

# Altruism and Reciprocity

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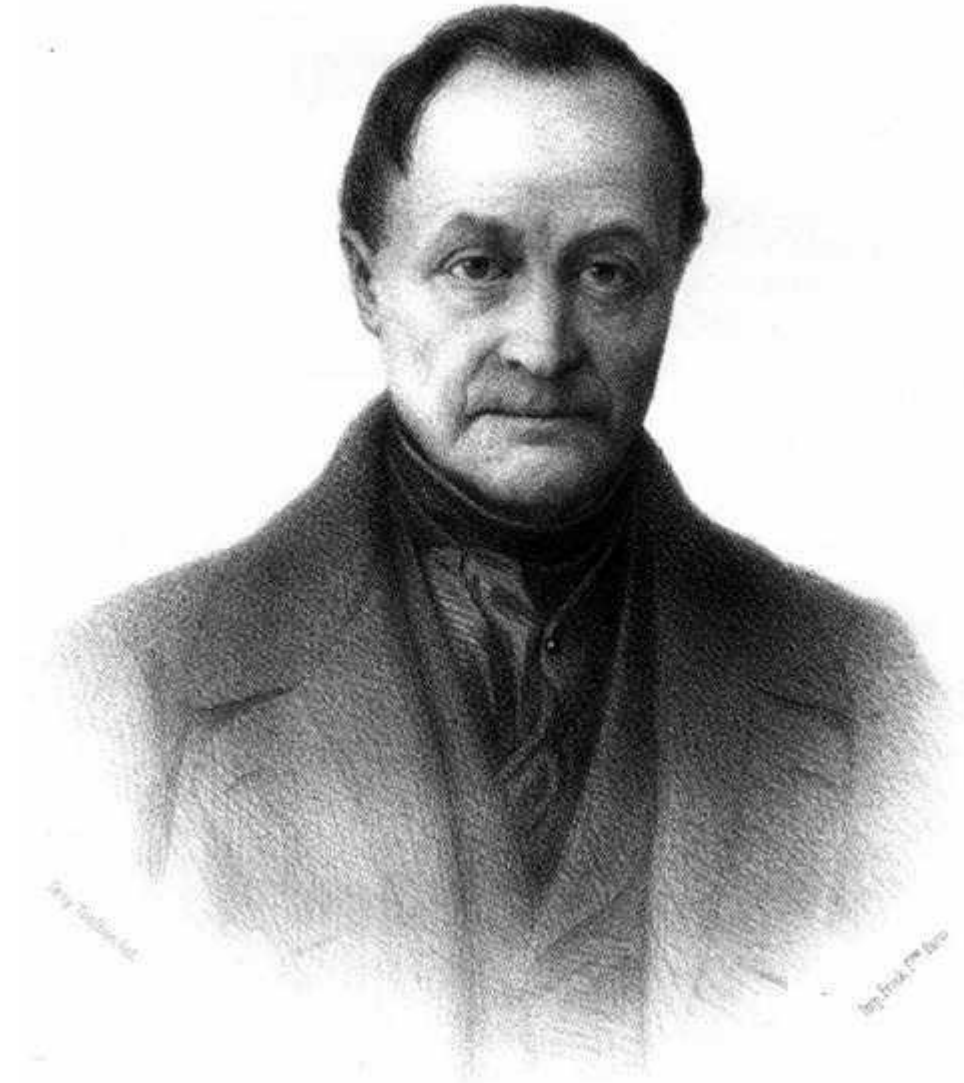
BPV\_IEBE Introduction to Experimental and Behavioral Economics

**ALTRUISM**



# What is ALTRUISM?

- Merriam-Webster dictionary
  - *unselfish regard for or devotion to the welfare of others*
  - *behavior by an animal that is not beneficial to or may be harmful to itself but that benefits others of its species*
- Cambridge English dictionary
  - *willingness to do things that bring advantages to others, even if it results in disadvantage for yourself*
- origin
  - from French *altruisme*,
  - from Italian *altrui* 'somebody else',
  - from Latin *alteri huic* 'to another'
- in 19th century philosopher Auguste Comte began to use altruism as antonym to egoism



# How to measure altruism?

- Can you measure altruism when you see it?
- **Self-Report Altruism Scale**
  - ex-post or ex-ante measurement for altruism
  - 20 (14 in adapted version) questions
  - answers 1=Never/Once/More than once/Often/5=Very often
  - measures
    - what subjects really did
    - what would they do

# Self-Report Altruism Scale

Rushton, P. C., R. (1981). The altruistic personality and the self-report altruism scale. *Personality and Individual Differences*, 2(4), 293-302.

	Never	Once	More than once	Often	Very often
1. I have helped push a stranger's car out of the snow.					
2. I have given directions to a stranger.					
3. I have made change for a stranger.					
4. I have given money to a charity.					
5. I have given money to a stranger who needed it (or asked me for it).					
6. I have donated goods or clothes to a charity.					
7. I have done volunteer work for a charity.					
8. I have donated blood.					
9. I have helped carry a stranger's belongings (books, parcels, etc.).					
10. I have delayed an elevator and held the door open for a stranger.					
11. I have allowed someone to go ahead of me in a lineup (at Xerox machine, in the supermarket).					
12. I have given a stranger a lift in my car.					
13. I have pointed out a clerk's error (in a bank, at the supermarket) in undercharging me for an item.					
14. I have let a neighbour whom I didn't know too well borrow an item of some value to me (e.g., a dish, tools, etc.).					
15. I have bought 'charity' Christmas cards deliberately because I knew it was a good cause.					
16. I have helped a classmate who I did not know that well with a homework assignment when my knowledge was greater than his or hers.					
17. I have before being asked, voluntarily looked after a neighbour's pets or children without being paid for it.					
18. I have offered to help a handicapped or elderly stranger across a street.					
19. I have offered my seat on a bus or train to a stranger who was standing.					
20. I have helped an acquaintance to move households.					

How often would you exhibit the following  
behaviors?  
How altruistic are you?



[https://wumarketing.eu.qualtrics.com/jfe/form/SV\\_aarYym8Bj8k9BtQ](https://wumarketing.eu.qualtrics.com/jfe/form/SV_aarYym8Bj8k9BtQ)

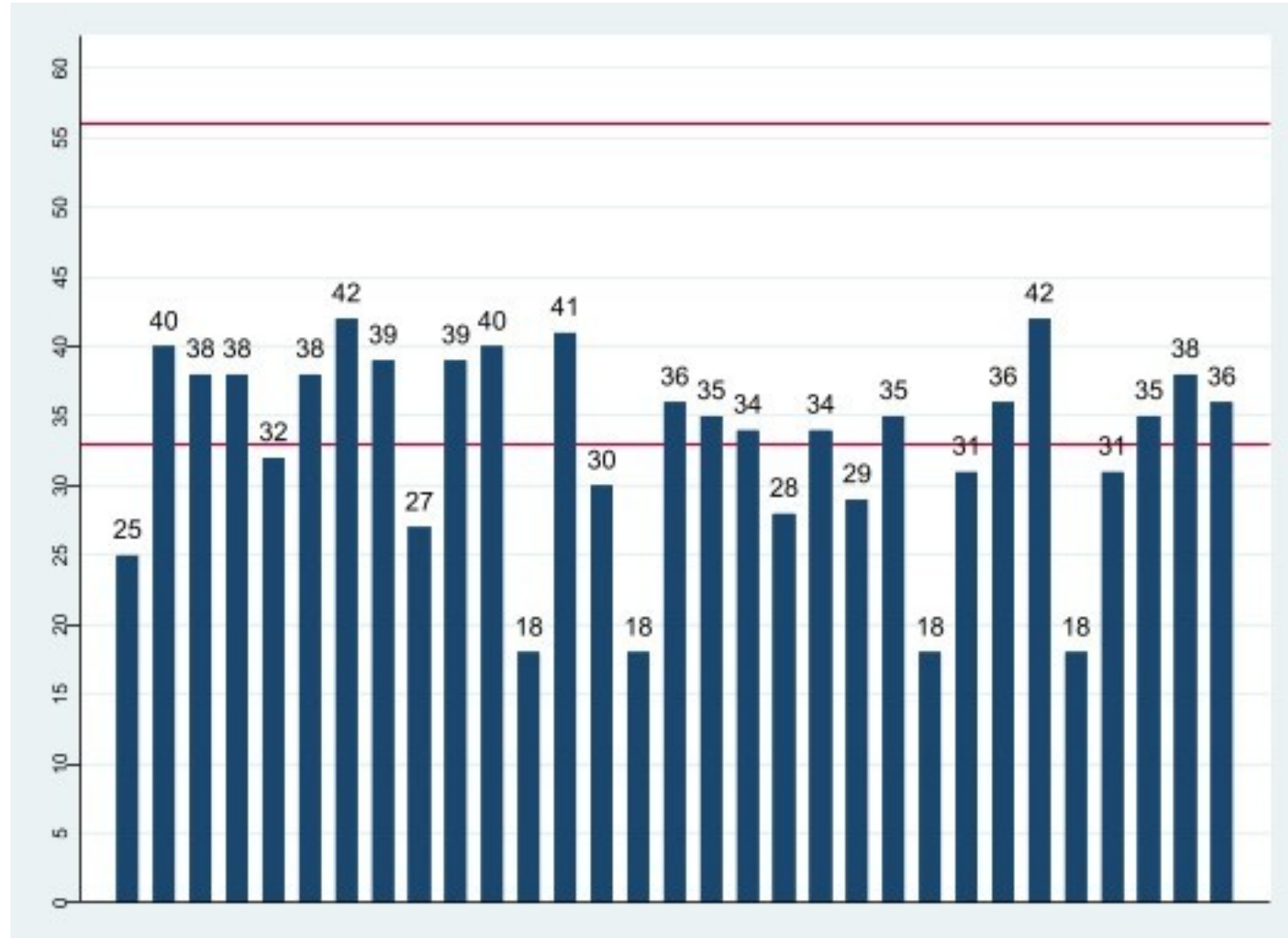
# Adapted version of Self-Report Altruism Scale

**Instructions:** How often would you exhibit the following behaviors?

**Items:**

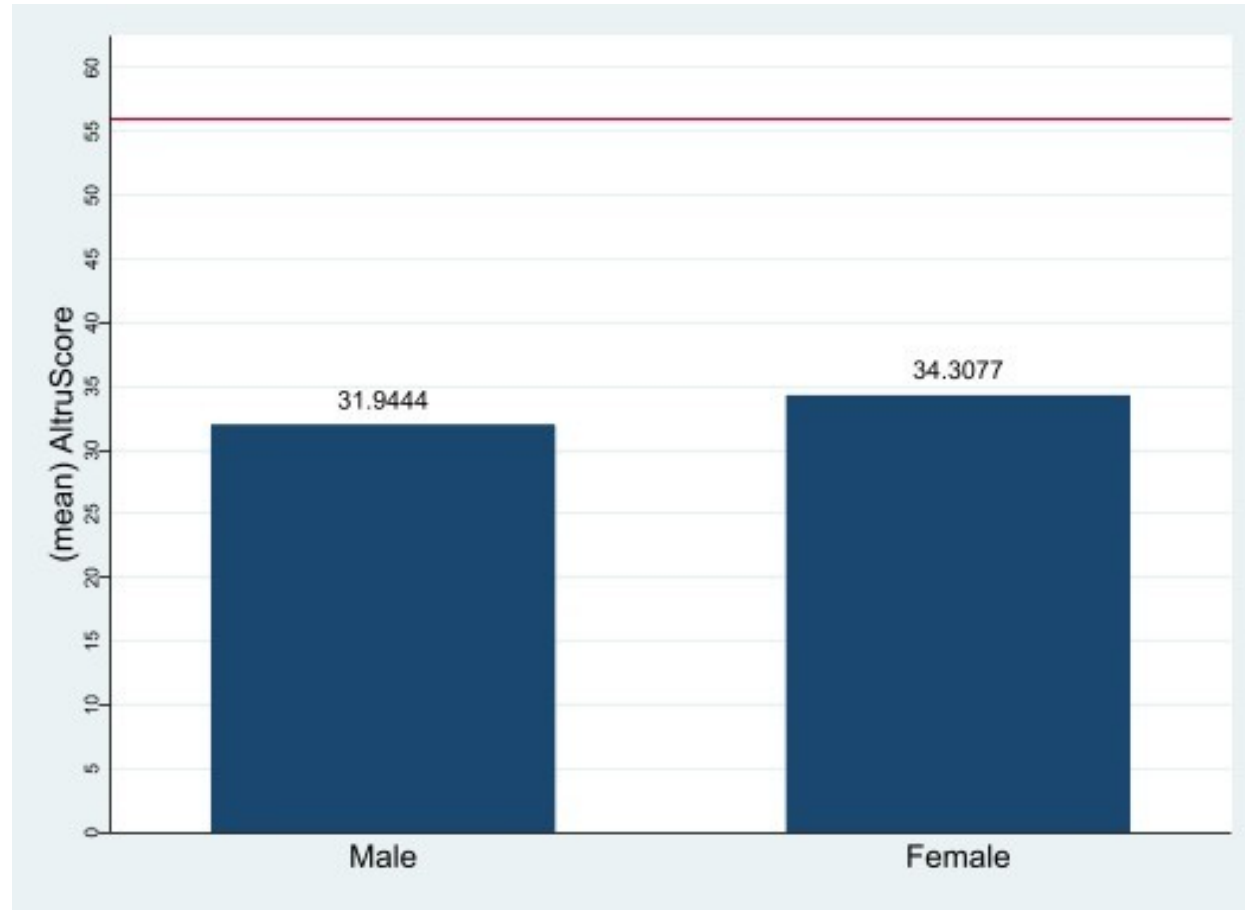
1. I would give directions to someone I did not know.
2. I would make changes for someone I did not know.
3. I would give money to a charity.
4. I would donate clothes or goods to a charity.
5. I would help carry belongings of someone I did not know.
6. I would delay an elevator and hold the door for someone I did not know.
7. I would allow someone I did not know to go in front of me in line.
8. I would point out a clerk's error in undercharging me for an item.
9. I would let a neighbor I did not know well borrow an item of value to me.
10. I would help a classmate who I did not know well with a homework assignment when my knowledge was greater than his or hers.
11. I would voluntarily look after a neighbor's pet or children without being paid.
12. I would offer to help a handicapped or elderly person across the street.
13. I would offer my seat on a train or bus to someone who was standing.
14. I would help an acquaintance move houses.

# Your altruistic score - all





# Your altruistic score - gender



# Another way to measure altruism - Experiment

Experiments allow you to observe altruistic behavior (Andreoni, Harbaugh, & Vesterlund, 2010)

- Prisoner's Dilemma
- Public Goods Game
- Dictator/Ultimatum Game
- Trust Game

# Prisoner's Dilemma



<https://youtu.be/t9Lo2fgxWHw>

# Prisoner's Dilemma

- standard game theory example originating in 1950 Flood-Dresher (quasi-)experiment (Flood 1952, 1958)
- there exist thousands of studies using PD in economics, psychology, political science, ...

# Prisoners' Dilemma

- Cooperation is the key to success in the game (Kelly and Stahelski, 1970; Roth and Murningham, 1978; and other)
- Cooperation might be triggered by altruism but more likely by reputation (Kreps, et al., 1982). The participants cooperate if they believe there is a chance someone is actually altruistic.
- Andreoni and Miller (1993) found that 20% of subjects have to be altruistic to support equilibria findings
  - The conclusion is supported by other studies (e.g. Camerer and Weigelt, 1988; McKelvey and Palfrey, 1992; Andreoni and Samuelson, 2006)

# Public Goods Game

- Original: Marwell and Ames. *"Experiments on the provision of public goods. I. Resources, interest, group size, and the free-rider problem."* *American Journal of sociology* (1979)
- One of the most standard game in experimental economics.
- Each player contributes to **common** or **private account**.

# Public Goods Game

- You play in groups of **4 players for 10 rounds**. The composition of the group is the same in all 10 rounds.
- At the beginning of each round, **each player receives an endowment of 20** tokens and can decide **how many tokens to contribute to the common project**.
- Each token contributed to the project will be **multiplied by 2 and distributed equally among all 4 members of the group**. Therefore, each player receives 0.5 tokens for each token contributed to the project by any member.
- Tokens not contributed to the **common project** are kept by the player.

# Public Goods Game

## Login

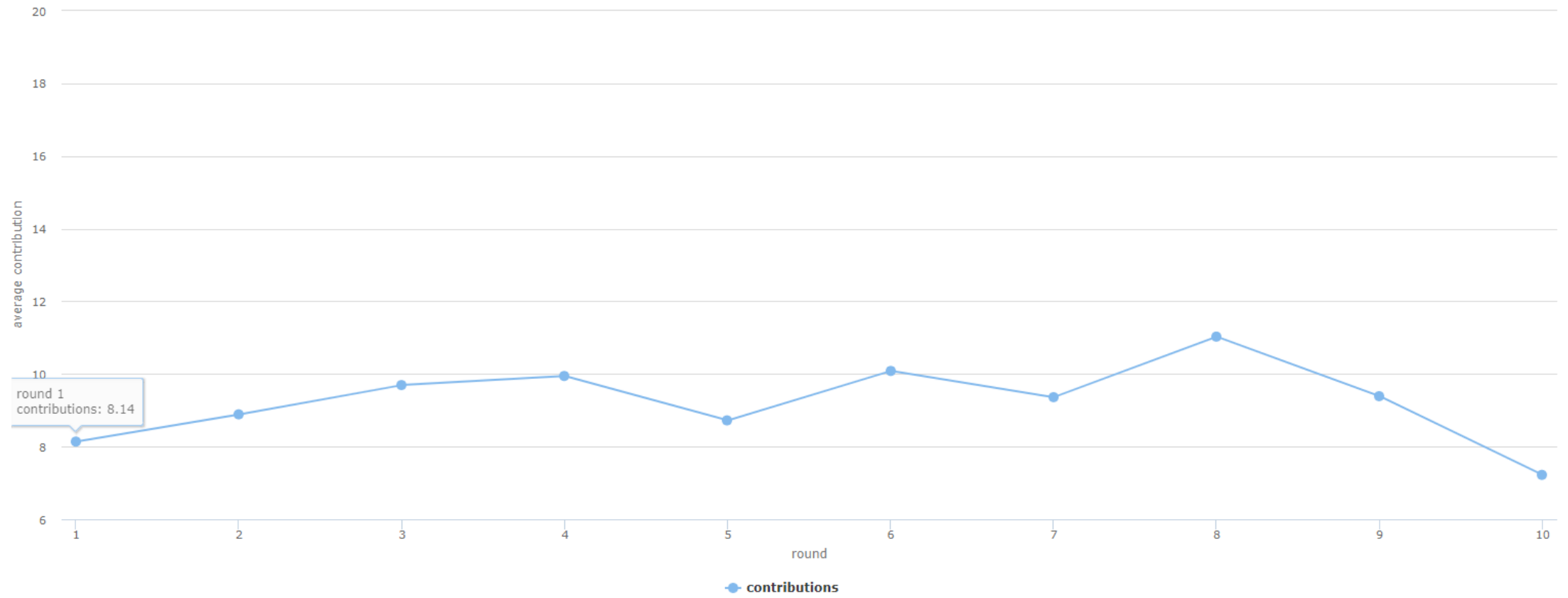
1. go to: <https://classex.uni-passau.de>
2. choose: Masaryk University
3. choose: Introduction to Behavioral and Experimental Economics
4. choose: participant
5. enter password: IEBE2021



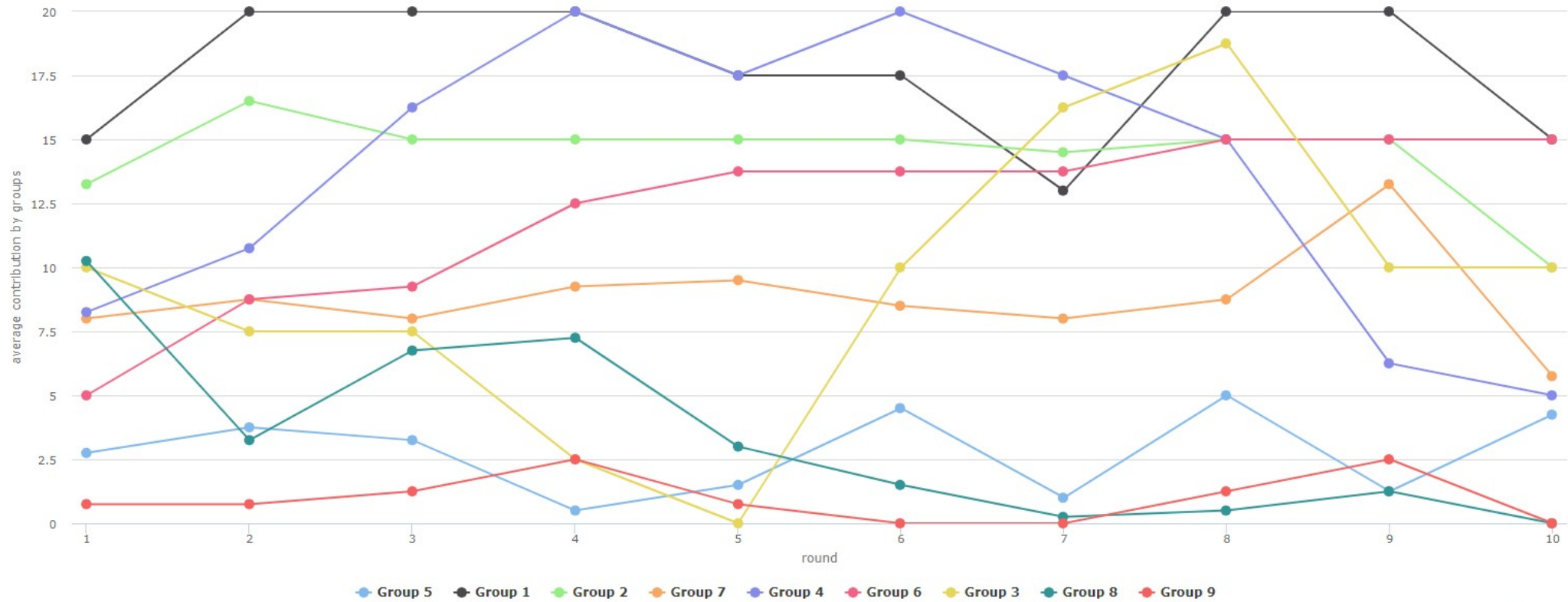
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# Public Goods Game – your results



# Public Goods Game – your results



# Public Goods Game

- Original: Marwell, Gerald, and Ruth E. Ames. *"Experiments on the provision of public goods. I. Resources, interest, group size, and the free-rider problem."* *American Journal of sociology* (1979)
- One of the most standard game in experimental economics.
- Each player contributes to **common** or **private account**. Usually:
  - Each player gets same percentage of total private account contributions.
  - Contributions are multiplied by a coefficient  $>1$ .
- The group's total payoff is maximized when everyone contributes all of their tokens to the public pool.
- **Dominant strategy is zero contribution by every player to common account** □ experimental results show a different story.
  - Results show, that average contribution is significantly above zero (Isaac and Walker, 1988; Isaac, Walker and Williams, 1994; Andreoni, 1988; Andreoni and Croson, 2008; Palfrey and Prisbrey, 1996)

# Public Goods Game

- Applicable on charitable giving, fundraising, transportation etc.
- Treatment variations:
  - Opened communication in the middle of the experiment.
  - Possibility of punishment.
    - People do punish ( $\downarrow$ contribution  $\square$   $\uparrow$ punishment) and cooperation increases (Fehr Gächter, 2000)
    - “Counter fire“ lowers cooperation (Nikiforakis, 2008)
    - Stronger punishment increases contributions (Denant-Boemont, 2007)
    - Anonymous punishment is more efficient (*Denant-Boemont, 2007*)

# Public Goods Game

- Any error or variance in data could be viewed as altruism (Ladyard, 1995)
- Experiments shown that:
  - Warm-glow dominates altruism (Palfrey and Prisbey, 1997)
  - Altruism dominates warm-glow (Goeree, Holt and Laury, 2002)
  - Both warm-glow and altruism are evident in PGG (Bolton and Katok, 1998; Eckel, Grossman and Johnston, 2005)

warm-glow = emotional reward of giving to others

# Ultimatum and Dictator Game

## Ultimatum Game

- Proposer and Responder bargain over a division of a given sum of money.
  - I. Proposer: makes an offer how to split the sum
  - II. Responder: accepts or rejects
    - if accepted they split the money
    - if rejected neither gets anything

## Dictator Game

- Dictator and Recipient bargain over a division of a given sum of money.
  - I. Dictator: splits the sum
  - II. Recipient: is informed of endowment left by the dictator

# Dictator Game

 can send all, nothing or part of his endowment of 100 Euro  to

 makes no decision

# Dictator Game

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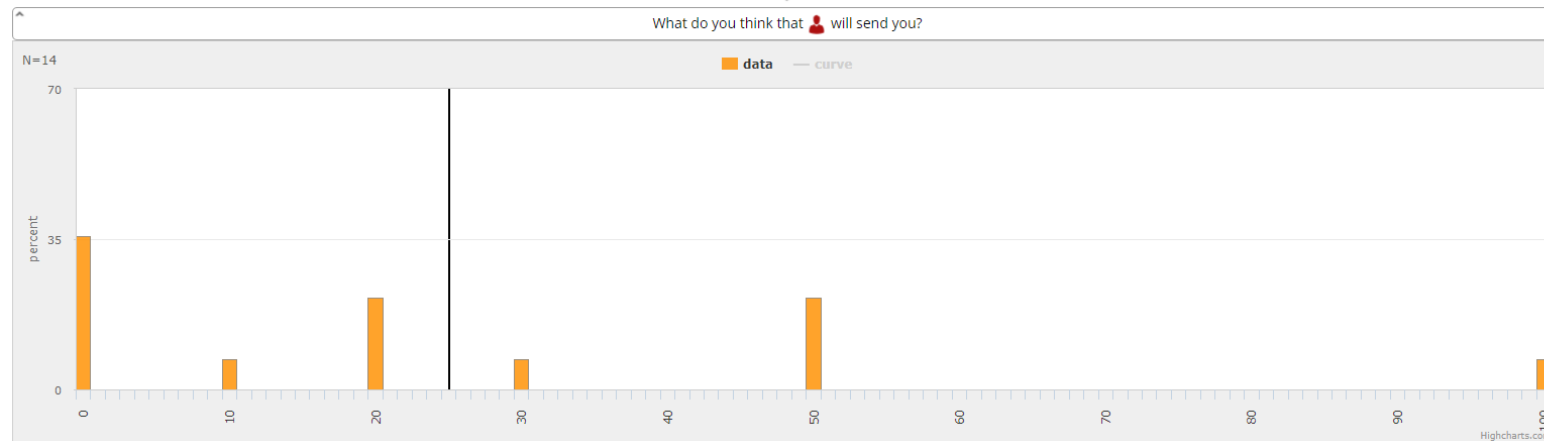
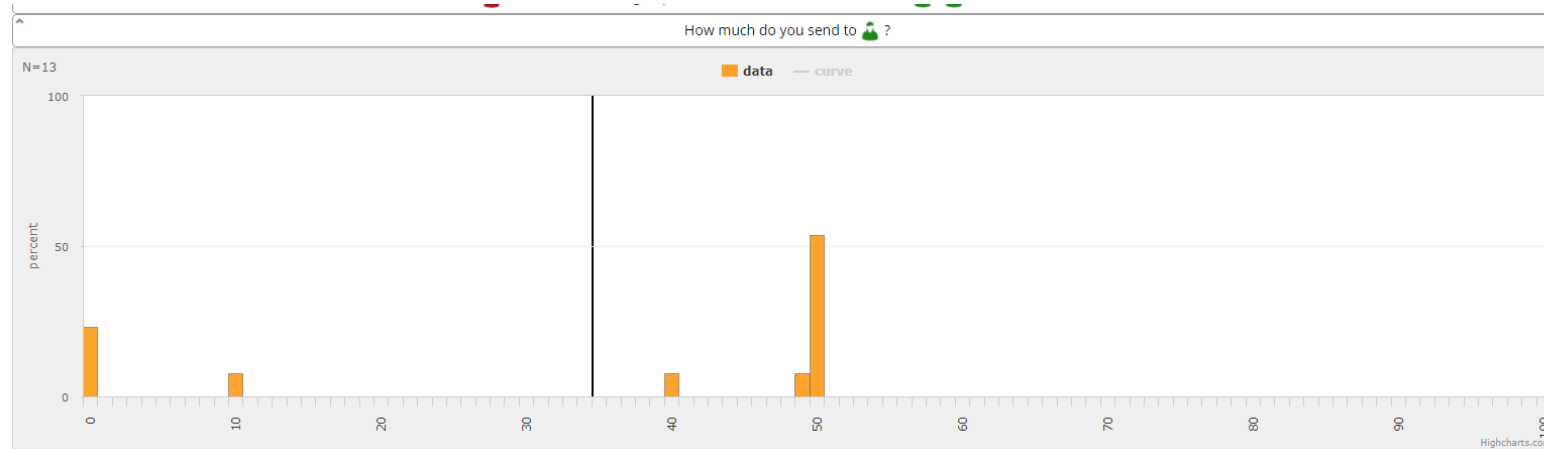
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# Dictator Game – your results



# Ultimatum and Dictator Game

## Ultimatum Game

- Proposer and Responder bargain over a division of a given sum of money.
  - I. Proposer: makes an offer how to split the sum
  - II. Responder: accepts or rejects
    - if accepted they split the money
    - if rejected neither gets anything
- unique subgame perfect equilibrium the proposer suggests the responder the smallest amount possible and the responder accepts

## Dictator Game

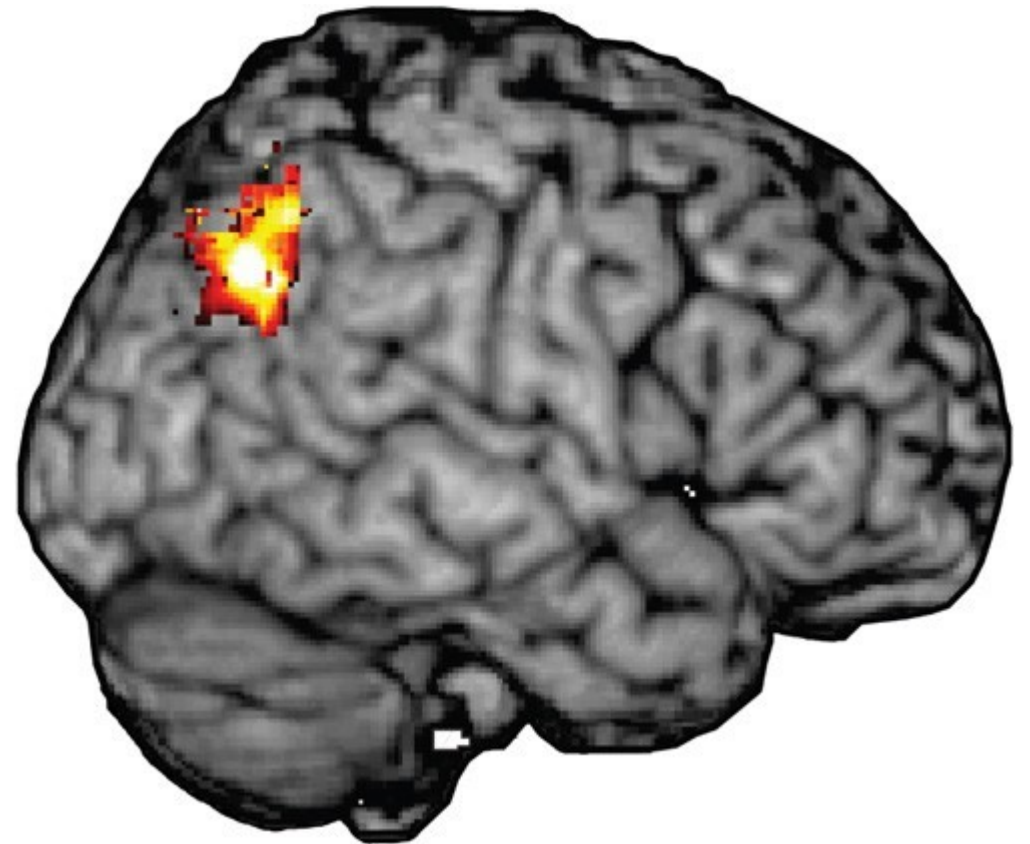
- Dictator and Recipient bargain over a division of a given sum of money.
  - I. Dictator: splits the sum
  - II. Recipient: is informed of endowment left by the dictator
- unique subgame perfect equilibrium: the dictator takes it all

# Dictator Game

- Proposers choose a fair deal (Güth, Schmittberger and Schwarze, 1982) but is it altruism?
  - Answered by Forsythe, et al. (1994) by removing 2nd stage of the game: in average 25% of the endowment was shared
- Andreoni and Miller (2002) investigated altruism by gender
  - men are more likely to maximize total payments to both subjects
  - women are more likely to equalize payments to both
  - ⇒ men are more altruistic when giving is cheap and women when it is expensive

# What factors drive the altruism

- **Culture** (Roth et al., 1991; Henrich et al., 2001)
- **Psychological development and socialization** (Harbaugh and Krause, 2000)
- **Our brain** (Tankersley, Stowe and Huettel, 2007)



# Trust Game

- 2 players; both receive same endowment
- I. Player 1 (*sender*) may send some amount of his money to Player 2 (*receiver*)
  - whatever he/she sends will be tripled on the way
- II. Player 2 makes similar choice:
  - send some amount of the now-tripled money back to Player 1, or not

# Trust Game *(if there is time)*

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# Trust Game

- 2 players; both receive same endowment
- I. Player 1 (sender) may send some amount of his money to Player 2 (receiver)
  - whatever he/she sends will be tripled on the way
- II. Player 2 makes similar choice:
  - send some amount of the now-tripled money back to Player 1, or not

transfer of 0 is subgame perfect equilibria for sender

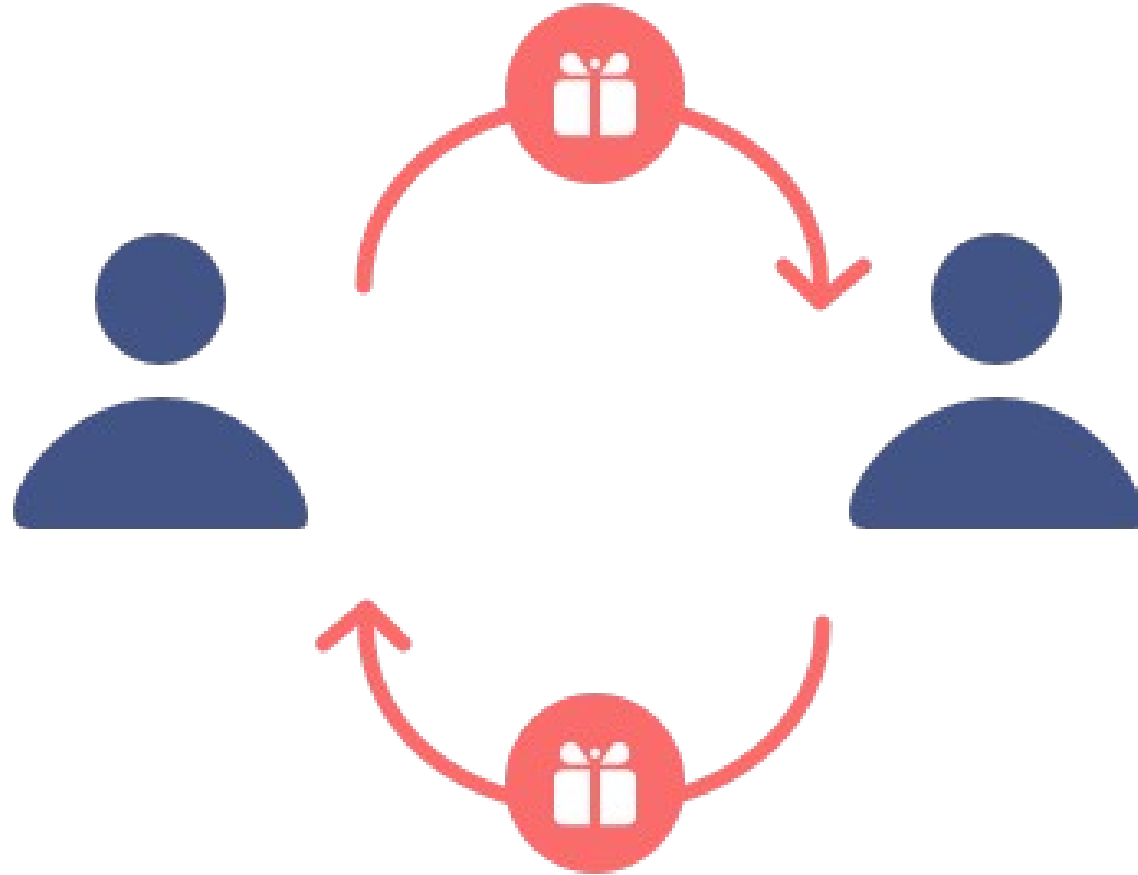
transfer of 0 is a dominant strategy for receiver

# Trust Game

- Transfer from Player 2 is often slightly below average transfer from Player 1 (Berg, Dickhaut, McCabe, 1995)
- 60% of senders and 42% receivers are motivated by altruism (Cox and Deck, 2005)
- **reciprocity** is clearly present in the Trust Game (Charness and Haruvy, 2002; Gneezy, Guth and Verboven, 2000)



# RECIPROCITY



# What is RECIPROCITY?

- Merriam-Webster dictionary
  - *a situation or relationship in which two people or groups agree to do something similar for each other, to allow each other to have the same rights, etc. : a reciprocal arrangement or relationship*
- Cambridge English dictionary
  - *behavior in which two people or groups of people give each other help and advantages*
- origin
  - from Latin *reciprocus* meaning returning.

# Reciprocity

- social rule that says that we should “repay”
- differs from altruism in a manner that a response is expected
- Might be find in Hammurabi’s code (~1750 BC):  
*“If a man put out the eye of another man, his eye shall be put out.”*
- Used make someone follow a rule  
→ e.g. law, wages are reciprocal



# Positive vs Negative Reciprocity

- Positive

- a motivation to adopt a generous action that benefits someone else, at one's own material cost, because that person's intentional behavior was perceived to be beneficial to oneself.

- Negative

- a motivation to adopt an action that harms someone else, at one's own material cost, because that person's intentional behavior was perceived to be harmful to oneself

# Reciprocity in experiments

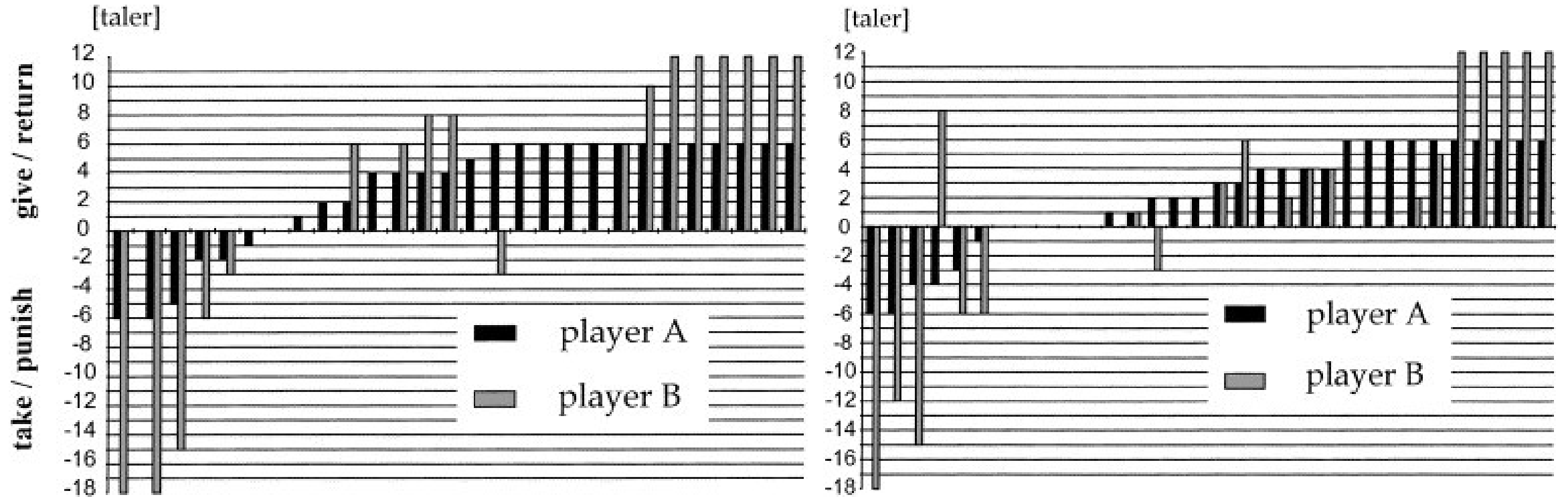
- It is confirmed that direct positive reciprocity is frequent in experiments (Diekmann, 2004)
- 40-66% of subjects display non-selfish behavior (Fehr and Gächter, 2000)
- Negative reciprocity is measured by means of a **Moonlighting Game** (Abbink et al., 2000) where one player can take money from other, who can punish in return

# Moonlighting Game

- 2 players
- both endowed with \$12
- I. Player 1 can:
  - take money (*up to \$6*) from Player 2
  - or transfer money (*up to \$6*) to Player 2 (*amount transferred is tripled*)
- II. Player 2 can:
  - transfer money (*up to 18*) to Player 1
  - or spend money (*up to 6*) to reduce Player 1's payoff (*by three times the amount spent*)
- subgame perfect equilibrium:
  - Player 1 will take the maximum possible amount from Player 2
  - Player 2 will neither punish nor return any money

Abbink, K., Irlenbusch, B., & Renner, E. (2000). The moonlighting game: An experimental study on reciprocity and retribution. *Journal of Economic Behavior & Organization*, 42(2), 265-277.

# Moonlighting Game



Abbink, Irlenbusch, & Renner  
(2000)

# Moonlighting Game

- **retribution** (punishment for breaking the contract) is more compelling than reciprocity because the hostile actions are punished more often than friendly actions rewarded (Abbink, Irlenbusch, & Renner, 2000)
- first players are not afraid of negative reciprocity (Cox et al., 2002)



# Bribery Game

- Essential characteristic of corruption is reciprocity
  - Both negative and positive
- 2 (Abbink et al., 2002) or 3 player game (Alatas et al., 2009)
- Player 1 “FIRM” may offer a bribe
- Player 2 “OFFICIAL” either rejects or accepts it
- Player 3 “CITIZEN” may punish



# Bribery Game

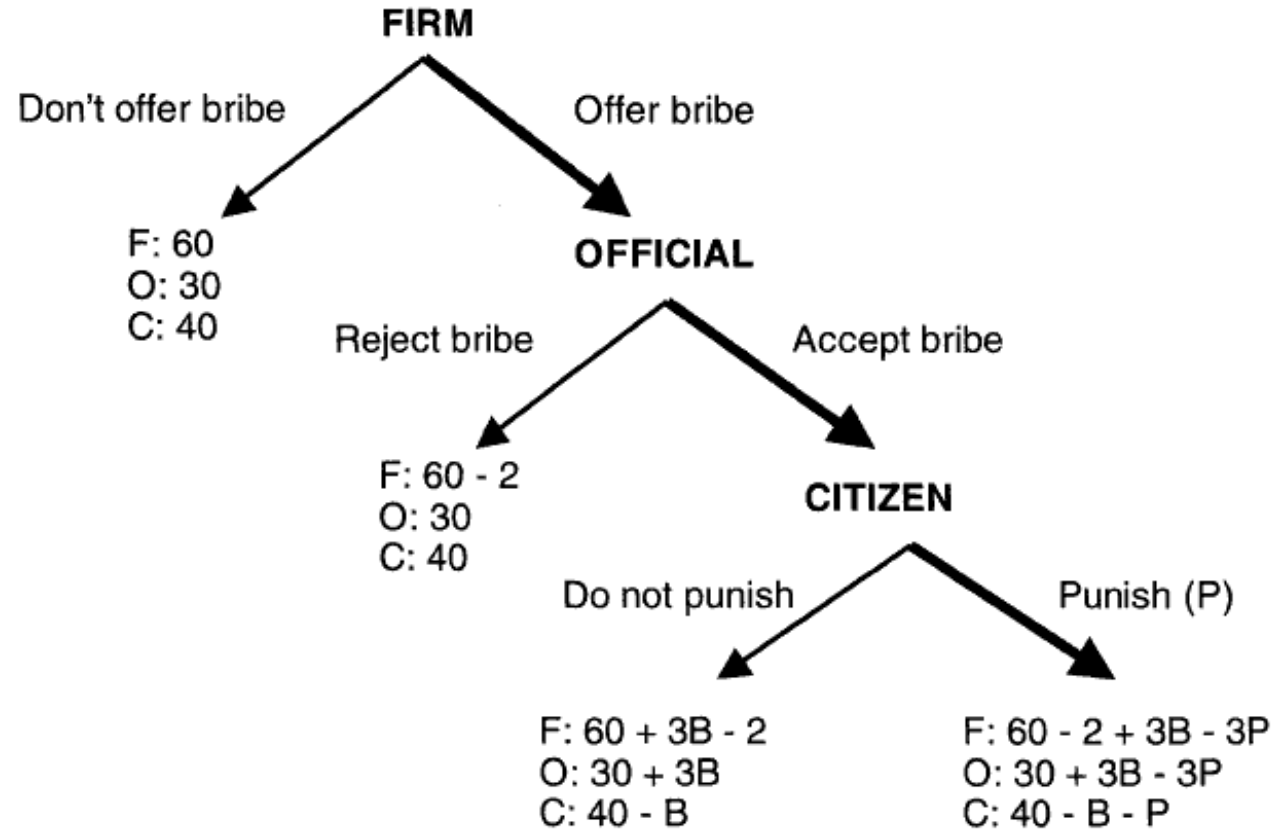


Figure 1. The Game Tree

# Bribery Game

- Reciprocity and trust may lead to stable exchange of benefits (corruption) even when own payoffs are not maximized (Abbink et al., 2002)
- Women are less likely to offer bribes and more likely to punish corruption but it varies across countries. Variation might be explained by different roles of women (Alatas et al., 2009).
- However, we found that women are less likely to offer bribes and less likely to punish corruption (Fišar, et al., 2016).

# Is altruism and reciprocity only human's domain?

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# Thank you for your attention

If you have any question, feel free to ask in the Teams Group or write me an email: [milos.fisar@wu.ac.at](mailto:milos.fisar@wu.ac.at)

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