**The Bystander Effect in a Multi-Player Dictator Game**

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**The Good Samaritan**  
by He Qi

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**Why are we nice to each other?**

- Proximate-level explanation for pro-social behavior
- Eliminate strategic interests — “residual” behavior (e.g., anonymous, one-shot interactions)
- So the needy receive help, or to help those in need?
  - Consequentialist vs. Deontological
  - Altruism vs Warm Glow (e.g., Andreoni, 1989; 1990)
  - Social preferences (e.g., Fehr and Schmidt, 1999; Charness and Rabin, 2002) vs Tacit Reputation Concern (e.g., Haley and Fessler, 2005; Kurzban et al, 2007)

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**The Bystander Effect**  
Latané and Nida, 1981

- A recipient is less likely to receive help as the number of onlookers increases.
- The presence of others inhibits an individual from engaging in pro-social behavior.
- The effect has been replicated scores of times using many different dependent measures:
  - Fire in another room
  - Someone feigning a seizure
  - A knock heard on the door (non-emergency)
  - A damsel in distress

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**Explanations**  
Latané and Nida, 1981

- **Audience inhibition**: The bystander fears negative evaluation by others for intervening, e.g., situation may not be an emergency.
- **Social influence**: The bystander infers from the inaction of others that inaction is the appropriate behavior.
- **Diffusion of responsibility**: The presence of others offloads some of the responsibility onto them. (Not a division of responsibility.)
Our Motivations

- Most Bystander studies assume:
  - The decision to help is dichotomous.
  - The welfare of the recipient saturates with one act of help.
- Does the Bystander Effect hold when helping behavior is continuous and the recipient’s welfare increases with the amount of help received?
- Can we use the Bystander Effect to probe the proximate motivations underlying pro-social behavior? Is reputation concern a sufficient explanation of pro-social behavior in the lab?

Study 1: Laboratory

- **Dictator Game:** The dictator is given a sum of money and can transfer any amount to a recipient, who starts with nothing.

- **Conditions:** 1 Recipient may receive money from 1, 2, or 3 Dictators. Transfers are simultaneous, one-shot, and anonymous.

Study 1

- The endowments varied across conditions, holding the average welfare per group constant at $12.
- If the Bystander Effect holds, recipients should earn less money as the number of dictators increases.
- If reputation concern explains pro-sociality, recipients should earn as much or more money as the number of dictators increases.
CASSEL
California Social Science Experimental Laboratory

Study 1: Descriptive Statistics

- N = 198 subjects (110 females, 88 males)
- Mean age = 20.3 (SD = 3.1)
- For each condition, we had 22 groups, comprised of 1 recipient and 1, 2, or 3 dictators

<table>
<thead>
<tr>
<th>Condition</th>
<th># Dictators</th>
<th># Recipients</th>
</tr>
</thead>
<tbody>
<tr>
<td>d1</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>d2</td>
<td>44</td>
<td>22</td>
</tr>
<tr>
<td>d3</td>
<td>66</td>
<td>22</td>
</tr>
</tbody>
</table>

Mean payoff
d1 = $6.68
d2 = $4.18
d3 = $4.22

Kolmogorov-Smirnov
d1 vs d2: D=0.45, p=0.02
d1 vs d3: D=0.41, p=0.05
d2 vs d3: D=0.23, p=0.62

Effect Size
Pr(d1>d2) = 0.64
Pr(d1>d3) = 0.64
Pr(d2>d3) = 0.52

Recipient Payoffs

Recipient Expectations

Recipients were paid a $3 bonus if they accurately predicted how much they would receive.

4 out of 66 Recipients earned the bonus.

Mean Expectations
d1: $4.86
d2: $4.04
d3: $4.54

Kolmogorov-Smirnov
d1 vs d2: D=0.23, p=0.62
d1 vs d3: D=0.18, p=0.86
d2 vs d3: D=0.23, p=0.62
Study 1: Summary

- The Bystander Effect holds. Recipients go home with substantially less money when there are 2 or 3 dictators as opposed to when there is 1.
- This apparent diffusion of responsibility is difficult to explain with one version of the tacit reputation concern explanation.
- A different reputation concern explanation: in groups (e.g., 2 or 3 dictators), actions are not attributable to individuals — “safety in numbers.”
- What happens when talk is cheap? Do we at least want to seem altruistic?
Study 2: Online

Study 2: Descriptive Statistics

- N = 215 subjects (157 females, 58 males)
- Well-represented age distribution from 18–64
- For each condition, there were only Dictators, no Recipients

<table>
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<tr>
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<tbody>
<tr>
<td>d1</td>
<td>40</td>
</tr>
<tr>
<td>d2</td>
<td>79</td>
</tr>
<tr>
<td>d3</td>
<td>96</td>
</tr>
</tbody>
</table>

Study 2

- Replication of Study 1 with an online subject population.
- Conditions: Subjects were assigned the role of Dictator. They were either alone, with one other Dictator, or two other Dictators. (There were no Recipients.)
- No compensation – hypothetical offers.

Dictator Behavior

Mean Transfers (Online)
- d1: $9.08/$12 = 0.76
- d2: $6.59/$6 = 1.10
- d3: $4.34/$4 = 1.09

Mean Transfers (Lab)
- d1: $6.68/$12 = 0.56
- d2: $2.09/$6 = 0.35
- d3: $1.41/$4 = 0.35

Black bars represent “equal” transfers
**Sex Difference**

![Box plot showing sex difference in fraction of equal transfer amount](image)

- Y-axis truncated at 2.0
- Mean fractions “equal” offers:
  - Females = 1.09
  - Males = 0.87
- Kolmogorov-Smirnov
  - $D=0.29, p=0.016$
- Effect Size
  - $Pr(\text{Female}>\text{Male}) = 0.59$
- This pattern holds across conditions

**Study 2: Summary**

- With hypothetical stakes, there is no diffusion of responsibility suggesting a strong concern for appearing altruistic.
- With hypothetical stakes, there is an infusion of responsibility.
  - Recipients in the 2 or 3 Dictator condition would have earned 50% more money compared to the 1 Dictator condition.
  - More Dictators transfer $0 in the 1 Dictator condition.
  - More Dictators transfer more than the “equal” amount in the 2 and 3 Dictator conditions.
- Females were much less likely than males to offer nothing in all three conditions.

**Conclusion**

- In a laboratory study with monetary stakes, we find a strong diffusion of responsibility. Recipients earned 1/3 less with multiple dictators, even though the average welfare was held constant.
- In an online replication with hypothetical stakes, we find an infusion of responsibility. Recipients earned 1.5 times as much with multiple dictators.
- In the online study, the modal offer across conditions was the “equal” offer.

**Discussion**

- If reputation concern explains pro-sociality in the standard dictator game, then the presence of 1 or 2 additional dictators eliminates this concern – a “safety in numbers” phenomenon.
- How do we test this “safety in numbers” hypothesis?
  - Dictators “negotiate” a mutually acceptable transfer to a recipient.
  - A “strategy method” in which one dictator makes transfers for all possible offers from the other dictator.