Social Preferences II

ADEC781001: Empirical Behavioral Economics

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Recap

- Last week we talked about social preferences in simple dyadic games
  - e.g. Ultimatum Game, Dictator Game
  - focus on fairness vs inequality aversion
- This week: *n*-person games
  - focus on public goods game
  - social preferences: reciprocity, conditional cooperation
- Where do we see this?
  - hunter-gatherer societies
  - charitable giving
  - team production
  - public good provision
  - much more

Public goods game

- Workhorse of experimental/behavioral economics
- Basic premise
  - Group of n people
  - Everybody has an endowment to contribute to public good
  - n-person prisoner's dilemma

Public goods game
Theory

- $\pi_i = (e_i - x_i) + \alpha \sum_{j=1}^{n} x_j$
  - e_i: endowment
  - x_i: contribution to public good
  - $\sum_{j=1}^{n} x_j$: group contribution to public good
  - α: marginal per capita return (MPCR)
    - returns from contributing to public good
- assume $\frac{1}{n} < \alpha < 1$
  - social optimum: $x_i = e_i$ (full public good provision)
  - Nash Equilibrium: $x_i = 0$

Public goods game: evidence

Fehr and Gachter: Design

- Group size: $n = 4$
- Partners treatment: same groups each period
  - reputation effects
- Strangers treatment: reshuffle groups each period
  - no reputation effects
- Punishment
  - i pays c to reduce payoffs of j by βc, $\beta > 1$
- Predictions:
  - subgame perfect equilibrium: zero punishment, zero contributions

Public goods game: evidence

Fehr and Gachter (2000): No Punishment

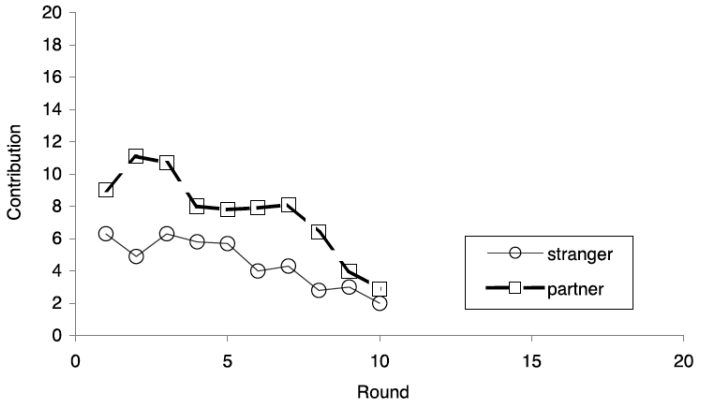
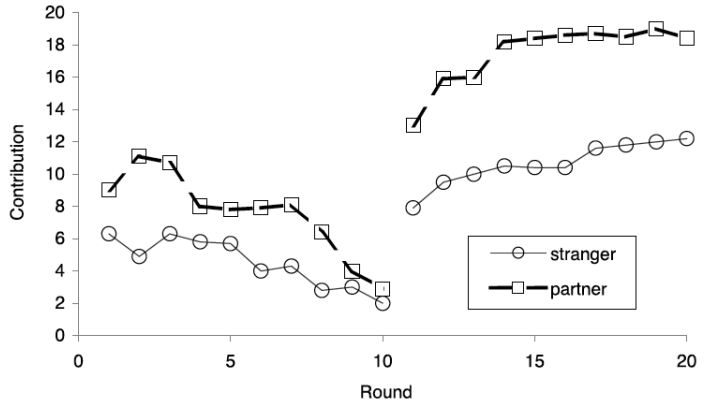


Figure 7.7 Contributions in linear public good games with and without punishment and with stranger and partner matching. Contributions fall over time without punishment and rise with punishment.

Source: Fehr and Gächter (2000a).

Public goods game: evidence

Fehr and Gachter (2000): Punishment



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Source: Fehr and Gächter (2000a).

Cooperation and punishment

- Huge experimental literature (see Chaudhuri (2011) for a review)
  - FG (2000): 4000+ citations
- Punishment effective when:
  - cost of being punished is greater then the cost of imposing punishment (Sefton et al., 2007; Egas and Riedl, 2008; Nikiforakis, 2008)
  - predominately targeted towards non-cooperators and there is limited retaliatory or anti-social punishment (Bochet et al., 2006; Cinyabugama et al., 2006; Ertan et al., 2009)
  - time frame is long enough so the benefits of induced cooperation outweigh the initial costs of punishment (Gächter et al. 2008)
  - Non-monetary punishment (e.g. ostracism) also works (cite)
  - Subjects have complete information (De Geest & Kinglsey 2019)
- Big takeaway: conditional cooperation
  - People cooperate conditional on others cooperating (expect others to reciprocate)

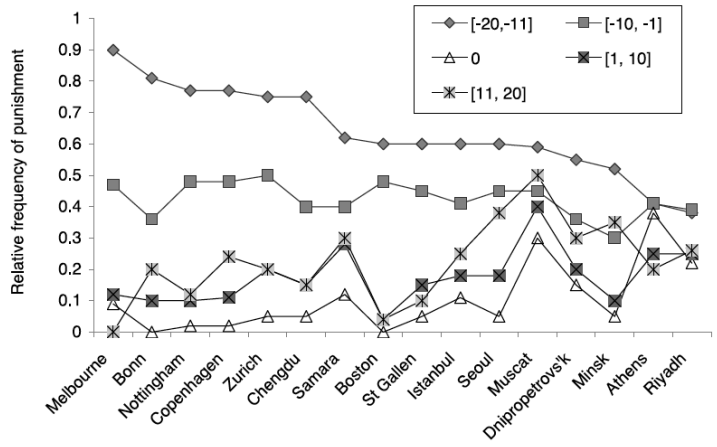

Figure 8.3 Punishment in a public good game in different locations. The proportion of times people were punished depended on whether they contributed a lot less [−20,−11], less [−10,−1], the same [0], more [1,10] or a lot more [11,20] than the person punishing.

Source: Herrmann et al. (2008).

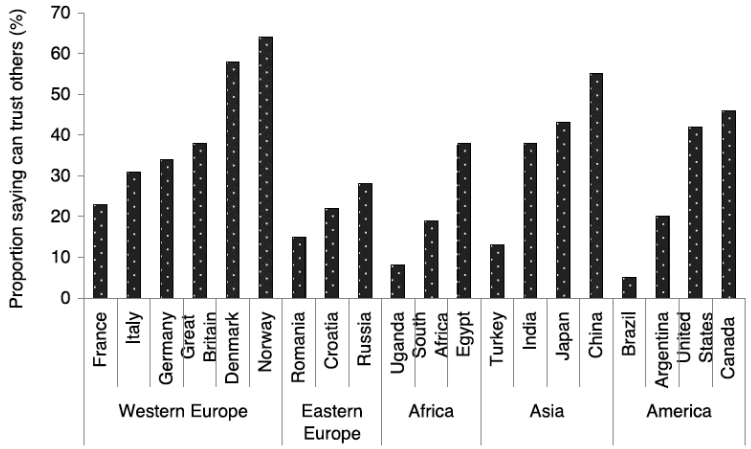

Figure 8.4 The proportion of respondents who said 'most people can be trusted'.

Source: World Value Survey.

- Key insight from punishment literature is that agents impose negative incentives (i.e. penalities) on each other to cooperate
- These incentives seem to "crowd-in" behavior
  - People cooperate more
  - But then again, people are afraid of getting punished
  - So not really crowding in (similar to Ultimatum game findings: Player 1 not really altruistic for offering fair split)
- Can also crowd-out
  - Retaliatory feuds (Nikiforakis 2008)
  - De Geest et. al (2017): CPR game with poaching
    - CPR (common-pool resource): opposite of public good (Nash: take as much from resource as possible)
    - poachers poach less when they can't be punished than when they can be punished
    - explanation: poachers are outsiders who might have some social preferences (or environmental preferences, i.e. understand not to destroy resource) but do not have say in what norms insiders enforce

- What if principals apply positive incentives (i.e. rewards) to boost public good provision?
  - often see crowding out
  - charitable giving: Meier (2007)
    - matching incentive (25 or 50 percent) increases short run donations
    - but long run donations fall below pre-incentive period
  - blood donations: 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)

Incomplete contracts: can you crowd in?

- Many exchanges are incomplete contracts
  - cannot contract (e.g. literally specify in writing) quality of good, quality of labor, etc.
  - why? difficult to verify quality in advance of exchange
- Incomplete contracts are "completed" through trust and social preferences
  - e.g. you pay a reputational cost for reneging on a promise
  - people learn to abide by and develop prosocial preferences (or "moral sentiments")
  - incentives can turn these off (crowding out)
    - incentives frame actions
    - message: your action is only compensated by money (and not other social rewards)
  - or can incentives amplify them (crowding in)?
- Incentives and moral sentiments are not additively separable
  - Crowding out: incentives and moral sentiments are substitutes
  - Crowding in: incentives and moral sentiments are substitutes

Examples of crowding in

- Remember from last time: incentives are messages
- To make them compliment moral sentiments, you have to frame them just so
- Example: Irish plastic bag tax[1]
  - tax slightly raises cost of action to be deterred
  - if tax were simply imposed out of nowhere, what is message?
    - "Pollute as much as you want, just pay for it"
    - Like Haifa day care: "Come as late as you want, just pay for it"
  - instead tax was rolled out with a moral message following public deliberation and publicity
    - message became: "Don't pollute our beautiful home!"
  - plastic bag use dropped 94%
    - carrying a plastic bag was like wearing a fur coat
- Example: Bogota 1995-1997, 2001-2003
  - epidimeic of reckless driving, many deaths
  - mayor Antanas Mockus introduces fines (incentives)
  - also employs mimes in clown face to shame drivers and jaywalkers (moral sentiments)
  - second term: give drivers thumbs-down cards to signal other drivers (moral sentiments)

[1] Rosenthal, E. (2008), "Motivated by a Tax, Irish Spurn Plastic Bags," New York Times, 2 February.