



SCIENCE OF  
PHILANTHROPY  
INITIATIVE

EVIDENCE-BASED RESEARCH ON CHARITABLE GIVING

# Pro-social Preferences & Experiments – Public Good, Dictator, Ultimatum

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## Class Activities (3)

- You will have the chance to earn tokens in each activity.
- Tokens can be converted to *extra credit* at the end of the semester such that 10 tokens = 1 PERCENT of extra credit added to your grade.
- We will do 3 class activities.
- At the end of class, 1 of the activities will be chosen as the “activity that counts”
- Your outcome in that activity will be the one that is applied.
- Since you don’t know which activity will be chosen, you should make your decisions in each game *as if* it is the ‘decision that counts’



# Activity 1

- You will receive 5 tokens.
- You will decide how to distribute your tokens between two ‘accounts’
  - The individual account – this means you will apply all 5 tokens to your own grade
  - The class account – any tokens applied to the class account get multiplied by 0.025 and that amount is given to *each person in the class*



# Activity 1 - Possible Outcomes

- Everyone in the class chooses to keep their tokens. You get:
  - 5 in individual account +  $60 \cdot 0 \cdot 0.025 = 5$  tokens
- Everyone in the class gives all 5 tokens to the class account. You get:
  - $0 + 60 \cdot 5 \cdot 0.025 = 7.5$  tokens
- Everyone in class gives all 5 tokens to the class account, but you give 0 tokens. You get:
  - $5 + 59 \cdot 5 \cdot 0.025 = 7.4 + 5 = 12.4$  tokens
  - Everyone else gets:
    - 7.4 tokens



## Activity 2

- If you have an ID number on a yellow card (Yellow players), you will receive 8 tokens. If you have an ID number on a pink card (Pink players), you receive 0 tokens.
- We are going to randomly match up Yellows and Pinks by ID number.
- If you are a Yellow player, you decide how many tokens to keep, and how many tokens to give to the Pink player that you are matched with
- Your match is anonymous – you will not know who your Pink match is, or your Yellow match



## Activity 3

- If you have an ID number on a yellow card (Yellow players), you will receive 0 tokens. If you have an ID number on a pink card (Pink players), you receive 8 tokens.
- We are going to randomly match up Yellows and Pinks – this time you will get a NEW match
- If you are a Pink player, you will determine a split of the tokens between you and your match
- Now the Yellow player has one more choice to make – accept or reject your split. If he/she accepts the split, he/she gets the tokens you sent and you get the tokens you kept. However if she **rejects** the split, neither of you get any tokens.



# Strategy Method

- If you are a YELLOW, write down if you would accept or reject **any offer**. CIRCLE 1 for each line.
- This is called the “strategy method”
  
- If I get 0 and PINK keeps 8, I will A / R
- If I get 1 and PINK keeps 7, I will A / R
- ...
- If I get 6 and PINK keeps 2 I will A / R
- If I get 7 and PINK keeps 1 I will A / R
- If I get 8 and PINK keeps 0 I will A/ R



# Video

- [Altruism-Freakonomics Radio](#)







# Activity 1 – Calculating Outcome

- TA will add up all the contributions by the group – write on the board
- Students:
  - Put YOUR CONTRIBUTION, add:
  - All contributions x 0.025
  - Add to Get the total
- Total contributions were how much of the “total endowment”?
- Total endowment – number of students in class times 5 tokens



# Activity 1: Public Goods Game

- Illustrates this idea that everyone has a struggle to *keep* money for themselves versus *give* money to the greater good
- If everyone donates to the public good, the society is best off – this is called the **pareto optimal equilibrium** (equilibrium that makes society best off)
- If no one donates to the public good, society is worse off
- There is an incentive to ‘free ride’ on the contributions of others
  - **free riding:** choosing not to donate to a cause but still benefiting from the contributions of others



# Theoretical Predictions

- **Nash equilibrium:** solution where each player is making the best decision he/she can, given the choices of the others
- rational consumer's utility is based on \$\$ (in this case tokens)
- If I donate everything, I have the **incentive** to decrease my donation. Notice:
  - 59 students x 5 tokens x 0.025 + 5 points = 12.4 tokens
  - 59 students x 5 tokens x 0.025 + 4 points = 11.4 tokens
  - 59 students x 5 tokens x 0.025 + 3 points = 10.4 tokens
  - 59 students x 5 tokens x 0.025 + 2 points = 9.4 tokens
  - 59 students x 5 tokens x 0.025 + 1 points = 8.4 tokens
  - 59 students x 5 tokens x 0.025 + 0 points = 7.4 tokens
- **Nash equilibrium** in the Public Goods game is to give 0 tokens to the class account and keep 5 tokens in the individual account



# Applications

- A **public good** is a good that has a high degree of non-diminishability and non-excludability
  - non-diminishability: any one person's consumption has no effect on the others
  - non-excludability: impossible or costly to exclude others from consuming the good
- **Examples:**
  - NPR: National public radio
  - Animal shelter
- **Modeling with experiments**
- Many problems of private provision of public goods are modeled this way: donations, volunteering, etc.



## Activity 2 - Dictator Game

- *Raise your hand if you received...0...1...5 tokens*
- Individuals maximizing utility, as defined by the \$ bundle, would choose to keep the entire 8 tokens
  - However, some of you chose to give tokens away
  - Does this mean that you are not rational?
- Individuals often give to charity - charitable gifts are 2% of US GDP, over \$300 billion in gifts annually
  - Does that mean people who give to charity are irrational?



# Motivations to Give

- **other-regarding preferences:** a gain in satisfaction (and utility) resulting from increasing the utility of someone other than yourself
- **pure altruism:** concern for the welfare of others – your utility increases if the utility of another increases
- The two terms are generally interchangeable



## Activity 3 – Ultimatum Game

- *How many of you got an offer of...0, 1, 2...tokens?*
- *How many tokens of 1 to 7 split were accepted? rejected?*
- In this case, the best strategy for the Proposer is to give the smallest amount possible – 1 token
  - This gives the highest amount to the proposer – 7 tokens!
- The best strategy for the receiver is to “accept”
  - since 1 token > 0 tokens
- However, many of you chose to propose a greater amount than 1
- Some unequal amounts were rejected!



# Difference in the Ultimatum Game

- The proposer knows that not all offers will be accepted, so the offer could be higher than in the dictator game
- **inequality aversion:** a preference in which you would rather have equal earnings than have one person earn more than the other
- **spite:** disliking a situation in which others have more than yourself – so much so that you'd reject the offer





# Philanthropy in the US

- Donations made up 2% of US GDP last year
- Over \$300 billion donations to US charities annually
- 90% of households report giving at least once in the last year
- What other factors make people give?
  - Recognition
    - prestige, avoiding ostracism
    - Most donations not done anonymously
  - Conditional or unconditional gifts
  - Social norms, social distance
  - ‘Warm glow’ (Jim Andreoni, 1990)
    - Idea that you get utility from ‘the act of giving’



# Experiments

- Why is government expenditure necessary?
- Why are experiments in which *real money* is at stake used by economists?
- In surveys, people may claim they will voluntarily give
- In practice, people give less than they say!
- Just because people are altruistic, the optimal level of good may not be provided.