

Inferring Joint Commitment from Observed Coordination-Parallel (#270680)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
 It has 3 authors.

Pre-registered on:

2026/01/29 09:00 (PT)

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?

This study investigates how people infer joint commitment from observing repeated coordination between two agents. Participants observe two agents (farmers) making spatial choices by harvesting berries in a shared grid environment. The task implements a payoff structure analogous to a Stag Hunt game, with coordination defined as the agents harvesting different trees. Successful coordination therefore requires the agents to act separately rather than converge on the same option. We test the following hypotheses:

H1a (Commitment inference-repetition): More repetitions of successful coordination lead to stronger inferences of joint commitment, as measured by perceived agreement, and perceived commitment.

H1b (Normative reactions-repetition): More repetitions of successful coordination lead to stronger normative reactions when one agent deviates, as measured by ratings of anger and guilt.

H2a (Commitment inference-dependency): Interdependent payoff structure leads to stronger inferences of joint commitment than independent payoff structure, as measured by perceived agreement, and perceived commitment.

H2b (Normative reactions-dependency): Interdependent payoff structure leads to stronger normative reactions when one agent deviates, as measured by ratings of anger and guilt.

H3 (interaction): The effect of repetition on commitment inference and normative reactions is stronger when the payoff structure is interdependent than when the payoff structure is independent.

3) Describe the key dependent variable(s) specifying how they will be measured.

Dependent variables will be measured on 0-100 slider scales after participants observe the critical deviation trial.

Our primary commitment measures are as follows

Agreement: "To what extent do you think Yellow and Purple had an unspoken agreement to each travel to the farther tree?" (0 = not at all, 100 = completely)

Commitment: "To what extent was purple_text and yellow_text committed to each traveling to the farther tree?" (0 = not at all, 100 = completely)

Additional normative reaction measures are as follows:

Anger: "How angry would Yellow feel that Purple went to the closer tree?" (0 = not at all angry, 100 = extremely angry)

Guilt: "How guilty would Purple feel about going to the closer tree?" (0 = not at all guilty, 100 = extremely guilty)

4) How many and which conditions will participants be assigned to?

This study uses a 2 x 2 between-subjects factorial design. The manipulated factors are (a) repetition of successful coordination (low: 2 rounds; high: 6 rounds) and (b) interdependency (interdependent vs. independent). Participants are randomly assigned to one of the four conditions.

Participants are told that they are berry retailers observing two farmers, Yellow and Purple, harvesting berries on a shared farm. The farm is represented as a grid, with the two farmers located at diagonal corners. Two berry trees are located on the farm: one closer to Yellow and one closer to Purple. The tree closer to Yellow yields 5 yellow berries and 8 purple berries, whereas the tree closer to Purple yields 8 yellow berries and 5 purple berries.

If both farmers harvest the tree farther from their own location, each receives 8 berries. If both farmers harvest the tree closer to their own location, each receives 5 berries. Efficient coordination therefore requires the farmers to harvest different trees.

In the interdependent condition, if Purple harvests the tree closer to their location, Purple receives 5 berries, and this action interferes with Yellow's harvest. As a result, Yellow receives only 1 berry. In the independent condition, Purple's harvesting decision does not affect Yellow's outcome, and Yellow continues to receive 8 berries regardless of Purple's choice.

Thus, the payoff structure in the interdependent condition corresponds to a stag hunt game in which payoff-dominant coordination requires the farmers to harvest the further trees from their own location separately.

During an observation phase, participants will observe either 2 rounds (low repetition) or 6 rounds (high repetition) in which both farmers harvest the farther tree, and each receives 8 berries.

After the observation phase, participants will complete a critical trial. In this trial, Purple deviates by harvesting the closer tree and receives 5 berries. Yellow continues to harvest the farther tree and receives either 1 berry (interdependent condition) or 8 berries (independent condition).

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

For each dependent variable, we will conduct a two-way analysis of variance (ANOVA) for each dependent variable:

agreement ~ repetition_condition * interdependency

commitment ~ repetition_condition * interdependency

anger ~ repetition_condition * interdependency

guilt ~ repetition_condition * interdependency

If the interaction is significant, simple effects will be tested using planned contrasts. If the interaction is not significant, main effects will be reported. We will report means, standard deviations, F-statistics, p-values, partial eta squared, and 95% confidence intervals for main effects and the interaction.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

We will exclude participants who:

- Fail a simple attention check;
- Complete the study within 2 minutes;
- Fail bot detection test;

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 recruit $N = 400$ participants (100 per condition) from Prolific. Participants will be US-based, English-speaking, and have a $\geq 95\%$ approval rate. This sample size provides approximately 80% power ($\alpha = .05$) to detect a moderate interaction effect ($f \approx 0.20$) in a 2×2 between-subjects ANOVA.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

Nothing else to pre-register.