The bystander effect in a multi-player dictator game

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Summary

Objectives:
- Document the bystander effect in a behavioral economics game, extending it to a continuous measure of helping behavior.
- Determine whether uncertainty contributes to the effect.

Introduction:
In the bystander effect (1), the likelihood that someone helps a victim (e.g., calling the police upon witnessing a crime) decreases as the number of potential helpers increases. Most studies assume that helping is a dichotomous decision (e.g., to call the police or not) and that the victim’s welfare decreases with one less helper (e.g., one phone call is insufficient). In Study 1, we modified the dictator game (2) from behavioral economics in order to extend the bystander effect to a continuous measure of helping behavior.

Method:
In Study 2, there was one dictator and one recipient. Dictators were given $18 to distribute to the recipient, who could endow a norm of fairness. This suggests caution when using dominated, especially when there were multiple stakes, differed markedly (Figures 2, 3, and 4). In the lab, self-interest ‘e.g., to call the police or not) contributes to the bystander effect in a multi-player dictator game.

Results:
In Study 1, we find a strong bystander effect (1) on transfers to a single recipient. In an online replication, subjects participated in a hypothetical game for no stakes. In Study 2, we find a strong bystander effect (1) on transfers to a single recipient. In an online replication, subjects participated in a hypothetical game for no stakes. In Study 3, we find a strong bystander effect (1) on transfers to a single recipient. In an online replication, subjects participated in a hypothetical game for no stakes.

Discussion:
In all lab studies, subjects were asked to predict how much they would go home with and paid a percentage of how much they predicted. Few earned the bonus. In Studies 2 and 3, the model prediction was $0; in the Study 3, it was $12.

With communication eliminating uncertainty, dictators still coordinated on low transfers.

Recipient Welfare

While bystanders are less likely to help as their numbers increase, in most bystander studies, the probability that victims get help remains fixed (4). In our studies, however, transfers decreased as the number of dictators increased such that recipients earned 50¢ more when there was one dictator looking out for their welfare compared to two or three (Table 3).

References:

Study 1: Dictator Game

Hypothesis: According to the bystander effect, transfers should decrease as the number of dictators increases.

We varied the number of dictators (1, 2, or 3) simultaneously transferring to a single recipient (all conditions, Figure 1, top right corner of the poster). In an online replication, subjects participated in a hypothetical game for no stakes.

Study 2: Strategy Method

Hypothesis: If the bystander effect is caused by uncertainty, then second transfers should be conditioned on first transfers when decisions are made in sequence.

Two dictators transferred to a single recipient (middle condition, Figure 1, top right corner of the poster). Dictators made two binding decisions: as a proposer, indicating how much they want to transfer to the recipient as a responder, indicating how much they want to transfer to the recipient for every possible transfer amount from $0 to $18 (counter-balanced within groups). For each group, one dictator’s proposal and the other’s response were randomly chosen. In an online replication, subjects participated in a hypothetical game for no stakes.

Study 3: Bargaining Game

Hypothesis: If the bystander effect is caused by uncertainty, then allowing dictators to communicate should alleviate the effect.

Two dictators transferred to a single recipient (middle condition, Figure 1, top right corner of the poster). Dictators made two binding decisions: as a proposer, indicating how much they want to transfer to the recipient as a responder, indicating how much they want to transfer to the recipient for every possible transfer amount from $0 to $18 (counter-balanced within groups). For each group, one dictator’s proposal and the other’s response were randomly chosen. In an online replication, subjects participated in a hypothetical game for no stakes.

Tables:

<table>
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<tr>
<th>Condition</th>
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Figure 1: Experimental framework. Dictators (grey) transfer money to respondents (white). In an online replication, both dictators must thus transfer money to the dictator (equal). All groups go home with $12. With one dictator, the "equal" transfer amount is $12; with two, it is $6; and with three is $4. In Study 1, all dictator responses were randomly chosen. In Study 2, the conditions are randomized. In Study 3, we used only the 3 dictator condition.

Figure 2: Distributions of dictator transfers in the 1, 2, and 3 dictator conditions, respectively. The grey bars represent the proportion of transfers. The blue lines represent the median transfer from each dictator. The dotted lines represent the mean transfer from each dictator. The blue lines represent the median transfer from each dictator. The dotted lines represent the mean transfer from each dictator.

Figure 3: Distributions of dictator transfers in the laboratory and online versions. The grey bars represent the proportion of transfers. The blue lines represent the median transfer from each dictator. The dotted lines represent the mean transfer from each dictator.

Figure 4: Table of estimated mean transfers and 95% confidence intervals. The grey bars represent the proportion of transfers. The blue lines represent the median transfer from each dictator. The dotted lines represent the mean transfer from each dictator.

Table 1: Comparison of three hypothetical dictator games. The Akita Information Criteria (AIC) indicates the number of dependent variables in each model accounting for the number of parameters in the underlying model. The AIC weights the estimated probability of existence in favor of each model.

Table 2: Table of estimated mean transfers and 95% confidence intervals. The grey bars represent the proportion of transfers. Transfers were roughly half the "equal" amount with 1 dictator and one third with 2 or 3 dictators.

Table 3: Bootstrapping simulations to estimate means and 95% CIs for recipient payoffs. Recipient payoffs range from 0 to 12. In Study 1, we sampled 57 sets of dictator proposals with replacement, computed the mean statistic for each sampling and sampled 27 recipient outcomes.