td>25</td>
<td>25</td>
<td>27</td>
<td>32</td>
<td>60</td>
<td>100</td>
<td>60</td>
<td>54</td>
<td>36</td>
<td>90</td>
</tr>
</tbody>
</table>

\(^a\) Dependent variable is the sellers’ product quality given to the buyer. IV-P pools IV-AG and IV-G data. \(\theta\) is the monetary gift exchange estimate, computed as \(\text{ev}(q)/\theta\).

\(^b\) t-ratios (in absolute value) are beneath marginal effect estimates.

\(^\wedge\) Significant at the 0.05 level.

\(^\ast\) Significant at the 0.10 level.

Table 4: Marginal Effects Estimates for the Sellers’ Quality Split by Dealer Type\(^a,b,c,e\)

<table>
<thead>
<tr>
<th>Variable</th>
<th>III_L</th>
<th>III_S</th>
<th>IV-NG_L</th>
<th>IV-NG_S</th>
<th>IV-AG_L</th>
<th>IV-AG_S</th>
<th>IV-G_L</th>
<th>IV-G_S</th>
<th>IV-P_L</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price</strong></td>
<td>0.03^</td>
<td>0.004</td>
<td>0.002</td>
<td>-0.005</td>
<td>0.04^</td>
<td>0.003</td>
<td>0.04^</td>
<td>0.003</td>
<td>0.04^</td>
</tr>
<tr>
<td></td>
<td>(8.6)</td>
<td>(0.7)</td>
<td>(0.2)</td>
<td>(0.5)</td>
<td>(2.1)</td>
<td>(0.3)</td>
<td>(2.7)</td>
<td>(0.1)</td>
<td>(4.8)</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>0.6^</td>
<td>0.6^</td>
<td>1.6^</td>
<td>1.8^</td>
<td>1.7^</td>
<td>1.5^</td>
<td>1.8^</td>
<td>1.8^</td>
<td>1.8^</td>
</tr>
<tr>
<td></td>
<td>(4.1)</td>
<td>(4.6)</td>
<td>(5.0)</td>
<td>(5.2)</td>
<td>(5.2)</td>
<td>(4.6)</td>
<td>(5.0)</td>
<td>(1.7)</td>
<td>(10.0)</td>
</tr>
<tr>
<td>(\theta)</td>
<td>$0.31^\wedge$</td>
<td>$0.01$</td>
<td>$0.02$</td>
<td>$-0.006$</td>
<td>$0.32$</td>
<td>$0.02$</td>
<td>$0.42$</td>
<td>$0.03$</td>
<td>$0.35^\wedge$</td>
</tr>
<tr>
<td></td>
<td>(5.2)</td>
<td>(0.5)</td>
<td>(0.4)</td>
<td>(0.5)</td>
<td>(1.4)</td>
<td>(0.6)</td>
<td>(1.5)</td>
<td>(0.1)</td>
<td>(2.1)</td>
</tr>
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<td>Person Random Effects</td>
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<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>N</td>
<td>70</td>
<td>30</td>
<td>36</td>
<td>24</td>
<td>30</td>
<td>24</td>
<td>20</td>
<td>16</td>
<td>50</td>
</tr>
</tbody>
</table>
• Conclusion on gift exchange and social preferences

  – Reciprocation and gift exchange are present in field-type setting (Falk)

  – They disappear fast (Gneezy-List)...

  – ...Or maybe not (Kube et al.)

  – They are stronger on the negative than on the positive side (Kube et al.)

  – Not all individuals display them – not dealers, for example (List)

  – Laboratory settings may (or may not) matter for the inferences we derive
3 Social Preferences: Workplace

- In the workplace, do workers respond in kind to generous behavior by employers?

- Basis for some efficiency wage models
  - Natural Experiment: Krueger-Mas (2004)
  - Field Experiment on Social Preferences: Bandiera-Barankay-Rasul (2005)
  - Field Experiments on Gift Exchange: Kube-Marechel-Puppe and Gneezy-List
- 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
• Do workers sabotage production at firm?
  – Examine claims per million tires produced in plants affected
  – Compare to plant not affected by strike (Joliette&Wilson)
• 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
Figure 8: Difference in the Number of Complaints per million Tires Produced by Month: Decatur Plant minus Joliet and Wilson Plants.

Source: Authors’ calculations based on NHTSA complaints data. Records with missing data are excluded.
• 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
• Bandiera-Barankay-Rasul (QJE, 2005).

• Test for impact of social preferences in the workplace

• Use personnel data from a fruit farm in the UK

• Measure productivity as a function of compensation scheme

• Timeline:
  – First 8 weeks of the 2002 picking season \( \rightarrow \) Fruit-pickers compensated on a relative performance scheme
    * Per-fruit piece rate is decreasing in the average productivity.
    * Workers that care about others have incentive to keep the productivity low
  – Next 8 weeks \( \rightarrow \) Compensation switched to flat piece rate per fruit
  – Switch announced on the day change took place
- Dramatic 50 percent increase in productivity
• No other significant changes

<table>
<thead>
<tr>
<th>Relative incentives</th>
<th>Piece rates</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worker productivity (kg/hr)</td>
<td>5.01 (.243) [4.53, 5.49]</td>
<td>7.98 (.208) [7.57, 8.39]</td>
</tr>
<tr>
<td>Kilos picked per day</td>
<td>Confidential</td>
<td>23.2***</td>
</tr>
<tr>
<td>Hours worked per day</td>
<td>Confidential</td>
<td>-.475</td>
</tr>
<tr>
<td>Number of workers in same field</td>
<td>41.1 (2.38)</td>
<td>38.1 (1.29)</td>
</tr>
<tr>
<td>Daily pay</td>
<td>Confidential</td>
<td>1.80</td>
</tr>
<tr>
<td>Unit wage per kilogram picked</td>
<td>Confidential</td>
<td>-.105***</td>
</tr>
</tbody>
</table>

*** denotes significance at 1 percent. Sample sizes are the same as those used for the productivity regressions. Standard errors and confidence intervals take account of the observations being clustered by field-day. Productivity is measured in kilograms per hour. Daily pay refers to pay from picking only. Both daily pay and the unit wage per kilogram picked are measured in UK Pounds Sterling. Some information in the table cannot be shown due to confidentiality requirements.

• Is this due to response to change in piece rate?
  – No, piece rate went down → Incentives to work less (susbt. effect)
• Results robust to controls

• Results are stronger the more friends are on the field

<table>
<thead>
<tr>
<th></th>
<th>(1a) Relative incentives</th>
<th>(1b) Relative incentives</th>
<th>(2a) Piece rates</th>
<th>(2b) Piece rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of workers in the</td>
<td>-1.68*** (.647)</td>
<td>-5.52** (2.36)</td>
<td>.072 (1.60)</td>
<td></td>
</tr>
<tr>
<td>field who are friends</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Share of workers in the</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>field who are friends ×</td>
<td></td>
<td>1.60** (.684)</td>
<td>-0.285 (1.60)</td>
<td></td>
</tr>
<tr>
<td>number of workers in</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>same field</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of workers in</td>
<td>.182 (.117)</td>
<td>.085 (.069)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>same field</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marginal effect of group</td>
<td>.236** (.110)</td>
<td>.076 (.065)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>size (at mean friends’</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>share)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worker fixed effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Field fixed effects</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Other controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>.3470</td>
<td>.3620</td>
<td>.3065</td>
<td>.3081</td>
</tr>
<tr>
<td>Number of observations</td>
<td>2860</td>
<td>2860</td>
<td>4400</td>
<td>4400</td>
</tr>
<tr>
<td>(worker-field-day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
• Two Interpretations:
  
  – Social Preferences:
    * Work less to help others
    * Work even less when friends benefit, since care more for them
  
  – Repeated Game
    * Enforce low-effort equilibrium
    * Equilibrium changes when switch to flat pay

• Test: Observe results for tall plant where cannot observe productivity of others (raspberries vs. strawberries)
• Compare Fruit Type 1 (Strawberries) to Fruit Type 2 (Raspberries)
  – No effect for Raspberries

<table>
<thead>
<tr>
<th></th>
<th>(1) Fruit type 2</th>
<th>(2) Fruit type 1</th>
<th>(3) Fruit types 1 and 2 combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Piece rate dummy ($P_i$)</td>
<td>-.063 (.129)</td>
<td>.483*** (.094)</td>
<td>-.100 (.095)</td>
</tr>
<tr>
<td>Piece rate × fruit type 2</td>
<td></td>
<td></td>
<td>.490*** (.092)</td>
</tr>
<tr>
<td>Piece rate × fruit type 1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• → No Pure Social Preferences. However, can be reciprocity

• Important to control for repeated game effects → Next papers
• Social Comparisons in the Workplace

• General idea – when is something fair in the marketplace?

1. Pricing. When are price increases acceptable?
   – Kahneman, Knetsch and Thaler (1986)
   – Survey evidence
   – Effect on price setting

2. Wage setting. Fairness toward other workers → Wage compression
• Card-Mas-Moretti-Saez (forthcoming)
  – Study of job satisfaction for UC employees
  – Examine the impact of salary comparisons

• UC is ideal setting:
  – Salaries are public
  – But not as easy to access
  – Sacramento Bee posted them online

• Design:
- Email survey to staff at various University of California Campuses

- Field experiment on content of survey

- Mention to some, but not others, the website of the Sacramento Bee: "Are you aware of the web site created by the Sacramento Bee newspaper that lists salaries for all State of California employees? (The website is located at www.sacbee.com/statepay, or can be found by entering the following keywords in a search engine: Sacramento Bee salary database)."

- Counting on human curiosity for first stage...

- Follow-up survey to measure job satisfaction and interest in moving to other job
- Impact on stated job satisfaction and reported intention to look for new job
## Table 4: Effect of Information Treatment on Measures of Job Satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Satisfaction Index (10 point scale)</th>
<th>Reports Very likely to Look for New Job (Yes = 1)</th>
<th>Dissatisfied and Likely Looking for a New Job (Yes = 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Treated individual</td>
<td>-2.0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(2.2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I. Treated individual with earnings ≤ median pay in unit</td>
<td>-</td>
<td>-6.3</td>
<td>-</td>
</tr>
<tr>
<td>(2.9)</td>
<td></td>
<td>(1.8)</td>
<td></td>
</tr>
<tr>
<td>II. Treated individual with earnings &gt; median pay in unit</td>
<td>-</td>
<td>2.0</td>
<td>2.2</td>
</tr>
<tr>
<td>(2.6)</td>
<td></td>
<td>(2.6)</td>
<td>(1.6)</td>
</tr>
<tr>
<td>II-I</td>
<td>-</td>
<td>8.3</td>
<td>-</td>
</tr>
<tr>
<td>(3.5)</td>
<td></td>
<td>(2.4)</td>
<td></td>
</tr>
<tr>
<td>Treated × earnings in first quartile in pay unit</td>
<td>-</td>
<td>-</td>
<td>-15.0</td>
</tr>
<tr>
<td>(4.0)</td>
<td></td>
<td></td>
<td>(4.0)</td>
</tr>
<tr>
<td>Treated × earnings in second quartile in pay unit</td>
<td>-</td>
<td>-</td>
<td>1.9</td>
</tr>
<tr>
<td>(3.9)</td>
<td></td>
<td></td>
<td>(3.9)</td>
</tr>
<tr>
<td>P-value for exclusion of treatment effects</td>
<td>0.36</td>
<td>0.05</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Mean of the dependent variable in the control group [standard deviation]: 274.2 [66.1], 21.9 [41.4], 12.9 [33.5]

---

Notes: All models are estimated by OLS. All coefficients and means are multiplied by one hundred. Standard errors, clustered by campus/department, are in parentheses (818 clusters for all models). "Earnings" refers to total UC payments in 2007. Pay unit refers to the respondent's department or administrative unit. Median pay is computed separately for faculty and staff. The satisfaction index is the average of responses for the questions: "How satisfied are you with your wage/salary on this job?", "How satisfied are you with your job?", and "Do you agree or disagree that your wage is set fairly in relation to others in your department/unit?". Responses to each of these questions are on a 1-4 scale and are ordered so that higher values indicate greater satisfaction. The variable "Dissatisfied and Likely Looking for a New Job" is 1 if the respondent is below the median value of the satisfaction index and reports being "very likely" to make an effort to find a new job. See text and Appendix Table A3 for further details on the construction of the dependent variables. In addition to the explanatory variables presented in the table, all models include controls for campus × (staff/faculty), a cubic in earnings, and main effects. The sample size is 6,411.
4 Social Preferences: Charitable Giving

- Andreoni (2004). Excellent survey of the theory and evidence

- Stylized facts:
  - US Giving very large: 1.5 to 2.1 percent GDP!
  - Most giving by individuals (Table 1)

<table>
<thead>
<tr>
<th>Source of gifts</th>
<th>Billions of dollars</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals</td>
<td>183.7</td>
<td>76.3</td>
</tr>
<tr>
<td>Foundations</td>
<td>26.9</td>
<td>11.2</td>
</tr>
<tr>
<td>Bequests</td>
<td>18.1</td>
<td>7.5</td>
</tr>
<tr>
<td>Corporations</td>
<td>12.2</td>
<td>5.1</td>
</tr>
<tr>
<td>Total for all Sources</td>
<td>240.9</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Giving USA, 2003
- Giving fairly constant over time (Figure 1)

Figure 1: Trends in Individual Giving.
Source: Giving USA 2003.
• Giving by income, age, and education (Table 2 – no controls)
  – Giving as percent of income fairly stable
  – Increase for very rich (tax incentives matter here)

<table>
<thead>
<tr>
<th>Household Income</th>
<th>Percent of households who give</th>
<th>Average amount given by those who give</th>
<th>Percent of household income</th>
</tr>
</thead>
<tbody>
<tr>
<td>under $10,000</td>
<td>47.3</td>
<td>324</td>
<td>4.8</td>
</tr>
<tr>
<td>10,000–19,000</td>
<td>51.1</td>
<td>439</td>
<td>2.9</td>
</tr>
<tr>
<td>20,000–29,999</td>
<td>64.9</td>
<td>594</td>
<td>2.3</td>
</tr>
<tr>
<td>30,000–39,999</td>
<td>71.8</td>
<td>755</td>
<td>2.2</td>
</tr>
<tr>
<td>40,000–49,999</td>
<td>75.3</td>
<td>573</td>
<td>1.3</td>
</tr>
<tr>
<td>50,000–59,999</td>
<td>85.5</td>
<td>1,040</td>
<td>1.9</td>
</tr>
<tr>
<td>60,000–74,999</td>
<td>78.5</td>
<td>1,360</td>
<td>2.0</td>
</tr>
<tr>
<td>75,000–99,999</td>
<td>79.7</td>
<td>1,688</td>
<td>2.0</td>
</tr>
<tr>
<td>100,000 or above</td>
<td>88.6</td>
<td>3,558</td>
<td>3.0</td>
</tr>
</tbody>
</table>
- Giving to whom? (Table 3)
  - Mostly for religion
  - Also: human services, education, health
  - Very little international donations

<table>
<thead>
<tr>
<th>Type of Charity</th>
<th>Percent of Households who give</th>
<th>Average amount given by those who give</th>
<th>Percent of total household contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts, culture and humanities</td>
<td>9.4</td>
<td>221</td>
<td>2.6</td>
</tr>
<tr>
<td>Education</td>
<td>20.3</td>
<td>335</td>
<td>9.0</td>
</tr>
<tr>
<td>Environment</td>
<td>11.5</td>
<td>110</td>
<td>1.6</td>
</tr>
<tr>
<td>Health</td>
<td>27.3</td>
<td>218</td>
<td>8.1</td>
</tr>
<tr>
<td>Human Services</td>
<td>25.1</td>
<td>285</td>
<td>9.5</td>
</tr>
<tr>
<td>International</td>
<td>3.1</td>
<td>293</td>
<td>1.1</td>
</tr>
<tr>
<td>Private and community foundations</td>
<td>6.1</td>
<td>196</td>
<td>1.4</td>
</tr>
<tr>
<td>Public or Societal benefit</td>
<td>10.3</td>
<td>127</td>
<td>1.7</td>
</tr>
<tr>
<td>Recreation</td>
<td>7.0</td>
<td>161</td>
<td>1.4</td>
</tr>
<tr>
<td>Religious</td>
<td>48.0</td>
<td>946</td>
<td>59.4</td>
</tr>
<tr>
<td>Youth Development</td>
<td>20.9</td>
<td>140</td>
<td>3.8</td>
</tr>
<tr>
<td>Other</td>
<td>2.1</td>
<td>160</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Source: Author’s calculations, data from Independent Sector, Giving and Volunteering, 1995.
• Compare to giving in other countries (Figure 2)
  – In US non-profits depend more on Charitable contributions
• What else do we know?

• Until 1990s, very limited research on charitable giving

• Then:

  1. Evidence by Jim Andreoni and others on fund-raising, and especially on crowding out prediction (see below)

  2. Field experiments by John List and others
• Focus on Field Experiments. First paper: **List and Lucking-Reiley (2002)** focuses on seed money

  – Capital campaign to raise money for computer center at Univ. Central Florida

  – 3,000 letters assign to 6 treatments

  – Randomization of seed money, i.e., how much money was already raised

  – Randomization of whether refund promised if threshold not matched
• Huge effect of the seed money, less so of refund

• Interpretation: Presumably signalling of quality
• More recent work: Landry et al. (QJE, 2006)
  – Door-to-door fund-raising as opposed to mailer
  – Test different form of solicitation
    * Seed Money or not
    * Lottery or not
  – Examines also features of solicitor

• Main finding: Female attractiveness matters, male attractiveness does not
What does this teach us about charitable giving in general? That more affects giving than just pure altruism.
• Charitable giving important phenomenon – How do we understand it?

• **Model 1.** Social preferences: Giving because caring for welfare of others

• Problem (i): Amounts given off relative to lab experiments

• Problem (ii): Model predicts crowding out of giving:
  – If government spends on income of needy group, corresponding one-on-one decrease in giving
  – Evidence of crowding out: Limited crowd-out

• Problem (iii): Model predicts giving to one highest-value charity—Instead we observe dispersion across charities

• Problem (iv): In-person or phone requests for giving raise much more than impersonal requests (mail)
• **Model 2.** Andreoni (1994): Warm-Glow or Impure altruism.
  – Agent gets utility $v(g)$ directly from giving
  – Utility $v(g)$ sharply concave

• Can explain (i), (ii), and (iii) – See Problem Set 3

• Does not directly explain (iv) – Can assume though that warm-glow is triggered more by in-person giving
• **Model 3.** Giving is due to social pressure
  – Pay a disutility cost $S$ if do not give when asked
  – No disutility cost if can avoid to meet the solicitor

• Can explain (i), (ii), and (iii): Give small amounts to charities, mostly because asked

• Can also explain (iv): Give more in higher social pressure environments

• Key prediction differentiating Models 2 and 3:
  – Model 2: Agent seeks giving occasions to get warm glow
  – Model 3: Agents avoids giving occasions to avoid social pressure

• **DellaVigna, List, and Malmendier (2009):** Next time

• **[Teach Andreoni on crow-out]**
5 Methodology: Field Experiments

- Field Experiments combine advantages of field studies and natural experiments:
  - Field setting (External Validity)
  - Randomization (Internal Validity)

- Common in Development, Public, Psychology and Economics, (Labor)

- Uncommon in IO (except for Demand estimation), Corporate Finance, Asset Pricing, Macro

- Difficulties: large sample (costly) and getting approval for implementation
• Definition 1. Card, DellaVigna, and Malmendier (JEP 2011) Randomized allocation to treatment and control groups for study purposes in a field setting

  – Excludes studies with no randomization (Bandiera et al., 2005 and on)

  – Includes social experiments run by the government

  – Includes experiments run by firms (Ausubel, 1999)

  – Excludes incidental randomization (i.e., lottery winnings, or Vietnam draft number)
• Definition 2. Harrison and List (JEL 2004): Broader definition, does not emphasize randomized allocation

- But then how to separate from natural experiments?

- Emphasis on laboratory versus field: 4 groups

  1. *(Conventional) Laboratory Experiment*

  2. *Artefactual Laboratory Experiment*. This is laboratory experiment in the field (i.e., on non-students)

  3. *Framed Field Experiment*. Experiment in the field with natural setting, but people aware of experimental treatments

  4. *Natural Field Experiment*. Experiment in the field, subjects unaware of manipulations
• What to do if planning a field experiment?

• Advice 1. Read how-to manuals and previous field experiments: **Duflo-Glennerster-Kremer (NBER, 2006)**
  
  – * Great discussion of practical issues: Compliance, Sample Size,...
  
  * Discussion of statistical issue, such as power tests
  
  * Targeted toward development
• **Advice 2.** Choose what type of Experiment

  – *Large-Scale Experiment*. Example: Bandiera et al. (2005)
    * More common in Development
    * Convince company or organization (World Bank, Government)
    * Need substantial funding

  * Example among students:
    · Damon Jones: field experiment on tax preparers
    · However (also Damon): H&R Block experiment fell through after 1-year plans
    · Safeway (research center at Stanford, Kristin Kiesel in charge)
- Small-Scale Experiment. Example: Falk (2008)
  * More common in Psychology and Economics
  * Need to convince non-profit or small company
  * Limited funds needed – often company will pay
  * Example among students:
    · Dan Acland: projection bias and gym attendance
    · Vinci Chow: commitment devices for on-line computer game play
    · Pete Fishman: small video store randomized advertising
- **Advice 3.** Need two components:

  1. Interesting economic setting:

     - Charity, Gym, Village in Kenya
     
     - Does Video Games matter? Yes, increasingly so

  2. Economic model to test

     - Examples: Self-control, reciprocity, incentives
     
     - Avoid pure data-finding experiments
     
     - Insurance. If you can, pick a case where ‘either’ result is interesting
     
     - Best scenario: Do a field experiment tied to a model to infer parameters
• **Advice 4.** Two key issues: Power calculations and Pilots

  - *Power calculations.* Will your sample size be enough?
    * Crucial to do ex ante to avoid wasting time and money
    * Simple case:
      * Assume outcome binary variable, dep.variable is share $p$ doing 1 (Ex: giving to charity, taking up comm. device)
      * Standard error will be $\sqrt{p(1-p)/n}$
      * Example: $p = .5$, s.e. is .05 with $n = 100$, .025 with $n = 400$

  - *Pilots.* So many things can go wrong – try to do small pilot
    * Use to spot problems in implementation
    * Do not use pilot as data analysis (sample too small)
• **Advice 5.** Other practical issues:
  
  – Mostly refer to *Duflo-Glennerster-Kremer (NBER, 2006)*
  
  – Approval from Humans Subjects!
    * At Berkeley, takes about 2 months
    * More about this later
  
  – Keep in mind implementation of randomization
    * Example: Cross Designs hard to implement correctly
    * Example: *Green-Gerber (APSR, 2001)* on voter turnout:
      · cross-randomize phone calls, mailings, in-person visits
      · Hard to implement $\rightarrow$ Lead to loss of randomization
* OK to do if requires just computerized implementation (ex: loan offers)

  – Monitor what happens in the field *continuously*

  – Build in data redundancy to catch measurement error or implementation problems

* Example: ‘Did you see a flyer on the door?’ in DellaVigna-List-Malmendier (2009)
• Advice 6. Start looking soon for funding
  
  – Funding harder to obtain for graduate students
  
  – Good options:
    * IBER: $1,000 administered quickly (one week or so)
    * Russel Sage Small Grant Program: $5,000 ($2,500 for paying subjects) (two to three months)
    * NSF dissertation improvement grant website (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13453)
    * Look at CVs of assistant professors in your field or job market students (Jonas’ advice)
    * Ask your advisor — May know of some funding sources