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## The Effects of Discrimination in Public Goods Games

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# The Effects of Discrimination in Public Goods Games

## Introduction

This study explores the effects of discrimination on people's willingness to contribute to public goods. The experiment not only attempts to measure the significance of this partiality, but also attempts to shed light on how discrimination affects this willingness to contribute by testing both the feeling of discrimination and the possibility that discrimination leads to lower payouts. Beyond this, the study acts as an opportunity to further connect the thoughts, behaviors, and political tendencies of social groups to their fiscal decisions.

## Literature Review

- Focus of prior research:
  - Proving the “Free Rider” effect
  - Analyzing effects of demographic differences such as gender, ethnicity, and income level
  - Analyzing effects of psychological differences such as altruism and decision error
- Recent experimental design shifts
  - Accounting for heterogeneity of groups
  - Accounting for group connectedness/altruism
  - Reworking design to minimize decision error and miscomprehension
- Further improvements for my study
  - Reworking design to minimize miscomprehension of instructions and game play
  - Careful consideration of treatment randomization for statistical significance

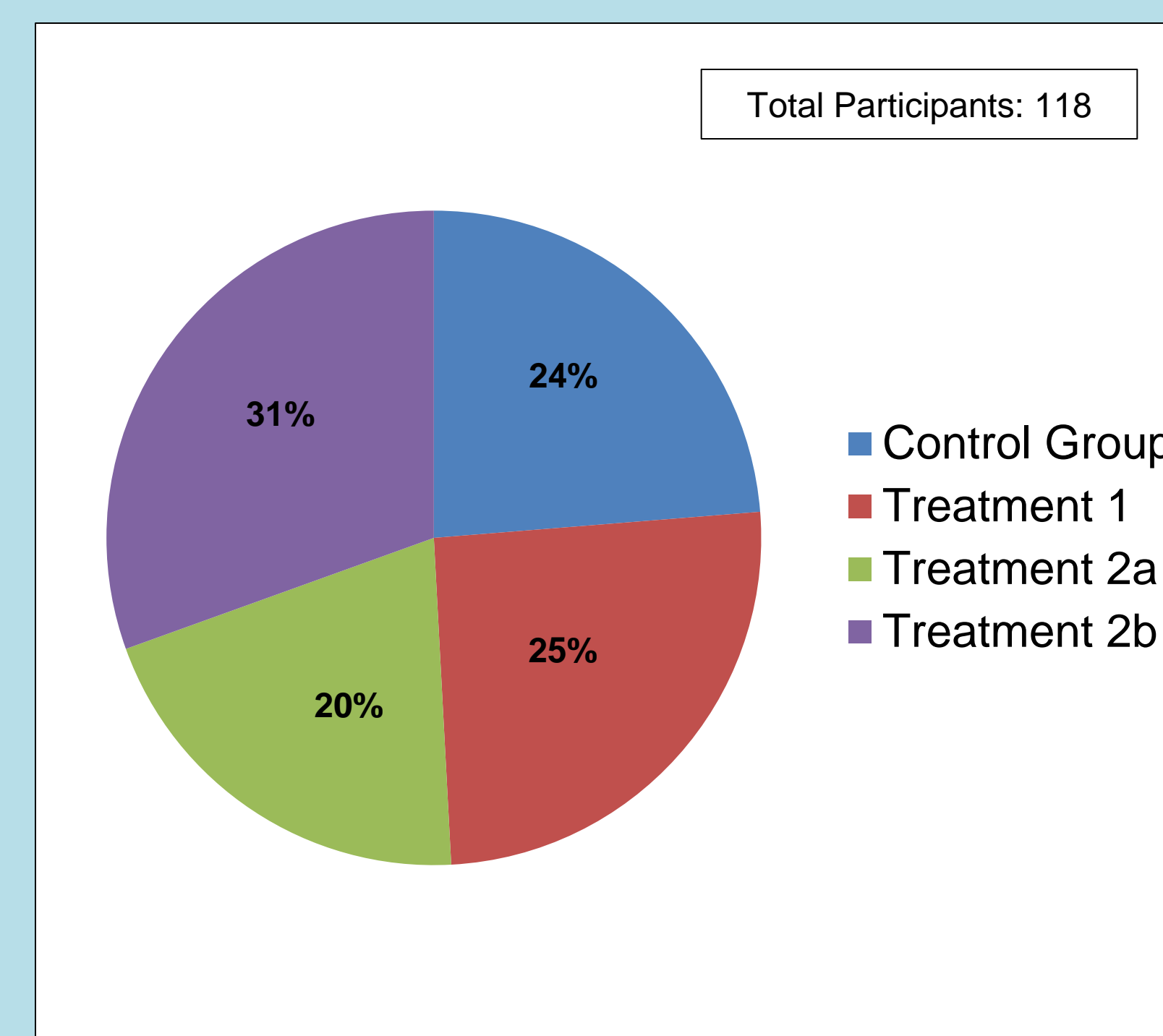
## Methodology

- Participants: 120 University of Rhode Island students
- Treatments
  - Control Group: knowledge of their contribution payout structure and no knowledge of any discriminatory conditions of the other players
  - Treatment Group 1: identified as a disadvantaged group but with no change in its payouts
  - Treatment Group 2: learns that they have been assigned to a disadvantaged population and are made aware of exactly how disproportionate their payout structure is as compared to the other members of their group
- Game Parameters
  - Public good to fund: public school
  - Groups of 3
  - Rounds of contribution collection: 5
  - Tokens given per round: 25
  - Payout structure: (See Table 1)

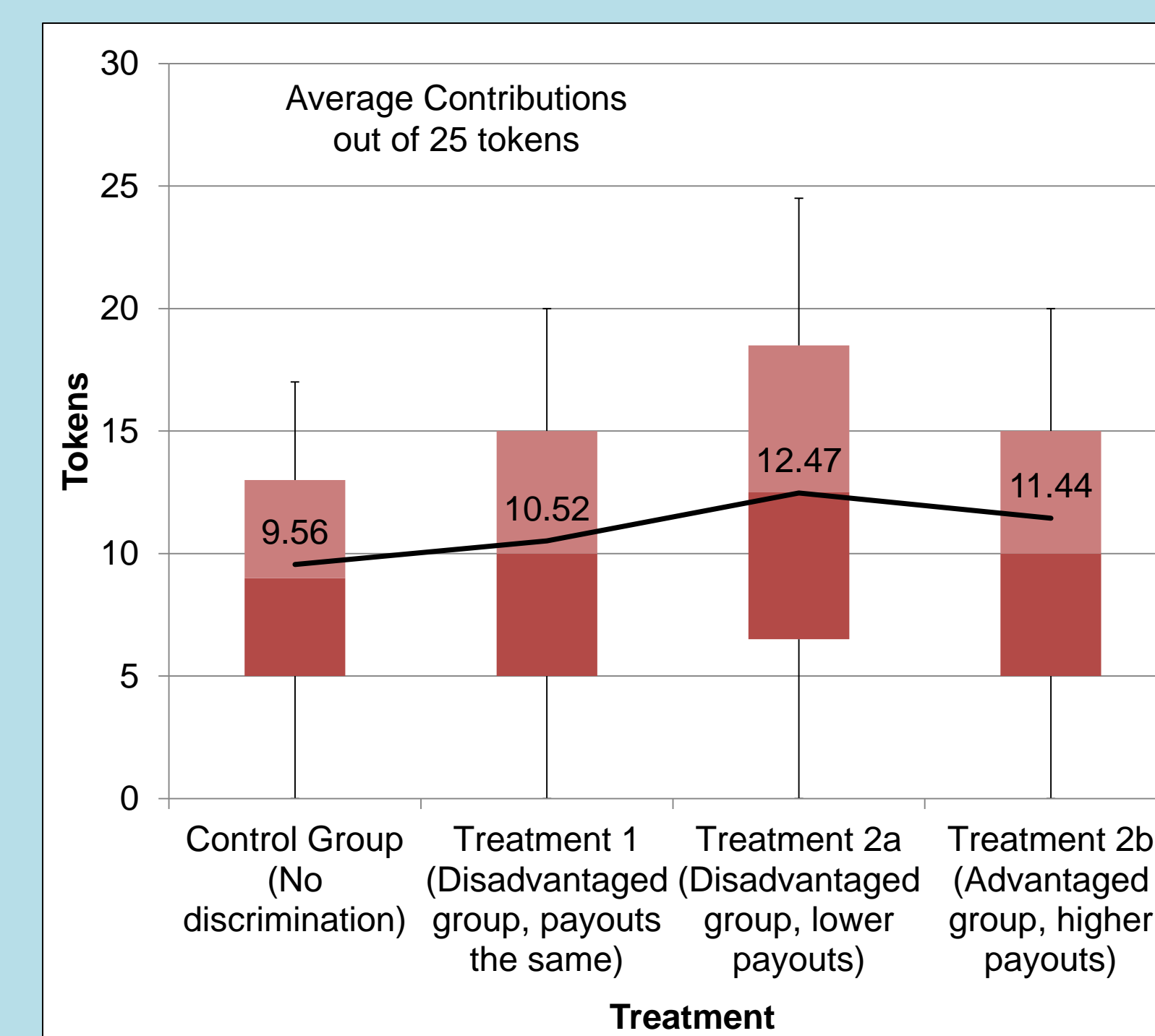
**Table 1.**  
Treatment Payout Structures

Group	Payout Structure	
Control Group	(total group contributions*1.5)/3+ tokens kept	
Treatment 1	(total group contributions*1.5)/3+ tokens kept	
Treatment 2	2a	2b
	(total group contributions*1.5)*20% + tokens kept	(total group contributions*1.5)*40% + tokens kept

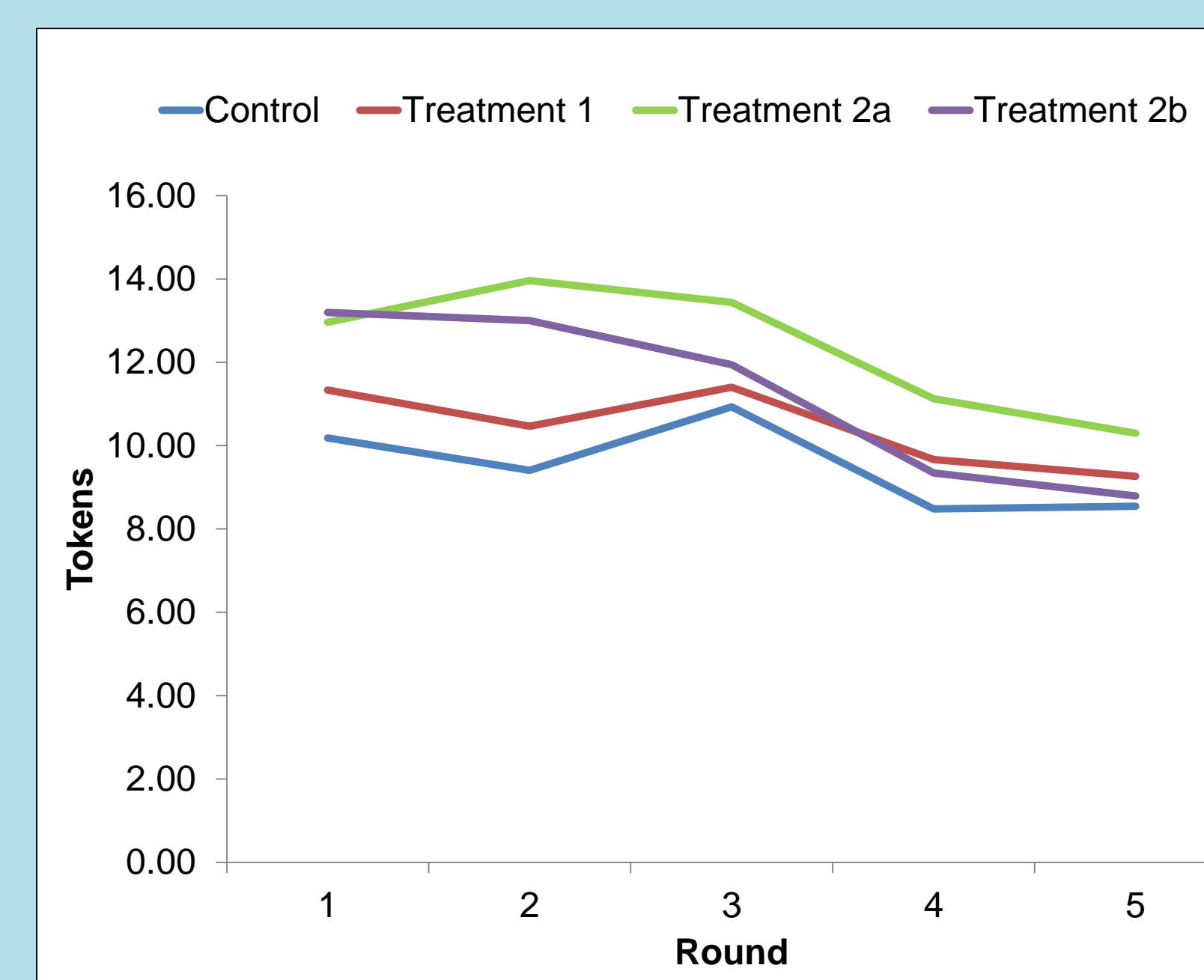
**Figure 1.**  
Participants per Treatment Group



**Figure 2.**  
Average Contributions



**Figure 3.**  
Average Contributions by Round



## Payout Optimums

### Social Optimum

- Maximize group payout -> Everyone contributes all 25 of their tokens each round
- 25 tokens \* 3 people/group = 75 \* 1.5 multiplier
  - **112.5 token payout/group**
  - **37.5 token payout/person**

### Private Optimum

- Maximize individual payout -> Individual keeps all 25 of their tokens each round while other group members contribute all of their 25 tokens
- 0+25+25 tokens/group \* = 50 \* 1.5 multiplier
  - **100 token payout/group**
  - **Player 1: 50 tokens**
  - **Player 2: 25 tokens**
  - **Player 3: 25 tokens**
- Leads to “Free Rider” problem = No contributions

## Results

### Average Contributions by Treatment

- Difference in tokens from Control Group's average:
  - Treatment 1: 0.961 (0.904)
  - **Treatment 2a 2.916\*\*\* (0.952)**
  - Treatment 2b 1.883\*\* (0.964)
- Treatment 2a has highest average contribution despite being most disadvantaged

### Average Contributions by Round

- Contributions began modest and overall **decreased** as rounds progressed
- **Treatment 2a consistently contributed the most of all treatments by round also**

\*\* p-value < 0.05, \*\*\* p-value < 0.01  
Standard errors in parentheses

## Discussion

### Interpretation of Results

- Expectation met: contributions decreased over the course of the game
- Expectation met: contributions were more consistent with the private optimum than the social optimum
- Expectation challenged: most discriminated group produced the highest contributions per round and overall throughout the game

### Potential Reasoning

- Perhaps disadvantaged participants sought to overcome their discrimination by over-compensating in contributions, i.e. income effect
- Otherwise, could be an effect of altruism or confusion, though the latter is unlikely based on experimental design

### Room for Further Study

- Explore variation of discrimination's psychological connotations -> economic interpretations for contributions to public goods rather than assign general sense of “disadvantage” to a test group

## Acknowledgements

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