Iterated Evacuation Game Experiment (02.01.21) (#57189)

1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What’s the main question being asked or hypothesis being tested in this study?
A previous study shows that people embedded in a communication network are likely to procrastinate in response to uncertain "danger," compared to those isolated, in one-shot deals. Here we ask whether social networks help people to improve the accuracy in their emergency decision-making across time. We also examine whether the effects of individual responsiveness and network structure on the improvement in collective performance.

3) Describe the key dependent variable(s) specifying how they will be measured.
Participants will play an economic game simulating an unpredictable situation ("evacuation game") with the same group of people over a series of rounds, facing repeated "disasters." In each round of the game, they will have to decide whether to evacuate (leave the game) from an impending "disaster" that would wipe out subjects' endowment unless they evacuate in time. We will measure the rate of correct respondence to "disaster" (i.e., the rate of subjects who has evacuated when a "disaster" materializes; otherwise, the rate of those who do not evacuate when a disaster does not materialize) at the end of the session round to measure the collective performance in response to a "disaster."

4) How many and which conditions will participants be assigned to?
The experiment will have 12 treatment combinations of group structure and "disaster" context: 3 types of group conditions (independent, static networks, and dynamic networks) crossed with 4 types of disaster patterns (always "disasters," always no "disasters," and the two patterns of alternating "disasters"). Participants will be randomly assigned to one of the 12 conditions.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
The main analysis will be conducted at group level with the fraction of evacuated subjects across time. We will test the difference in corrective performance between group-structure conditions with t-test. In addition, we will confirm the consistency of results with a comprehensive analysis using a generalized linear mixed model.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
After the game tutorial, participants will be assessed for their comprehension of the game rules and payment structure using multiple-choice questions. If they failed to select the correct answer to any of the questions, they will be dropped from the game. If participants do not show their preparation by clicking a “Ready” button just before the game starts, they will be dropped. The games will require an exact number of participants. If the participants who successfully click the “Ready” button are more than the required number, surplus participants, who will be randomly selected, will be dropped from the game. If the number of qualified participants is less than the required number, the game will not start. If the game stops with some technological breakdowns or more than 25% of game participants or an selected informed player stops playing in the middle of the game, we will exclude the data for analysis.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.
We will conduct 120 sessions with roughly 1,920 participants whom we will recruit on Amazon Mechanical Turk. The study will have 12 conditions. Each condition will have 10 sessions. Each session will consist of a group of 13-16 participants.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)
To study the structural effect, we will randomly select an subject per group, give the subject true information about "disaster," and keep the same informed subject over the session rounds in this experiment.