Social Preferences I

ADEC781001: Empirical Behavioral Economics

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People care about other people

- Standard model assumes agent only cares about self and has no interest in:
  - altruism
  - reciprocity
  - equality
  - etc.
- Obviously that is not true
  - social movements
  - volunteering
  - switching jobs because co-workers are paid more
  - large-scale cooperation in society
  - much more

Social Preferences I

- "social preferences" is broad
  - refers to any preferences that are not consistent with standard model
  - acknowledges that good actions are not always driven by good intentions (e.g. "impure altruism")
- Today: focus on social preferences in simple dyadic games
  - Ultimatum game, Dictator game
  - Inequality aversion
- Introduce "crowding out"
  - Social preferences are context dependent
  - They can be "turned off" (crowded-out) by incentives

Dyadic games

Ultimatum Game

Theory

- Sequential game with two players
  - Player 1 is endowed with e (e.g. one dollar) and proposes a share $x \in [0, e]$ to Player 2
  - Player 2 either accepts or rejects
    - Accepts: the split is realized
    - Rejects: neither player gets anything
  - One shot game: Nash equilibrium is $x > 0$
  - Repeated game: Subgame Perfect Equilibrium (SPE) is any $x > 0$
    - Both cases: Player 2 better off from any positive amount (e.g. \$0.01 > \$0.00)
- Prediction?
  - Let ϵ be a tiny number
  - Player 1 will offer $e - \epsilon$

Ultimatum Game

What actually happens? Larrick and Blount (1997)

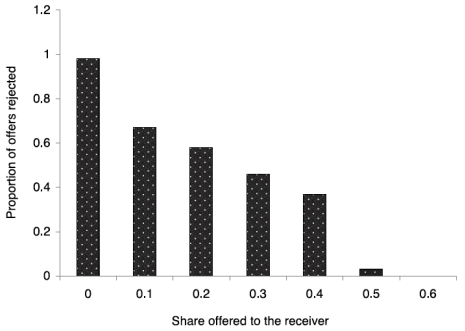


Figure 7.4 The proportion of offers rejected in an ultimatum game. Offers of a 0.5 share or better are rarely rejected, but offers of a less than 0.5 share are often rejected.

Source: Larrick and Blount (1997).

Ultimatum Game

Robustness Check: Henrich et al. (2004)

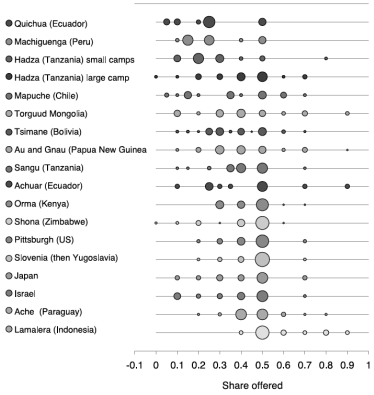


Figure 8.2 Ultimatum game offers across different cultures.

Source: Henrich et al. (2004), Roth et al. (1991).

- Lamalera (Indonesia): whale hunting society (whale hunting requires cooperation with fairly large groups)
- Machiguenga (Peruvian Amazon): live and share/cooperate only within families
- Au and Gnau (Papua New Guinea): gift-giving culture (gifts are expected to be reciprocated, so often wise to reject gifts)

Ultimatum Game

Property rights: Cherry et al. (2000)

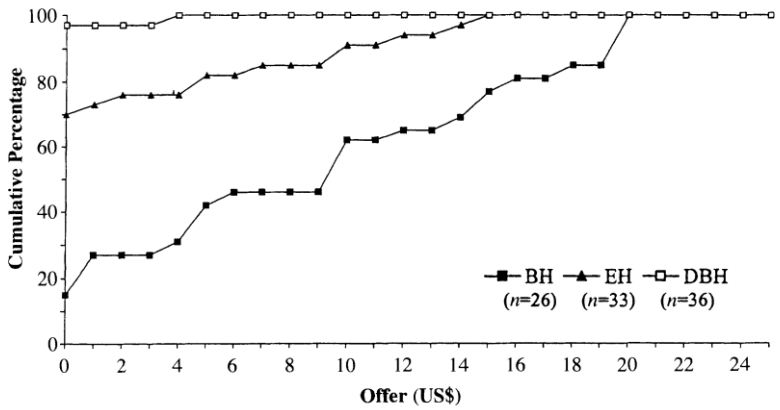


FIGURE 2. CUMULATIVE DISTRIBUTIONS OF OFFERS IN THE \$40 DICTATOR GAMES

Ultimatum Game

Property rights: Oxoby and Spraggon (2008)

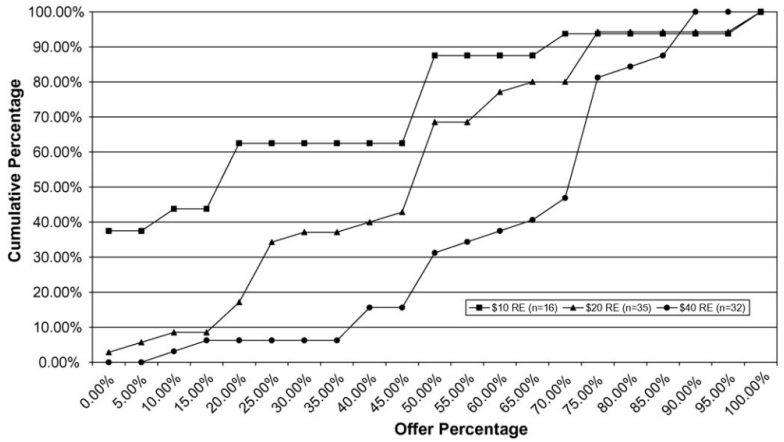


Fig. 4. Cumulative distributions of offers in the receiver earnings treatments.

Ultimatum Game

Competition: Roth et al. (1991) and Grosskopf (2003)

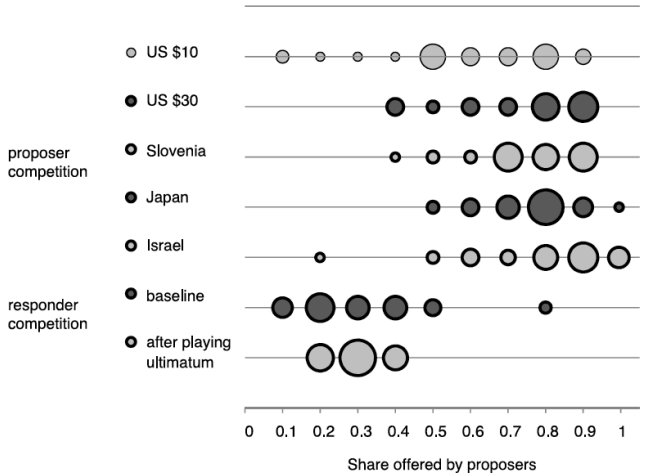


Figure 7.10 The share proposers offer in ultimatum games with competition. Roth et al. find the effects of proposer competition is the same across four countries and Grosskopf finds that responder competition lowers offers even if subjects had played the standard ultimatum game beforehand.

Ultimatum Game

Stakes: Andersen et al. (2011)

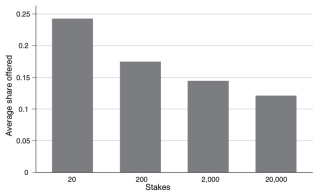


Figure 1. Offer Proportion across Stakes

Notes: Figure shows average proportion of the stakes offered to the responder. Stakes represents our four stakes treatments of 20, 200, 2,000, and 20,000 rupees to be shared in the ultimatum game.

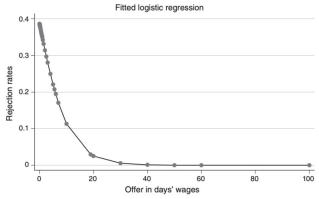


Figure 3. Predicted Rejection Rates (*fitted logistic regression*)

Notes: Figure represents the predicted rejection probabilities, obtained from a logistic regression of rejections on offered money in terms of days' wages forgone. Dots represent the observed offered money by senders in the ultimatum game from which the predictions are made.

Social preferences?

- Is $x > 0$ because proposers (Player 1) are kind?
- Or because proposers are afraid Player 2 reject (and leave them both with nothing)?
- Ultimatum Game tells us a lot about Player 2
  - Player 2 cares about not getting screwed over
- But Ultimatum Game cannot tell us if Player 1 offers $x > 0$ out of kindness or selfishness
- Solution: remove action of Player 2
  - Now Player 1 imposes (rather than proposes) x
  - Player 2 can do nothing about it
  - This is the Dictator Game

Dictator Game

Evidence from market and non-market cultures

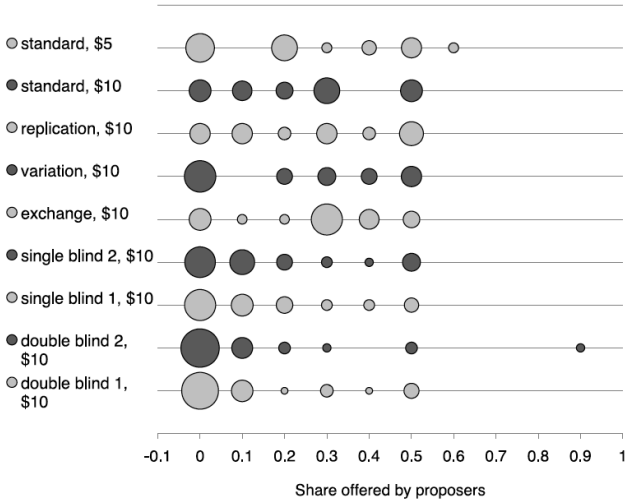


Figure 7.1 The amount that proposers gave in dictator experiments. The size of the bubble indicates the proportion of subjects offering each share. Many do give zero, but the majority give more than zero.

Fairness vs Inequality Aversion

Fairness vs Inequality Aversion

- Ultimatum Game and Dictator Game results are smoking guns
  - People are clearly not driven *only* by self-regarding preferences
- But these games don't tell explain where these preferences come from
  - Many possible sources
  - Focus on two: fairness vs inequality aversion
  - People don't like inequality
    - Don't like having more than others
    - But also don't like having less than others

Inequality aversion

Fehr and Schmidt (1999)

- Two players
- Consider Player 1
- Utility depends on their own payoff as well as Player 2's payoff

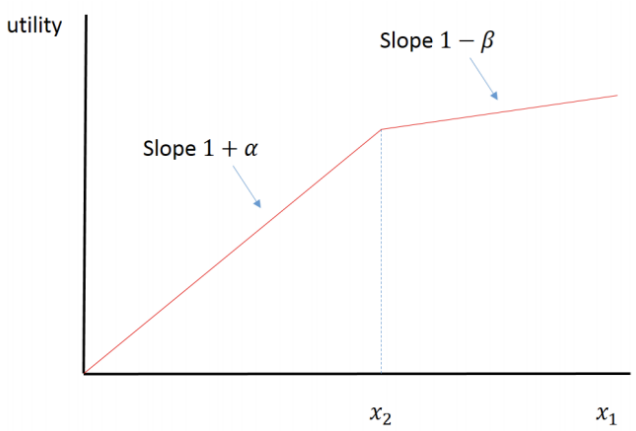
$$u_1(x_1, x_2) = x_1 - \alpha \max\{x_2 - x_1, 0\} - \beta \max\{x_1 - x_2, 0\}$$

- x_1: Player 1's payoff
- $\max\{x_2 - x_1, 0\} = 0$ if Player 1 earns more (α captures disutility of earning less than others)
- $\max\{x_1 - x_2, 0\} = 0$ if Player 2 earns more (β captures disutility of earning less than others)
- Assume $\beta \leq 1 \leq \alpha$

Inequality aversion

Fehr and Schmidt (1999)

- When $x_2 > x_1$: $u' = 1 + \alpha$
- When $x_1 > x_2$: $u' = 1 - \beta$



Inequality aversion

Player 2

- Suppose Player 1 has \$10 to split
- $u_2 = x_1 - \alpha \max\{x_1 - x_2, 0\} - \beta \max\{x_2 - x_1, 0\}$
  - Reject offer $10 - x$: $x_2 = x_1 = 0$
  - Accept offer $10 - x$: $x_2 = 10 - x, x_1 = x$
- Reject or accept depends on $x \lessgtr 5$ (50-50 split)
  - if $x < 5$ then Player 2 earns more and will accept
    - $u_2 = (10 - x) - \beta((10 - x) - x) = (1 - \beta)(10 - x) + \beta x > 0$

Inequality aversion

Player 2: $x > 5$

- Now Player 2 is getting less than Player 1
  - $u_2 = (10 - x) - \alpha(x - (10 - x)) = (1 + \alpha)(10 - x) - \alpha x$
- When does Player 2 reject?
  - $x > 10\frac{\alpha+1}{2\alpha+1}$
    - $x = 10$ when $\alpha = 0$
    - $x \to 5$ as $\alpha \to \infty$

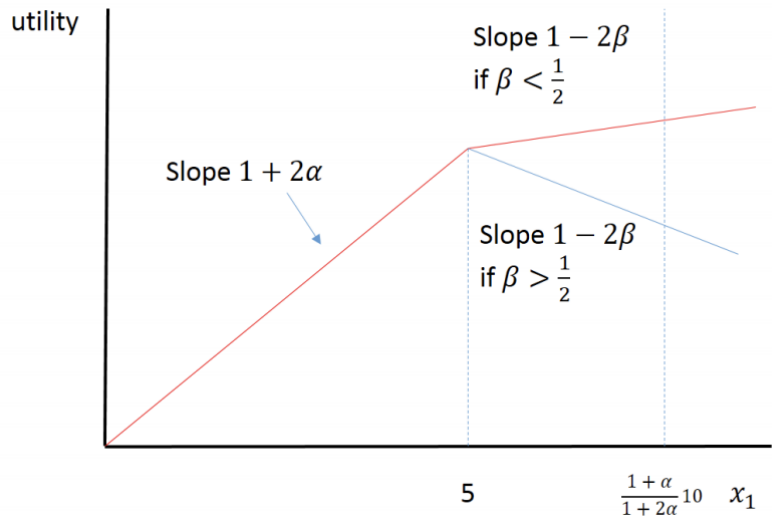
Inequality aversion

Player 1

- Player 1 is guaranteed $x = 5$ if they offer 5 (Player 2 always accepts)
- So they offer between $5 < x < 10\frac{\alpha+1}{2\alpha+1}$
- Exactly what depends on utility function
  - $u_1 = x - \beta(x - (10 - x)) = x - \beta(2x - 10)$
  - $u' = 1 - 2\beta$
    - $\beta < \frac{1}{2}$: utility increasing in x, so offer smallest amount possible: $10\frac{\alpha+1}{2\alpha+1}$
    - $\beta > \frac{1}{2}$: utility decreasing in x, so offer 5

Inequality aversion

Player 1: illustrated



Inequality aversion: evidence

Fehr and Schmidt (2010)

Table 1—Subject Pool Effects: Economists versus Noneconomists

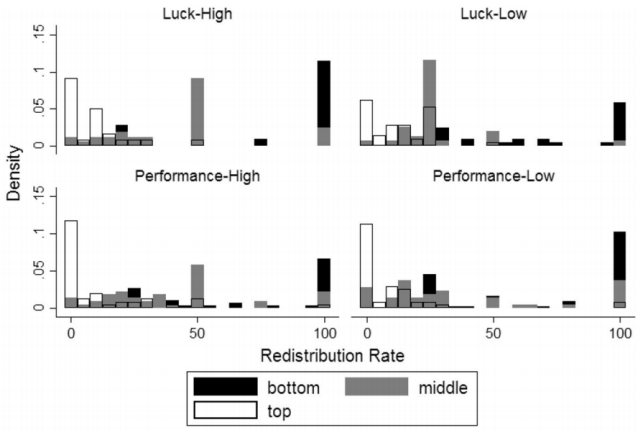
	Treatment Ey			Treatment P		
Allocation	A	B	C	A	B	C
Person 1 payoff	**21**	**17**	**13**	**14**	**11**	**8**
Person 2 payoff	**9**	**9**	**9**	**4**	**4**	**4**
Person 3 payoff	**3**	**4**	**5**	**5**	**6**	**7**
Total payoff	33	30	27	23	21	19
Average payoff of 1 and 3	12	10.5	9	9.5	8.5	7.5
Efficiency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

- Important point from FS model: heterogeneity matters
  - the tail can wag the dog (a minority of inequality-averse agents can have an outsized influence on outcomes)

Inequality aversion: evidence

Gee et al. (2017)

- Low or High inequality
- Incomes earned (Performance) or randomly assigned (Luck)
- Subjects vote how much income to redistribute

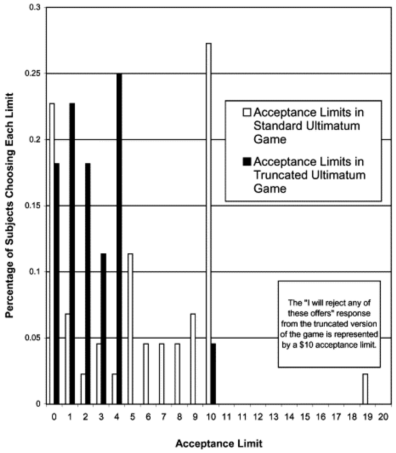


Fairness

- FS says social preferences come from inequality aversion
- But the model only cares about outcomes
- What if Player 1 is contrained somehow and can only offer 2 out of the 10?
  - If they offer you 2 they are very generous
  - But in the unconstrained case they would be selfish
  - Do intentions matter?
  - This is Rabin (1993)
    - Long model
    - Long story short: Yes
    - Player 2 less likely to offer x if they know Player 1 was allowed only offer some of endowment

Fairness

Evidence: Nelson (2002)



Application: Labor market

Bandiera, Barankay and Rasul (2005): Model

- Pay workers piecerate (β for every unit produced) or relative incentives ($\frac{\alpha}{\hat{e}}$ for every unit produced)
  - $\hat{e}$ is average worker output
  - Relative incentives reduces risk to worker if they have a bad day
  - Increasing e_i increases your pay
  - But increasing e_i also imposes negative externality by reducing payment to everybody else (no externalities in piecerate)
  - Implication: workers who care about co-workers' payoffs will *internalize the externality* by working less under relative incentives

Application: Labor market

Bandiera, Barankay and Rasul (2005): Experiment

- Fruit farm in England
- Workers mostly Eastern Europe on farm-specific visas
- First half of the season paid relative incentives
- Second half of the season paid piecerate

Application: Labor market

Bandiera, Barankay and Rasul (2005): Results

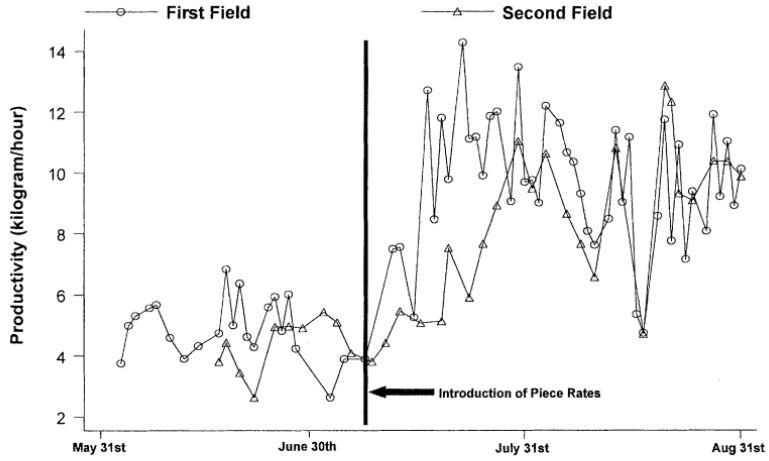


FIGURE I
Productivity (kilogram/hour) over the Season

Application: Labor market

Bandiera, Barankay and Rasul (2005): Results

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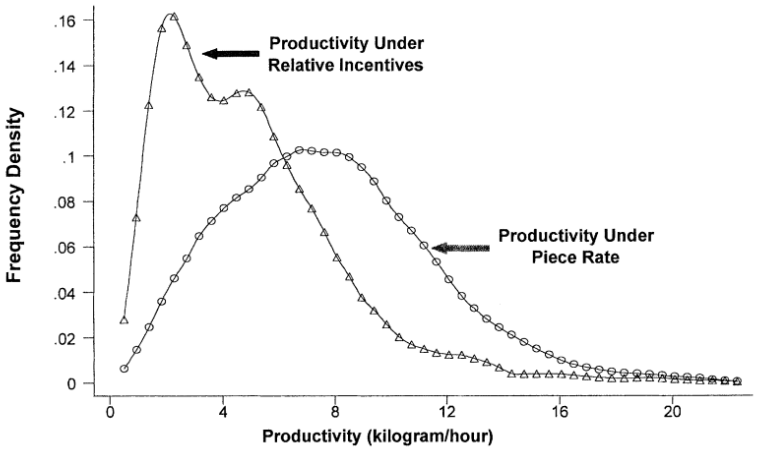
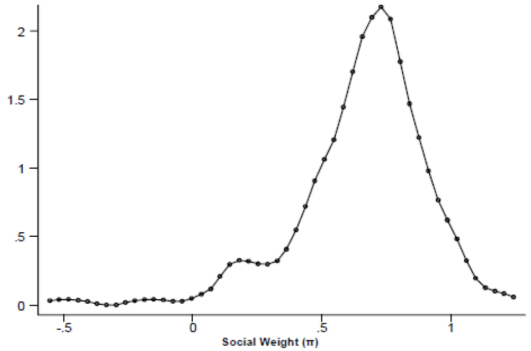


FIGURE II
Distribution of Productivity (kg/hr) by Incentive Scheme

Application: Labor market

Bandiera, Barankay and Rasul (2005): Social preferences?



- But!
  - Workers internalize only when they can monitor each other
  - Workers internalize *more* when co-workers are friends

Crowding out

Social preferences are delicate

- People clearly have social preferences
  - In particular people care about equality
- But we also see that social preferences are context dependent
- And they can be "switched off" by incentives
- Focus on crowding out in principle-agent (PA) problems
  - **principal**: person who applies incentive
  - **agent**: person who responds to incentive
  - Example: manager offers wage to employee in return for effort
  - Example: government offers to pay people for blood donations
  - Key ideas:
    - agents have extrinsic and intrinsic motivations (e.g. do well at job to get money but also pride or social capital)
    - incentives are information (e.g. learn about what the principal thinks of you or the task)

Theory of crowding out
Benabou and Tirole (2006)

- Utility from doing an activity depends on:
  - extrinsinc incentives (e.g. money)
  - personal satisfaction
  - image (how they are viewed by others)
    - depends on reputation and how public is their images
- Key ideas: everything can be a signal and incentives can signal "bad news"
  - incentives are information (e.g. learn about what the principal thinks of you or the task)
    - e.g. paying students for grades might signal that the topic is worth only the principal's price
    - and/or signals principal does not trust agent's intrinsic motivation
  - "virtue signalling": agent might do task to signal to others their intrinsic motivations
    - incentives crowd-out if the price effect is smaller than the image effect

Images motivations

- Titmuss (1970): paying donors can a) crowd-out donations from altruistic donors and b) reduce quality of donations
  - incentives crowd-out if donors give blood at least partly because they want to signal prosocial motivations
- Costa-Font et al. (2013): blood donations
  - 1997: WHO recommends all donations come from unpaid volunteers
  - 2006: only 49/124 countries established this standard
  - Data: Survey individuals from 15 European countries
    - Observe: a) whether individual donated blood and b) preference for monetary or non-monetary rewards
  - Findings: preference for monetary rewards $\rightarrow$ lower probability of being a donor
- Mellstrom and Johannesson (2008): field experiment with monetary ($7 paid to you) and non-monetary rewards ($7 donated to charity)
  - Crowding out in both men and women donors (but only significant effect among women)

Crowding out in short versus long run

- Frey and Oberholzer-Gee (1997)
  - offer community large monetary compensation for a nuclear waste facility
  - the offer signals that principal thinks risks are high
  - community rejects
- Gneezy and Rustichini (2000): "Pay enough - or don't pay at all"
  - Experiment: high school students collecting charity door-to-door
  - students collect fewer donations with low compensation than no compesation
  - donations increased only with high compensation
- Long versus short run
  - high compesantion can work in short run
  - but if incentives signal "bad news" then crowding-out can still occur over long run when people update beliefs (about task, about principal, about their own type)
  - Meier (2007)
    - matching incentive (25 or 50 percent) increases short run donations
    - but long run donations fall below pre-incentive period
  - Gneezy and Rustichini (2000): Haifa daycare ("A fine is a price")
    - Parents pay fee if late picking up their kids
    - Results: more parents show up late (would rather pay fee than rearrange schedule)
    - After fine removed, parents still late

Incentives as frames

> Depending on their nature, incentives can shift a situation from a social to a monetary frame. Consider a thought experiment: You meet an attractive person, and in due time you tell that person, "I like you very much and would like to have sex with you." Alternatively, consider the same situation, but now you say, "I like you very much and would like to have sex with you, *and*, to sweeten the deal, I'm also willing to pay you $20!" Only a certain kind of economist would expect your partner to be happier in the second scenario. However, offering $20 worth of (unconditional) flowers might indeed make the desired partner happier.

Gneezy et al. (2004): "When and why incentives (don't) work to modify behavior"

Incentives as frames

Fehr and List (2004)

- Trust Game
  - Principle with endowment e offers agent $x \in [0, e]$
  - experimenter increases x by $\alpha > 1$ and agent can return to principal $y = [0, \alpha x]$
  - Treatment: principal could choose to signal that low offers ()$y < \hat{y}$, the principal's desired return) will be fined
  - **Result**: speak softly but carry a big stick
    - having the option of a fine increases returns
    - but only if the principal doesn't use it (signaling trust in agent)

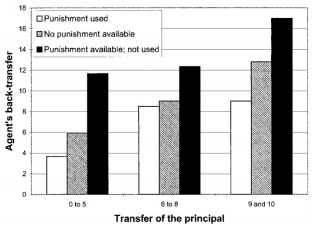


FIGURE 3. The impact of the punishment threat on CEOs' back-transfers.

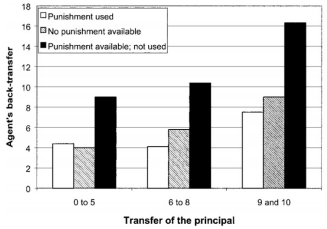


FIGURE 4. The impact of the punishment threat on students' back-transfers.

Incentives as frames

Bohnet et al. (2001)

- Is agent more likely to breach a contract if principal can monitor?
  - Monitoring probability: low (0.1), medium (0.5), high (0.9)
  - High monitoring good in short run
  - But Low monitoring better in long run