

Inferring Joint Commitment from Observed Coordination (#269209)

Author(s)

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

Pre-registered on:

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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. Prior work using vignettes has shown that repetition and social dependency increases perceived commitment and normative reactions to deviations from the perceived commitment. Here, we extend these findings to a gridworld paradigm where participants observe two agents (farmers) making spatial choices with an explicit payoff structure modeled either as a Stag Hunt game or coordination with identical payoff. In a Stag Hunt, coordinating on a risky option yields the highest payoff for both agents, but only if both coordinate; unilateral coordination is costly. In the coordination with identical payoff, agents receive identical payoff independent of the others' action. 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 harvest the center tree together?" (0 = not at all, 100 = completely)

Commitment: "To what extent was Purple committed to harvesting the center tree with Yellow?" (0 = not at all, 100 = completely)

Additional normative reaction measures are as follows:

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

Guilt: "How guilty would Purple feel about going to a different 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 factorial between-subjects design. We manipulated the number of repetitions of successful coordination: low repetition (2 rounds) vs. high repetition (6 rounds); and interdependency: interdependent vs. independent. Participants will be randomly assigned to one of the four conditions.

Participants are told they are a berry retailer observing two farmers (Yellow and Purple) who share a farm. They learn about the payoff structure. In the interdependent conditions the payoff structure is modeled as a Stag Hunt game: the center tree yields 8 berries per farmer but only if both farmers harvest it together: the branches are too high for one farmer to reach alone. If only one farmer goes to the center tree, they get just 1 berry. The corner trees yield 5 berries and can be harvested by one farmer alone. In the independent condition, the center tree yields 8 berries per farmer independent of whether they harvest together or alone. The corner trees yield 5 berries and can be harvested by one farmer alone.

In an observation phase, participants observe 2 (low repetition) or 6 (high repetition) rounds where both farmers go to the center tree and each receives 8 berries.

Then we present the critical trial, where Purple deviates to a corner tree (receives 5 berries). Yellow goes to the center tree expecting Purple (receives 1 berry in the interdependent condition vs., 8 berries in the 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 two-way 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.