Trust Between Groups with Biased Monitoring

Overview

Study Information

Title

Provide the working title of your study. It is helpful if this is the same title that you submit for publication of your final manuscript, but it is not a requirement.

Trust Between Groups with Biased Monitoring

Authors

The author who submits the preregistration is the recipient of the award money and must also be an author of the published manuscript. Additional authors may be added or removed at any time.

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Research Questions

Please list each research question included in this study.

Theories of monitoring indicate that bias among monitors will affect the strategies of those being monitored. We derive predicted behavior for first movers in a dyadic trust game.

We ask whether the presence or absence of bias in reporting by third-party monitors affect levels of trust between counterparts in a trust game.

Prior research using trust games shows that the presence of third parties who observe the behavior of counterparts increases trust. We ask how the information provided by a third party under separate conditions of bias and non-bias creates uncertainty about others' behaviors and changes the credibility of information from a third party, which in turn affects trust between counterparts.

Hypotheses

For each of the research questions listed in the previous section, provide one or multiple specific and testable hypotheses. Please state if the hypotheses are directional or non-directional. If directional, state the direction. A predicted effect is also appropriate here.

1. An unbiased monitor promotes higher levels of trust between counterparts than a biased monitor or no monitor.

2. Levels of trust will not differ in the presence of a biased monitor or no monitor.
3. An unbiased monitor will promote higher levels of reciprocity than a biased monitor.

4. A biased monitor will promote higher levels of reciprocity than no monitor.

5. A potential moderator is that individuals who lose in a contest game prior to playing a trust game will show lower levels of trust in all conditions in comparison to individuals who win in the prior game. This is included because we expect that the initial levels of trust between competing groups is affected by their between group experiences.

Sampling Plan

Existing Data

Preregistration is designed to make clear the distinction between confirmatory tests, specified prior to seeing the data, and exploratory analyses conducted after observing the data. Therefore, creating a research plan in which existing data will be used presents unique challenges. Please select the

description that best describes your situation. Please do not hesitate to contact us if you have questions about how to answer this question (prereg@cos.io).

- Registration prior to analysis of the data

Explanation of existing data

If you indicate that you will be using some data that already exist in this study, please describe the steps you have taken to assure that you are unaware of any patterns or summary statistics in the data. This may include an explanation of how access to the data has been limited, who has observed the data, or how you have avoided observing any analysis of the specific data you will use in your study. The purpose of this question is to assure that the line between confirmatory and exploratory analysis is clear.

At the time of this registration, we are currently conducting the experiment on human subjects in a lab. Data collection is ongoing. We have used data from a pilot study to conduct a pre-analysis and build code in R that we will use to test our hypotheses.

Data collection procedures

Participants are recruited from undergraduates at Rice University who have volunteered to be
part of the Behavioral Research Laboratory subject pool. Participants will be paid a show-up fee of
$5.00, and they can earn additional money based on their decisions in the experiment. I expect to
pay subjects $15.00-$25.00 for approximately one hour of participation. Participants must be
undergraduate students at Rice University.

See the attached screen shots for this study.

(optional)

- Jo Screenshots_Sept_27_2018.pdf
- Protocol_TRJO_Sept_28_2018.pdf

Sample size

Describe the sample size of your study. How many units will be analyzed in the study? This could be the number of people, birds, classrooms, plots, interactions, or countries included. If the units are not individuals, then describe the size requirements for each unit. If you are using a clustered or multilevel design, how many units are you collecting at each level of the analysis?

The target sample size is 144.

Sample size rationale

This could include a power analysis or an arbitrary constraint such as time, money, or personnel.

We used code in R provided by powerandsamplesize.com to identify the proper sample size to obtain .9 power to detect a difference between a mean of 5 and 3.25 with standard deviations set at 2 and a sampling ratio of 1.

Stopping rule

If your data collection procedures do not give you full control over your exact sample size, specify how you will decide when to terminate your data collection.

We intend to have balance across our treatments. Random assignment is by session. Random assignment is blind to the experimenter (it is handled internally by the computer program). At the end of all planned sessions we will check to make certain there is balance. If not then we will add additional session(s).

Variables

Manipulated variables

Subjects play a game where the determine whether and how many experimental currency units (ECUs) to exchange with a new, anonymous counterpart to which they are assigned across four rounds. We create three different conditions. In each condition,

there is a chance that ECUs are lost during any exchange. In one condition, a monitor (an automaton programmed within the computer) provides an honest report to subjects regarding what happened during the exchange (reports contain whether money was returned by a counterpart and how much was returned). In another condition, a monitor similarly provides a report but with a predetermined probability of falsely reporting whether ECUs sent were lost or not. The third condition is a baseline condition in which no reporting from a monitor occurs. Thus, we manipulated the existence of a monitor and the type of reporting from the monitor (i.e. always honest or sometimes dishonest). Consequently the manipulations are: (1) a biased automaton; (2) an unbiased automaton; and (3) no automaton.

(optional)

- No files selected

Measured variables

The two outcome variables will be the amount of ECUs provided by first movers and the amount returned by second movers per round. Additionally, for our ancillary expectations, we will evaluate whether outcomes from a contest game that subjects play prior to the trust game moderate levels of trust across conditions. The purpose of the contest game is to create in-group cohesion after subjects are assigned to their respective groups of first and second movers. The variable of interest from this game will measure whether subjects belong to a group that lost or won the game.

(optional)

- No files selected

Indices

1. One test involves the mean level of trust across four trials (Sum of 1st mover ECUs sent across trials)/4

2. For reciprocators we will calculate the proportion of ECUs returned to the 1st mover. This is given by: (ECUs returned to 1st mover)/(ECUs sent by 1st mover times 3). We will then calculate the mean proportion across four trials for that reciprocator.

(optional)

- No files selected

Design Plan

Study type

Please check one of the following statements

- Experiment - A researcher randomly assigns treatments to study subjects, this includes field or lab experiments. This is also known as an intervention experiment and includes randomized controlled trials.

Blinding

Blinding describes who is aware of the experimental manipulations within a study. Mark all that apply.

- For studies that involve human subjects, they will not know the treatment group to which they have been assigned.

Study design

We have a three-group design with three treatments (unbiased monitor, biased monitor, no monitor). It has repreated measures and is a between subjects design.

(optional)

- No files selected

Randomization

If you are doing a randomized study, how will you randomize, and at what level?

Subjects are part of an 8 person session (often two sessions were run simultaneously). Sessions were randomly assigned to one of the three monitoring conditions by the computer program. Within a session subjects were assigned to one of two distinct groups based on how quickly they responded to a dot estimation task. These groups were then randomized to be either the 1st mover or 2nd mover. Subjects in the group, once assigned their role, kept that role throughout the experiment.

Analysis Plan

Statistical models

We will conduct difference pairwise t-tests across each condition separately for both first movers and second movers. The outcome measure for first movers will be a measure of average trust for the first hypothesis. The outcome measure for second movers will be a measure of average reciprocity of trust for the second hypothesis. Additionally, we will use multiple regression to analyze the moderating effect of losing the contest game across condition on levels of trust and reciprocity. Also, we will conduct an exploratory analysis of time trends of trust within each condition (i.e. whether trust declines across rounds and at what rate).

(optional)

- No files selected

Transformations

If you plan on transforming, centering, recoding the data, or will require a coding scheme for categorical variables, please describe that process.

N/A

Follow-up analyses

If not specified previously, will you be conducting any confirmatory analyses to follow up on effects in your statistical model, such as subgroup analyses, pairwise or complex contrasts, or follow-up tests from interactions? Remember that any analyses not specified in this research plan must be noted as exploratory.

N/A

Inference criteria

What criteria will you use to make inferences? Please describe the information you'll use (e.g. specify the p-values, Bayes factors, specific model fit indices), as well as cut-off criterion, where appropriate. Will you be using one or two tailed tests for each of your analyses? If you are comparing multiple conditions or testing multiple hypotheses, will you account for this?

We will use the standard p-values for which $p<0.05$ for the t-tests. Note that several of the ttests have explicit one-tailed, directional predictions. The same will be true for all regressions.

Data exclusion

How will you determine which data points or samples (if any) to exclude from your analyses? How will outliers be handled?

N/A

Missing data

How will you deal with incomplete or missing data?

If a subject does not complete the experiment, that subject will not be included in the analysis. Nor will the session data for the study be included. One subject leaving in the middle of an experiment will cause the full experiment to be cancelled. This is due to the randomization routines used for matching the subjects.

Exploratory analysis

If you plan to explore your data set to look for unexpected differences or relationships, you may describe those tests here. An exploratory test is any test where a prediction is not made up front, or there are multiple possible tests that you are going to use. A statistically significant finding in an exploratory test is a great way to form a new confirmatory hypothesis, which could be registered at a later time. (optional)

We are unsure about the moderating effect of each subject's experience in the contest game. We will fully explore this effect. We are also sensitve to the different bargaining strategies used by males and females. We will collect these data and may incorporate it for purely exploratory reasons.

Scripts

Upload an analysis script with clear comments

This optional step is helpful in order to create a process that is completely transparent and increase the likelihood that your analysis can be replicated. We recommend that you run the code on a simulated dataset in order to check that it will run without errors. (optional)

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Other

Other

If there is any additional information that you feel needs to be included in your preregistration, please enter it here. (optional)