

Charity collector: 'I want you to give me a pound, and then I go away and give it to the orphans.'

Merchant banker: 'Yes.'

Charity collector: 'Well, that's it.'

Merchant banker: 'No, no, no! I don't follow this at all. I mean, I don't want to seem stupid, but it looks to me as though I'm a pound down on the whole deal.'

Monty Python's merchant banker sketch

Social Preferences

PSYC370: The Psychology of Cooperation

Mark Hurlstone, Lancaster University

Week 18

Outline

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- Standard economic model and the self-interest axiom
- Are people selfish or do they exhibit social preferences?
- Review key evidence obtained for social preferences in the experimental laboratory
- Implications for the standard economic model

Standard Economic Model

Standard Economic Model

- Normative theory that specifies how individuals ought to behave
- People approximated by a **Homo economicus** who is *rational* and *selfish*
- Rationality means individuals consistently behave in ways that maximise their own self-interest (**self-interest axiom**)
- Decision-makers have strong computational abilities, allowing them to analyse accurately the costs and benefits of a decision that benefits them the most
- This analysis is based on the individuals own preferences (**self-regarding preferences**) and excludes the preferences of others (**other-regarding preferences**)

Are People Driven By Pure Self-Interest?

- The facts of real life seem at odds with the standard economic model:
 - At the societal level, our societies have achieved a degree of cooperation that is unprecedented in the animal kingdom
 - At a lower level, people even in anonymous situations vote, take part in collective actions, often manage not to overuse common resources, care for the environment, mostly do not evade taxes, donate to charities etc.
- Suggests individuals are not always driven by self-regarding preferences, but they exhibit other-regarding preferences

Today: Focus on Social Preferences

- We ask, to what extent do people exhibit **social preferences**?
- Social preferences are a concern, positive or negative, for the well-being of others, and a desire to uphold ethical norms
- Social preferences include:
 - Altruism
 - Fairness
 - Justice
- To the extent that humans exhibit social preferences, this challenges the self-interest axiom of the standard economic model

Economic Experiments

- Laboratory experiments are probably the best tool for studying social preferences
- The laboratory allows for a degree of control not feasible in the field
- Participants receive monetary incentives that are linked with their decisions
(incentive compatibility)
 - Ensures they take the task seriously
 - Reveals their true preferences
- Thus, the laboratory allows observing real economic behaviour under controlled circumstances

Economic Experiments



Key Findings on Social Preferences

Key Findings on Social Preferences

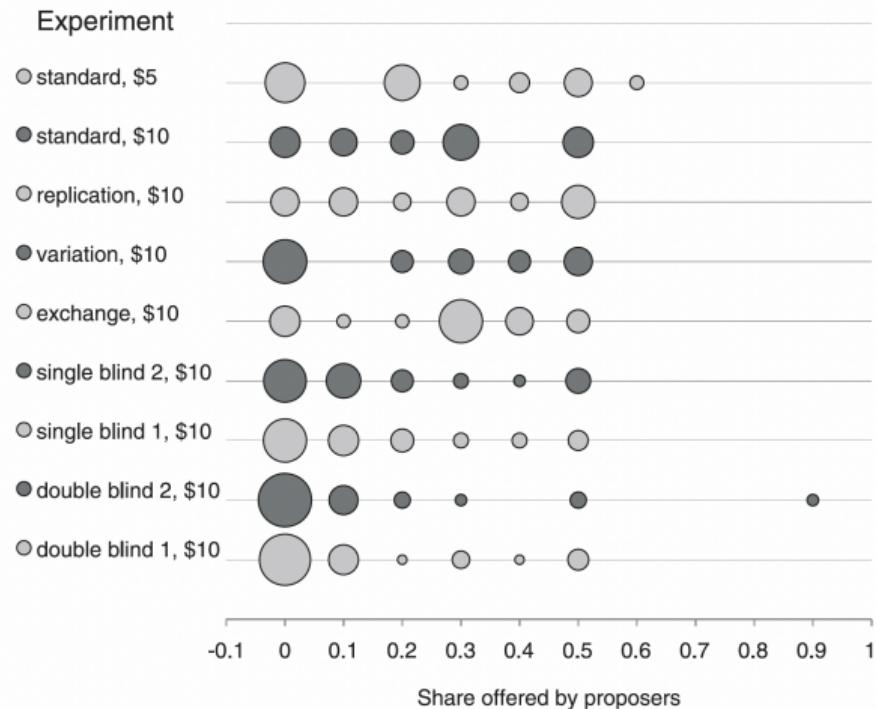
- We review several key findings from the experimental laboratory
- The vehicles for these discoveries are an assortment of economic games, including:
 - Dictator game
 - Ultimatum game
 - Prisoners' dilemma
 - Public goods game
 - Public goods with punishment game
 - Dictator game with third-party punishment
 - Prisoners' dilemma with third-party punishment

1. Altruistic Giving is Common

1. Altruistic Giving Is Common

- People often give to others at a cost to themselves; this is observed in the **dictator game**
- There are two players: a proposer and receiver
- The **proposer** is given a sum of money, say £10, and asked how much of that £10 they would like to give to the **receiver**
- The receiver gets what she is given and the proposer keeps the rest
- The self-interest axiom predicts that proposers should keep the money and give nothing to the receiver, but what proposers actually do is quite different

Dictator Game (Forsythe et al., 1994; Hoffman et al., 1994, 1996; Camerer, 2003)



Altruistic Giving Is Influenced By The Characteristics of The Receiver (Eckel & Grossman, 1996)

- Dictator game with two treatments:
 - Receiver is an anonymous experimental participant
 - Receiver is an established charity—the American Red Cross
- Donations are **three times higher** to the charity
- Suggests altruism is a motivating factor in dictator game giving:
 - Giving is affected by the perceived “need” of the receiver

2. Strong Reciprocity is Common

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- A **strong reciprocator** is an individual who is willing to:
"Sacrifice resources for rewarding fair and punishing unfair behavior even if this is costly and provides neither present nor future material rewards for the reciprocator"
- Thus, strong reciprocators reciprocate both **positively** (respond to kindness with kindness) and **negatively** (meet hostility with hostility)
 - Positive reciprocity promotes cooperation
 - Negative reciprocity stabilises cooperation
- In laboratory experiments, strong reciprocity is common

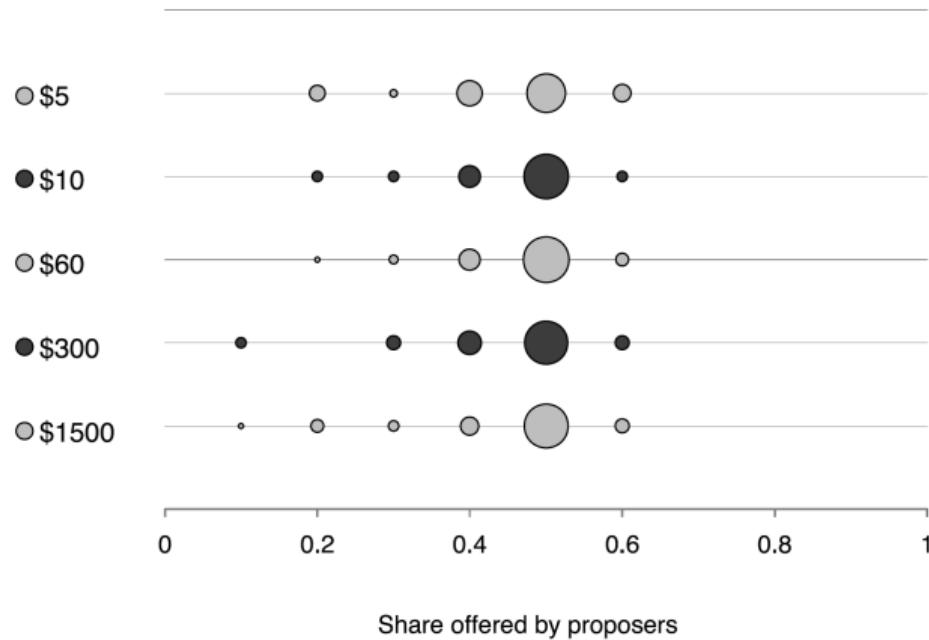
Ultimatum Game

- In the **ultimatum game** there are two players: proposer and receiver
- A proposer is given a sum of money, say £10
- She must decide how much of that money to give to the receiver
- The receiver—who knows how much the proposer was given—must decide to accept or reject the offer
 - If he accepts, the receiver gets what he is given and the proposer keeps the rest
 - If he rejects, both get zero

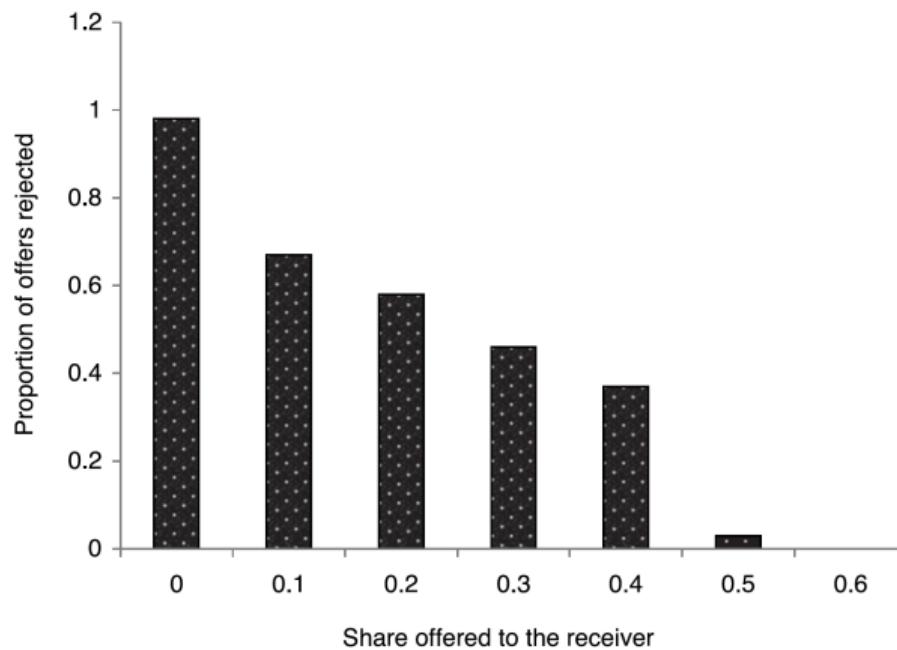
Ultimatum Game

- The self-interest axiom provides a clear prediction of how the game will be played
- Because the game is one-shot and anonymous, the responder will accept any positive amount of money
- Knowing this, a self-regarding proposer will offer £1, and this will be accepted
- This is not typically what happens though

Proposers Have Social Preferences (Forsythe et al., 1994; Slonim & Roth, 1998)



Receivers Have Social Preferences Too (Larrick & Blount, 1997)



Ultimatum Game

- Why do acceptors reject positive offers?
 - They are motivated by a desire to punish the proposer for being unfair, even though it means giving up money to do so
 - In post-game de-briefings, responders who have rejected low offers often express anger at the proposer's greed and a desire to punish unfair behaviour
 - A social preference for fair outcomes is known as **inequality aversion** (Fehr & Schmidt, 1999)
- Rejection of unfair offers in the ultimaum game is evidence for negative reciprocity

Prisoners' Dilemma Game

- The **prisoners' dilemma game** is perhaps the most famous of all experimental games
- There are two players, call them Alice and Bob
- They interact only once and cannot make any binding agreements
- Each player can choose one of two strategies, without knowing the strategy chosen by the other:
 1. Cooperate (C) or
 2. Defect (D)

Prisoners' Dilemma Game: Payoff Matrix

		Bob	
		C	D
Alice	C	10,10	0,15
	D	15,0	5,5

Prisoners' Dilemma Game

- Despite the strong temptation to defect, many experiments have found a considerable fraction of participants (30%-40%) prefer to cooperate (Sally, 1995)
- This is at odds with the strong prediction under the self-interest axiom of complete defection
- The fraction of cooperators increases if Alice (Bob) can be given assurances that Bob (Alice) will cooperate (Kiyonari et al., 2000):
 - Standard simultaneous prisoners' dilemma (38%)
 - Sequential “second player” prisoners' dilemma (62%)
 - Sequential “first player” prisoners' dilemma (59%)
- This is evidence for positive reciprocity

3. Free-Riders Undermine Cooperation

3. Free-Riders Undermine Cooperation

- A **free-rider** is someone who benefits from the contributions of other group members, while themselves contributing less or nothing at all
- In a social dilemma that is repeated for several rounds, subjects tend to start with a positive and significant level of cooperation
- However, unless there are very few free-riders in the group, cooperation subsequently decays to a very low level
- This decay of cooperation is observed in the experimental **public goods game**

Public Goods Game

- A group of players (usually four) are each given a sum of money (e.g., £10) for participating in each of several rounds (e.g., 20) of the game
- On each round, the players must decide simultaneously and independently how much of this money to contribute to a “public pool”
- At the end of each round, the contents of the pool is doubled and then divided equally among the players, irrespective of their contribution
- The *social dilemma* lies in the conflict between the group and the individual’s interest

Public Goods Game: Example

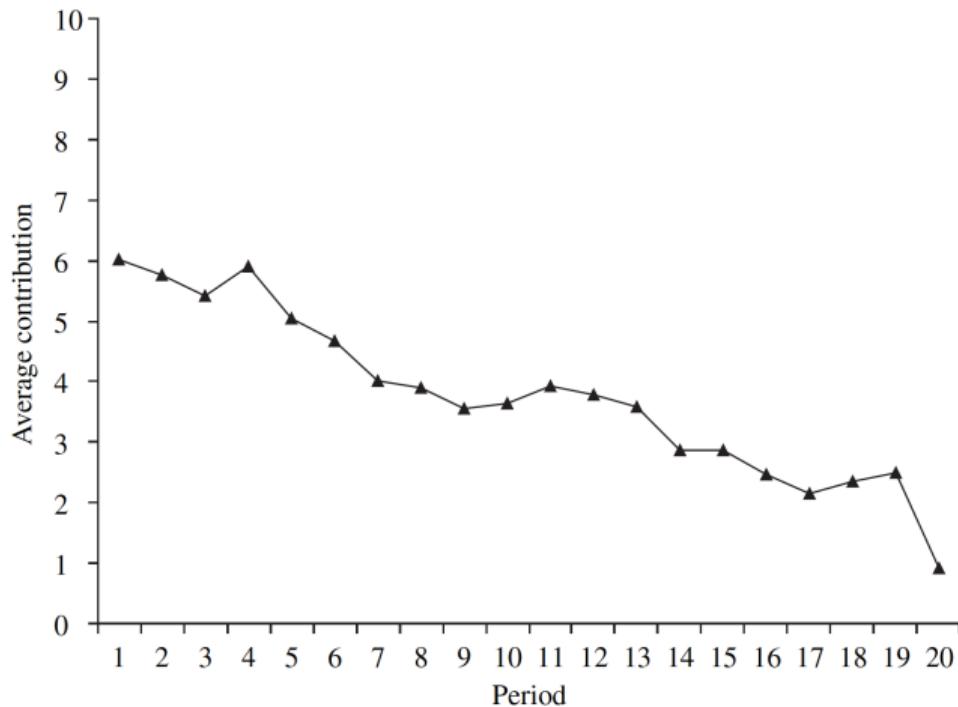
	Player 1	Player 2	Player 3	Player 4
Contribution	£5	£5	£0	£5
Payoff	£7.50	£7.50	£7.50	£7.50
Net Profit	£2.50	£2.50	£7.50	£2.50

Public Goods Game: Example

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- The **collective-best outcome** arises when **all players contribute** to the public good but **free-riding is individually profitable**
- The self-interest axiom predicts that individuals should **never** contribute anything

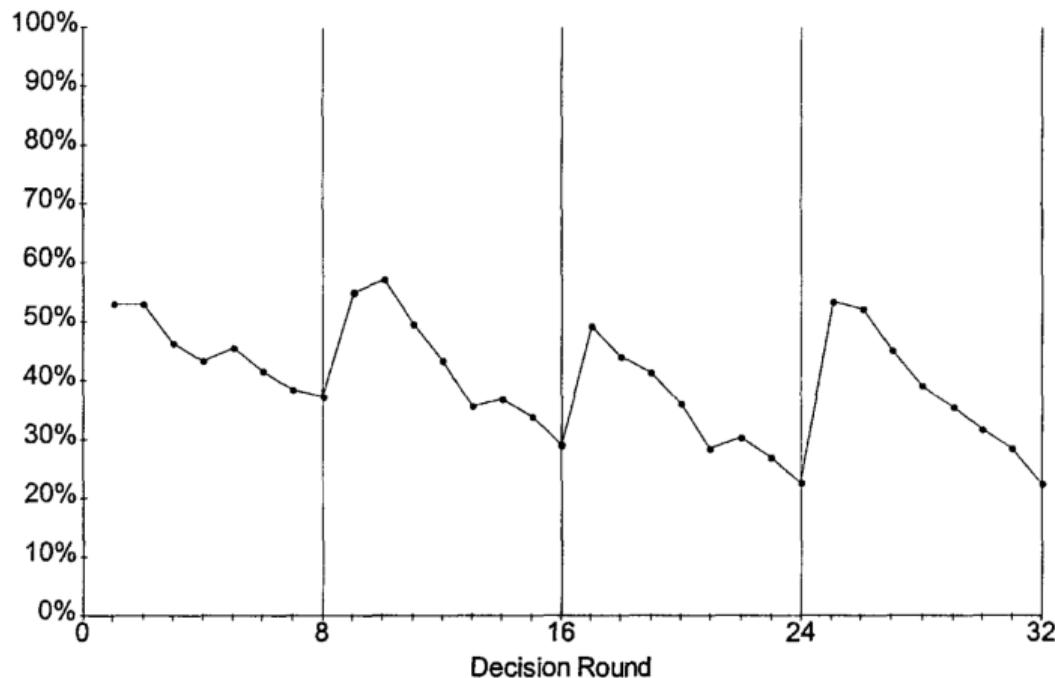
Decay of Cooperation: Page et al. (2005)



Decay of Cooperation: Self-Interest Axiom Account

- Initial high contributions reflect confusion on the part of the participants, who are not accustomed to anonymous interactions
- Decay in contributions is due to participants learning how to maximise their payoffs
- If correct, then if the same participants played a second multi-round public goods game, they should refuse to contribute on the very first round
- Cookson (2000) tested this prediction and found it to be wrong

Cookson (2000)



The public goods game is played with several groups and after every series of rounds group membership is reshuffled and the game is restarted.

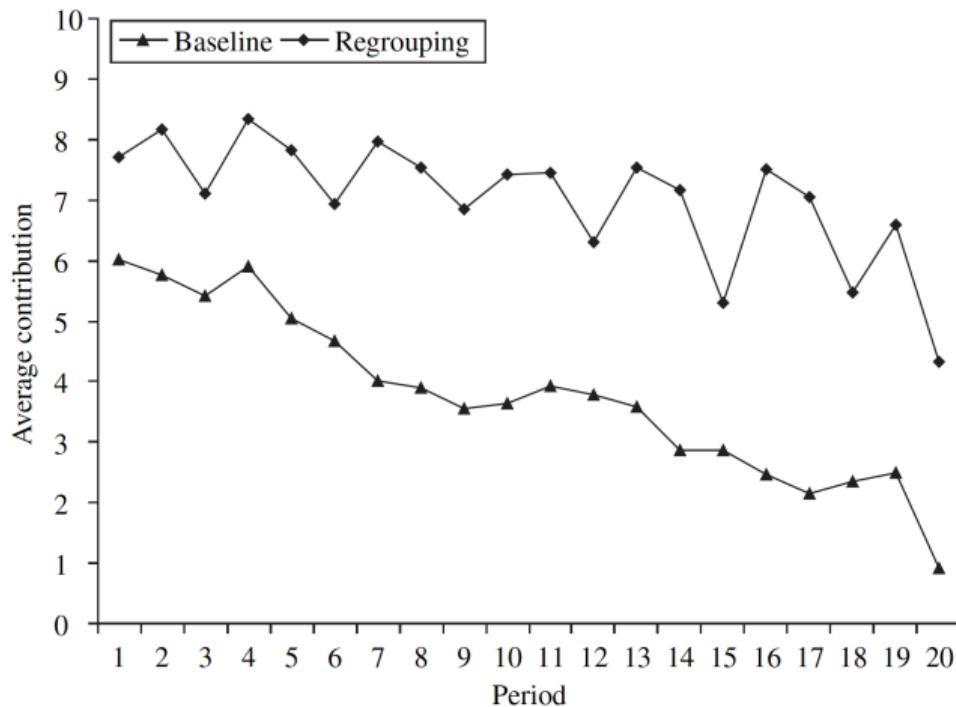
Decay of Cooperation: Free-Rider Account

- Public-spirited contributors want to retaliate against free-riders but the only way available to them in the game is by not contributing themselves
- Subjects often report this reason for the unravelling of cooperation retrospectively
- Further evidence for this view comes from a study by Page et al. (2005)

Page et al. (2005)

- Multiple experimental sessions wherein four 4-person groups played 20 rounds of a public goods game under one of two conditions
- *Baseline condition:*
 - Four-person groups formed randomly in the first round and remained fixed for the 20 rounds of the game
 - Members of one group have no information on the behaviours in other groups
- *Regrouping condition:*
 - As above, except at the end of *each third round* (3, 6, 9, 12, 15, 18) participants were shown a list of the average contributions of players in *all four groups*, and asked to rank their preference for playing with them
 - Participants who ranked each other highly were assigned to the same group; participants who were not ranked highly by others were also assigned to the same group

Page et al. (2005)



Page et al. (2005)

- The decay of cooperation is due to relatively high contributors reacting to low contributors by lowering their own contribution
- When subjects in the same group are relatively uniform in their contributing behaviour, this decay mechanism is attenuated
- These experiments show that when those predisposed to cooperate can associate preferentially with like-minded people, cooperation is not difficult to sustain

4. Altruistic Punishment Sustains Cooperation

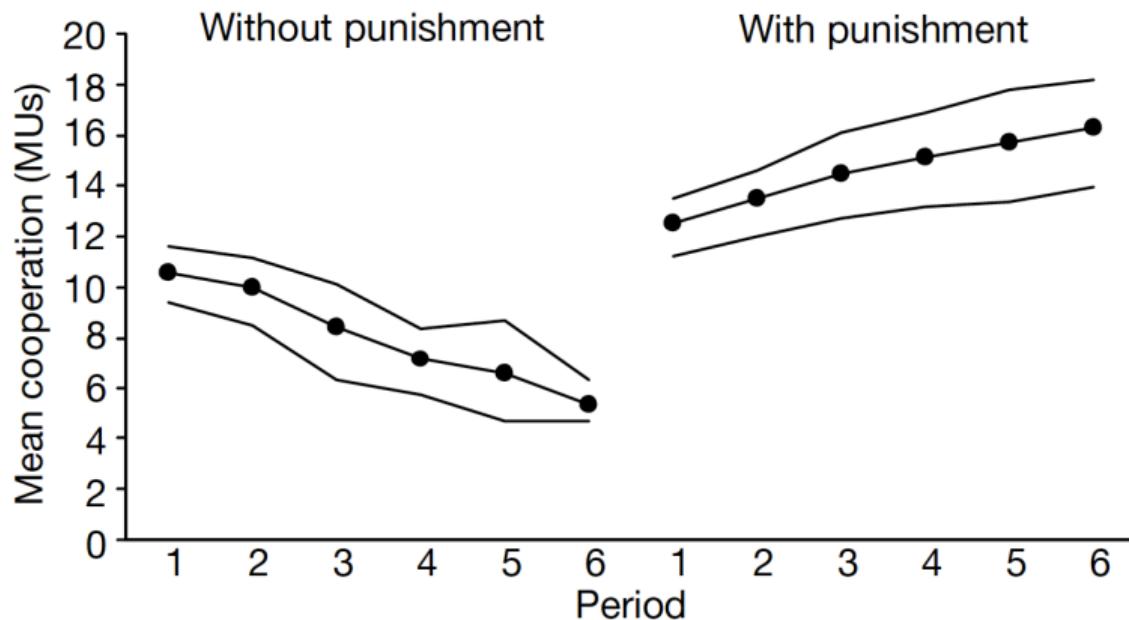
4. Altruistic Punishment Sustains Cooperation

- In the standard public goods game, the only way cooperators can retaliate against free-riders is by withholding their cooperation
- However, in the **public goods with punishment game**, participants are given a direct way of retaliating against free riders
- In this game, strong reciprocators use punishment in a way that helps to sustain cooperation
- Because this punishment is costly to the punisher as well as the target, the punishment is considered “altruistic”

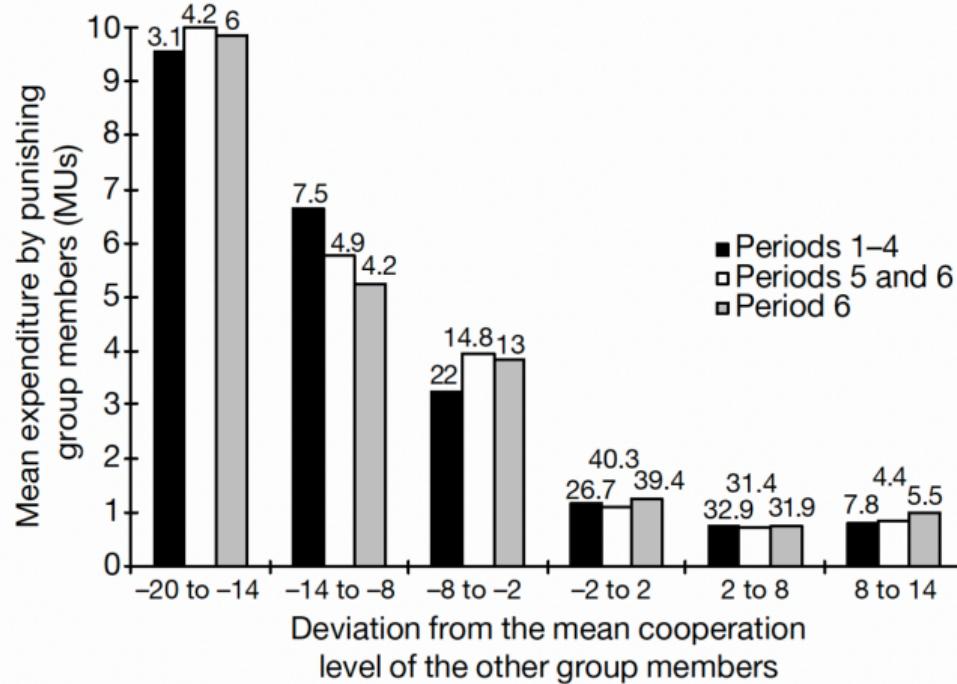
Fehr and Gächter (2002): Public Goods With Punishment Game

- Two conditions:
- *Without punishment*
 - Similar to the public goods game previously described
- *With punishment*
 - Additional phase after contributions where participants see the contributions of other group members
 - Players must decide whether to assign punishment points that reduce other group members' total payoffs
- Since punishment is costly, a self-interested player should refrain from assigning punishment points as their assignment is costly
- In practice, punishment is both common and very effective

Fehr and Gächter (2002): Contributions over Rounds



Fehr and Gächter (2002): Investments in Punishment



Why Do Participants Punish?

- One account is that participants punish free-riders to alter their behaviour or to affect the distribution of payoffs
- Another account is that participants view punishment of free-riders as “retribution”
- Evidence supports the latter account:
 - Participants punish free-riders even in non-repeated interactions (Falk et al., 2005) ...
 - ... and in repeated interactions where punishments are not revealed until the end of the experiment (Fudenberg & Pathak, 2010)
- Thus, participants enjoy punishment, where ‘enjoyment’ includes anger and a desire for retribution

5. Effective Punishment Depends On Legitimacy

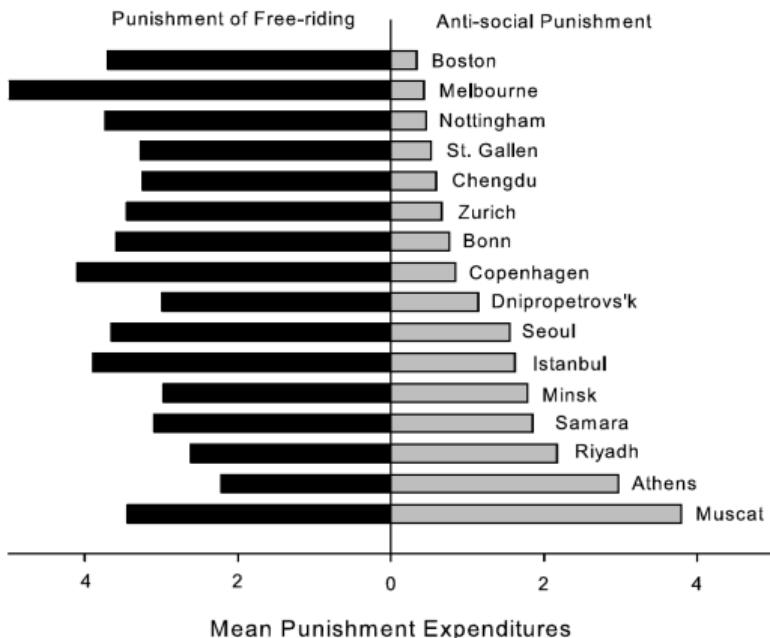
5. Effective Punishment Depends On Legitimacy

- We have seen that altruistic punishment enhances cooperation among members of a group
- But it raises a new question:
 - Do groups that punish free-riders benefit, or do the costs of punishing outweigh the benefits to cooperation that result?

Altruistic And Antisocial Punishment

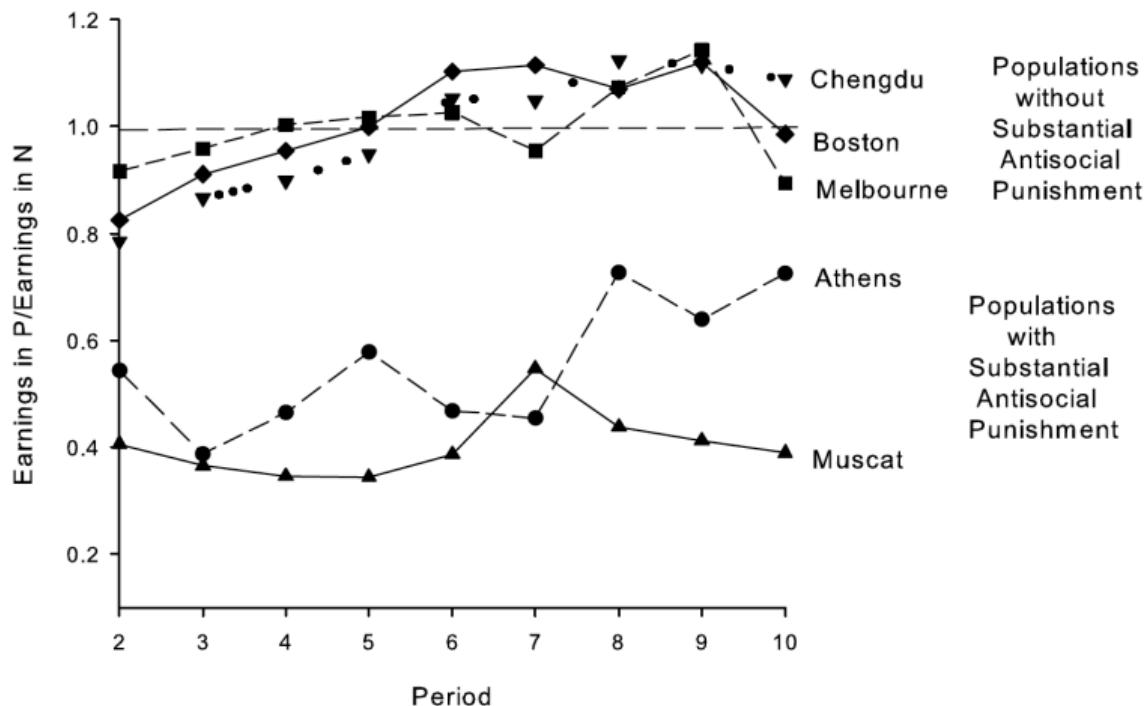
- Herrmann et al. (2008) performed a public goods with punishment game using participant pools from 15 populations (e.g., Boston, Zurich, Riyadh, Muscat, Chengdu)
- As in Fehr and Gächter (2002), when the punishment option was available it was widely used, and as a result, the decay of contributions did not occur
- However, surprisingly, averaging over the 10 periods, most of the participant pools had higher average payoffs when the punishment option was precluded
- Why so?

Herrmann et al. (2008): Free-Riding and Antisocial Punishment Around The World



In many societies, a significant amount of punishment was directed at high contributors (anti-social punishment), possibly as a retaliation against punishment received in earlier rounds by subjects who believed that it was the high contributors who were doing most of the punishment

Herrmann et al. (2008): Antisocial Punishment Lowers Average Payoffs



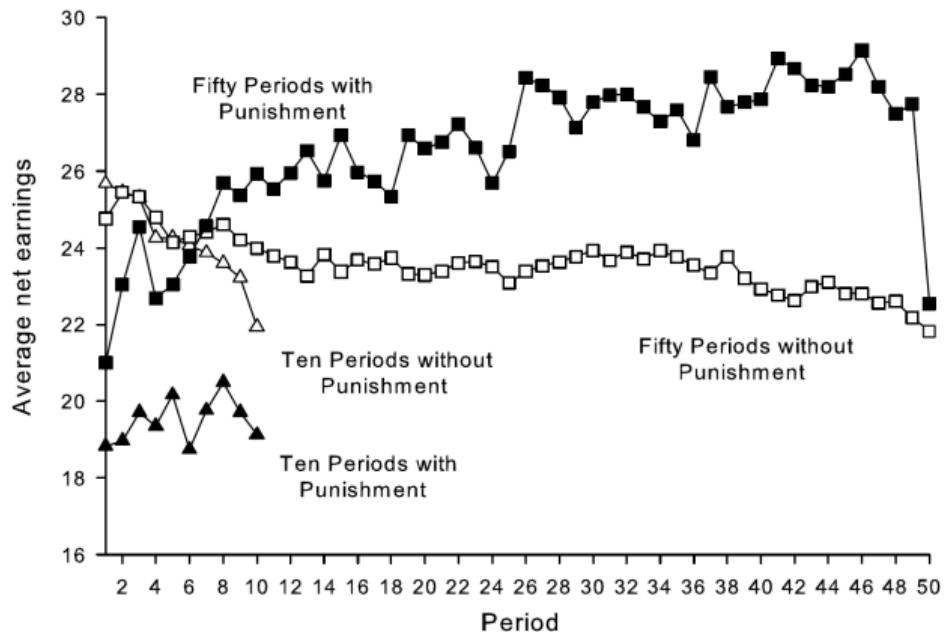
Herrmann et al. (2008): Legitimacy of Punishment is Culturally Determined

- Effective punishment depends on legitimacy
- Punishment of free-riders, was legitimate in Boston, Melbourne, and Chengdu, but it was not in Muscat and Athens
- In the latter countries, punishment is coordinated by ridicule or gossip—it does not inflict material costs—and is rarely carried out by a single individual
- The legitimacy of punishment is therefore to some degree culturally determined

Does Frequency Of Interaction Matter?

- Gächter et al. (2008) tested whether the net returns to having a punishment option are high when the game is repeated a sufficient number of rounds
- They used the same game as Fehr and Gächter (2002), but allowed groups to interact for 50 rounds, rather than just 10
- They found that after the initial rounds, the net benefits to the group with the punishment option significantly exceeded those of the no-punishment group

Gächter et al. (2008): Average Net Earnings Over Rounds



Do Groups Benefit From a Punishment Option?

- Having a punishment option improves group outcomes, provided interactions between group members are frequent
- Once it is established that the punishment option will be used against free-riders, the fear of punishment disciplines future behaviour
- But the punishment mechanism must be legitimate—consistent with widely held social norms—to avoid vendetta like retaliation
- What punishment is legitimate is to some degree culturally determined

6. Purely Symbolic Punishment Is Effective

6. Purely Symbolic Punishment Is Effective

- Punishment is effective even when it takes the form of criticism by peers, rather than a reduction in material payoffs
- Masclet et al. (2003):
 - When participants can assign “disapproval points” to group members, contributions to the public good increase
- Barr (2001):
 - Contributions to the public good increase when participants can publicly shame free riders
- Gächter and Fehr (1999):
 - Making individual contributions publicly observable substantially raises contributions to the public good

6. Purely Symbolic Punishment Is Effective

- These results, and those of Falk et al. (2005) and Fudenberg and Pathak (2010) suggest:
 - punishment is not behaviour modification, but rather retribution
 - the target's positive response to punishment is an attempt to right a wrong in the eyes of fellow group members
- The self-interest axiom cannot explain the frequency nor effectiveness of punishment
- The results of public goods with punishment games provide further evidence for strong reciprocity

7. People Punish Those Who Hurt Others

7. People Punish Those Who Hurt Others

- People don't just punish those that have hurt *them*
- They also punish those who hurt *others*
- This occurs when the action causing the hurt violates a social norm (e.g., a “fairness” or “cooperation” norm)
- Punishment is thus not simply retaliation in response to personal damages—it appears to reflect more general ethical norms

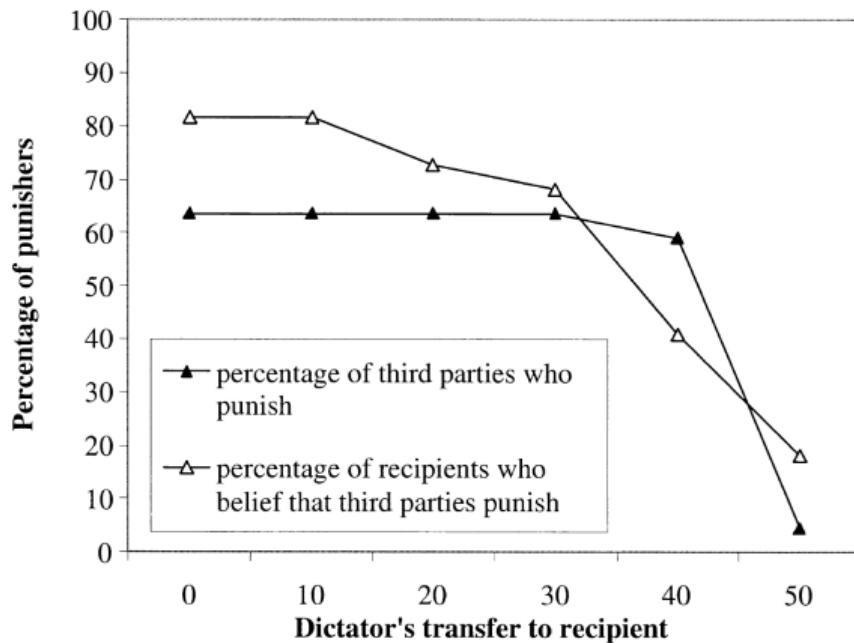
Fehr and Fischbacher (2004): Third Party Punishment and Social Norms

- Dictator game with third-party punishment
- Three players: dictator, receiver, and observer
- The **dictator** has an endowment of £100 and can transfer any amount to the **receiver** (who has no say in the matter)
- The **observer**—the “third party”—has an endowment of £50 and observes the dictator’s transfer
- After this, the observer can assign punishment points to the dictator—1 point cost the observer £1 and cost the dictator £3

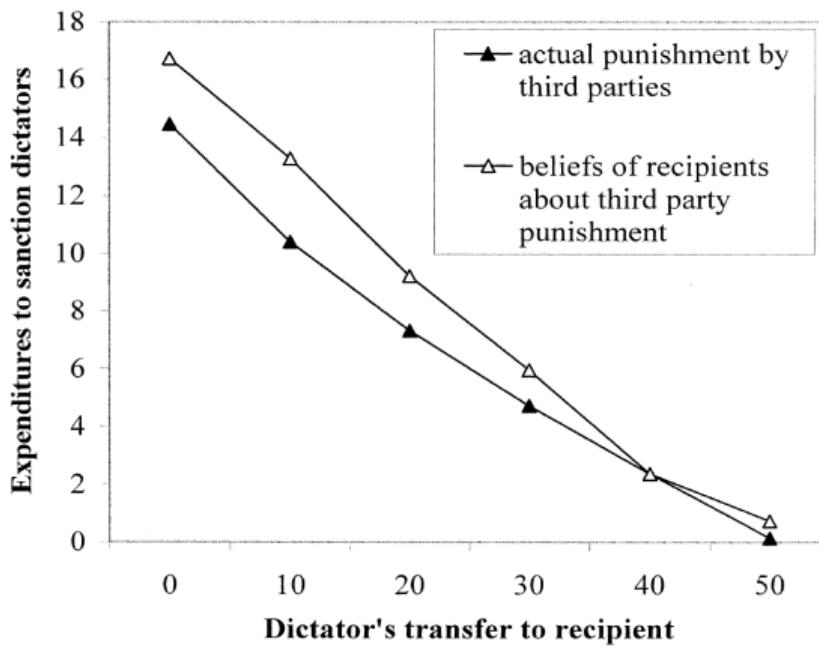
Fehr and Fischbacher (2004): Third Party Punishment and Social Norms

- Since punishment is costly, a self-regarding observer will never punish
- However, if there is a “sharing” or “fairness” norm, an observer may well punish the dictator if they give too little

Fehr and Fischbacher (2004): Third Party Punishment and Social Norms



Fehr and Fischbacher (2004): Third Party Punishment and Social Norms



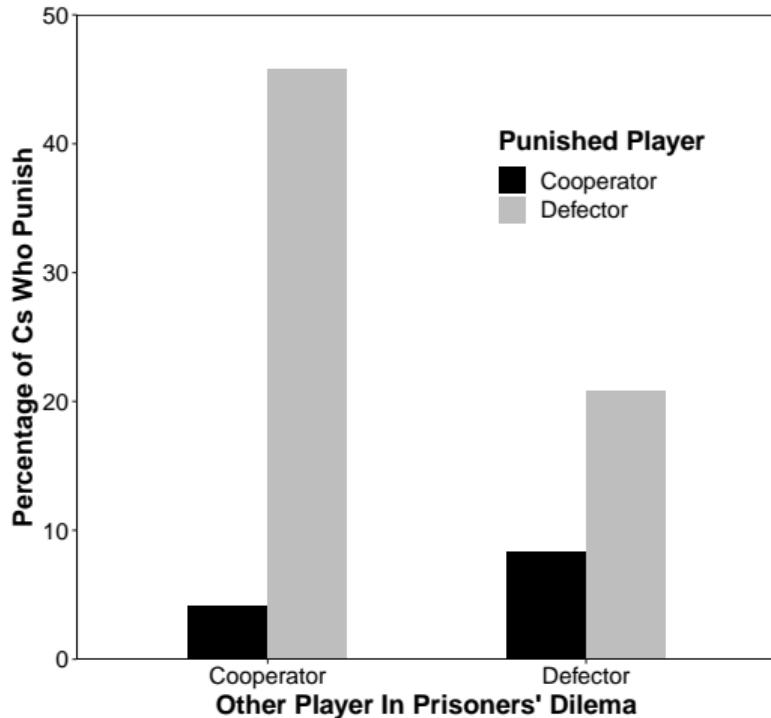
Fehr and Fischbacher (2004): Third Party Punishment and Social Norms

- Prisoners' dilemma game with third-party punishment
- Player A and B each get £10 and interact in a simultaneous prisoners' dilemma
- Each can keep their £10 or transfer it to the other, in which case the experimenter triples the money
- Player C—the “third party”—observes A's and B's actions in Stage 1 and can assign punishment points to A and/or B in Stage 2
- Player C gets £40 and can assign up to 20 punishment points to each of the other two players—1 point cost C £1 and cost the sanctioned player £3

Fehr and Fischbacher (2004): Third Party Punishment and Social Norms

- Since punishment is costly, a self-regarding player C will never punish
- However, if there is a “conditional cooperation” norm, player C may punish player A and/or B for defecting
- Defection would be a more severe norm violation if the partner in the prisoners’ dilemma cooperates than if they, too, defect

Fehr and Fischbacher (2004): Third Party Punishment and Social Norms



Summary and Conclusions

Summary & Conclusions

- Results are largely at odds with the self-interest axiom of the standard economic model:
 - Many people sacrifice their own monetary payoff to increase that of others (*dictator game, ultimatum game, public goods game*)
 - Many people reciprocate the kind action of another with kindness of their own (*prisoners' dilemma*)
 - Many people reciprocate the unkind action of another with punishment (*ultimatum game, public goods game, public goods with punishment game*)
 - Many people reciprocate the kind or unkind action of another to someone other than them (*dictator game with third-party punishment, prisoners' dilemma with third-party punishment*)
- Altruism, justice, and social norms of fairness and conditional cooperation guide behaviour

Summary & Conclusions

- Yet, some results are consistent with the self-interest axiom (e.g., zero offers in the dictator game, high defection rates in the prisoners' dilemma, free-riding in the public goods game)
- Suggests that some people are pursuing their own self-interest
- The evidence is therefore conflicting
- Contemporary economic models resolve the conflict by assuming that in addition to purely self-interested people, there are a *fraction* of people motivated by social preferences, such as fairness
- Fehr and Schmidt (1999) present a model of fairness based on inequity aversion that can explain many of the findings considered here

Thanks For Listening!