

The Impact of Resource Scarcity on Prosocial Preferences

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ABSTRACT

An emerging explanation of poverty focuses on the attentional demands induced by a scarcity mindset and the effect of such demands on subsequent decision making. We build on this work by investigating the impact of resource scarcity on cooperation behavior. Our initial findings suggest that relative to control participants, those experiencing scarcity are more likely to cooperate with each other. A second study, however, suggests that the observed increase in cooperation among resource-scarce participants, may be due in large part to sympathy they hold for their partner.

INTRODUCTION

- **Behavior predicted by existing account of scarcity**
 - **Bandwidth Account:** Mechanism underlying scarcity shifts and narrows attention on areas of shortage and depletes cognitive resources (e.g. Shah *et al.*, 2012; Mani *et al.*, 2013).
 - **Predicted behavior:** Low levels of cooperation among individuals in a scarcity mindset.
- **Observations of real world behavior**
 - **Achievement of great cooperation:** Behavior such as peaceful sharing in times of food scarcity (Gurven, 2004), and higher donation rates among poor compared to America's wealthiest (Piff *et al.*, 2010) suggest that really, great cooperation occurs.
 - **Predicted behavior:** High levels of cooperation among individuals in a scarcity mindset.

Research Aim

In resource scarce environments, people achieve surprisingly high levels of cooperation. Our aim to elucidate the mechanism underlying this behavior. We suggest that scarcity increases the propensity to cooperate by changing the beliefs and expectations about other agents.

METHODS

Study 1

- **Hypothesis:** Compared to those in control, participants in Scarcity are more likely to cooperate.
 - N = 626 MTurk workers
 - Completed scarcity manipulation, five rounds of an indefinite IPD, Social Value Orientation (SVO) scale (Murphy *et al.* 2011)

Study 2

- **Hypothesis:** If our effect is driven by sympathy held for scarce participants, when the emotional aspect of the scenario is removed, cooperation rates in scarcity should not be greater than in control.
 - N = 626 MTurk workers
 - Same procedure as Study 1

EXPERIMENTAL DESIGN

Scarcity Manipulation (Roux *et al.*, 2015)

- **Scarcity condition:** Recalled times when they felt like they didn't have enough of something
- **Control condition:** Recalled events from the past week

Game

- Hypothetical, simultaneous, and indefinite IPD
- Player B was programmed to play tit-for-tat

You: Player A

	Option Y	Option Z
Option Y (cooperate)	You: 50c Player B: 50c	You: 75c Player B: 0c
Option Z (defect)	You: 0c Player B: 75c	You: 25c Player B: 25c

Fig. 1. Payoff matrix.

Player information

- Hypothetical interaction
- Play an indefinite number of rounds with the same partner who just completed the same task they did
- Were shown the scenario that their partner had written:

Scarcity Condition: *I was lacking enough funds and even though I tried my very best to make enough money to be able to pay my rent, I simply did not have enough money when it was time for the rent to be due. It was embarrassing, scary, and I was ashamed of myself.*

- The last, emotionally laden, sentence was removed in Study 2

RESULTS

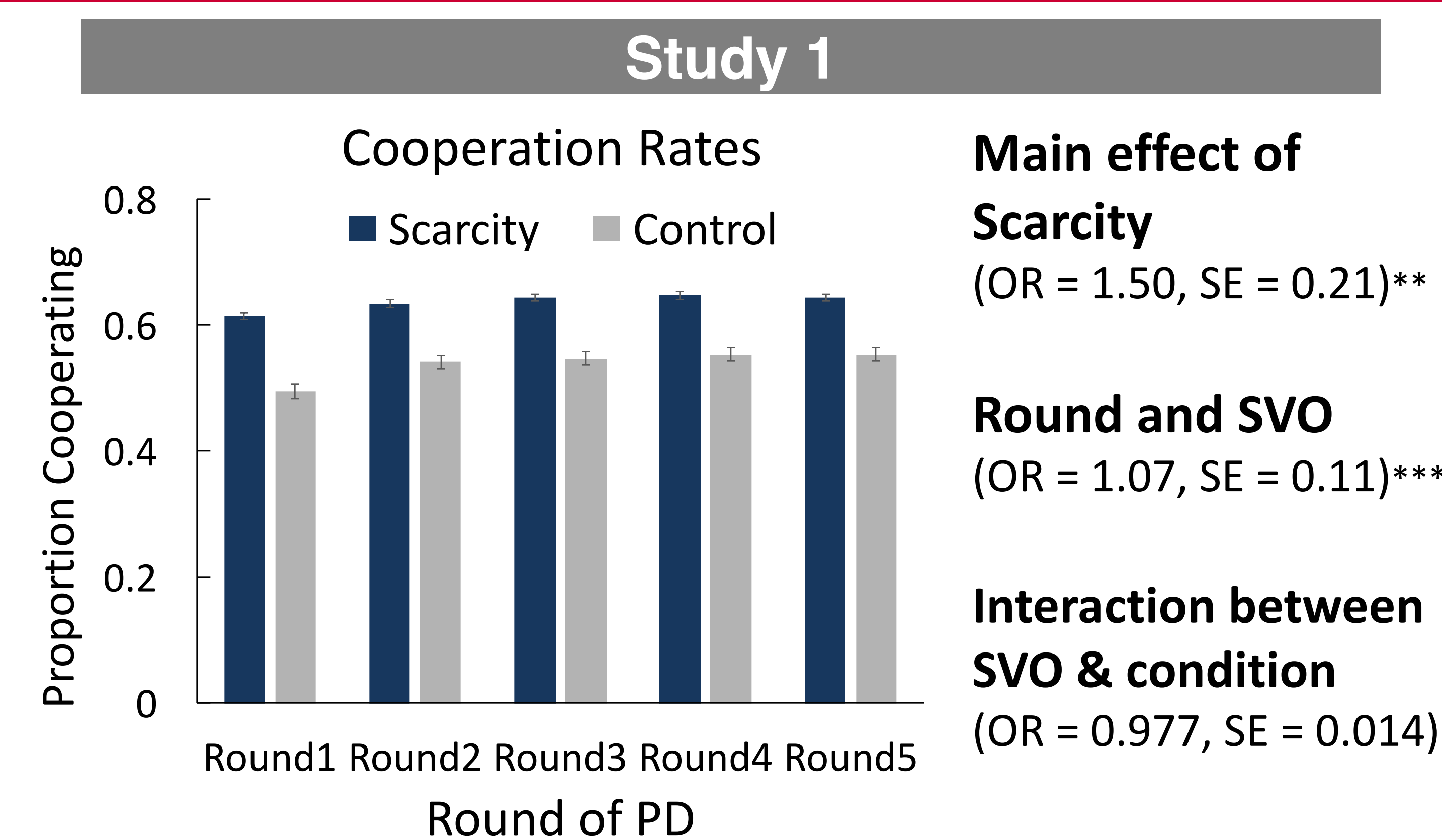
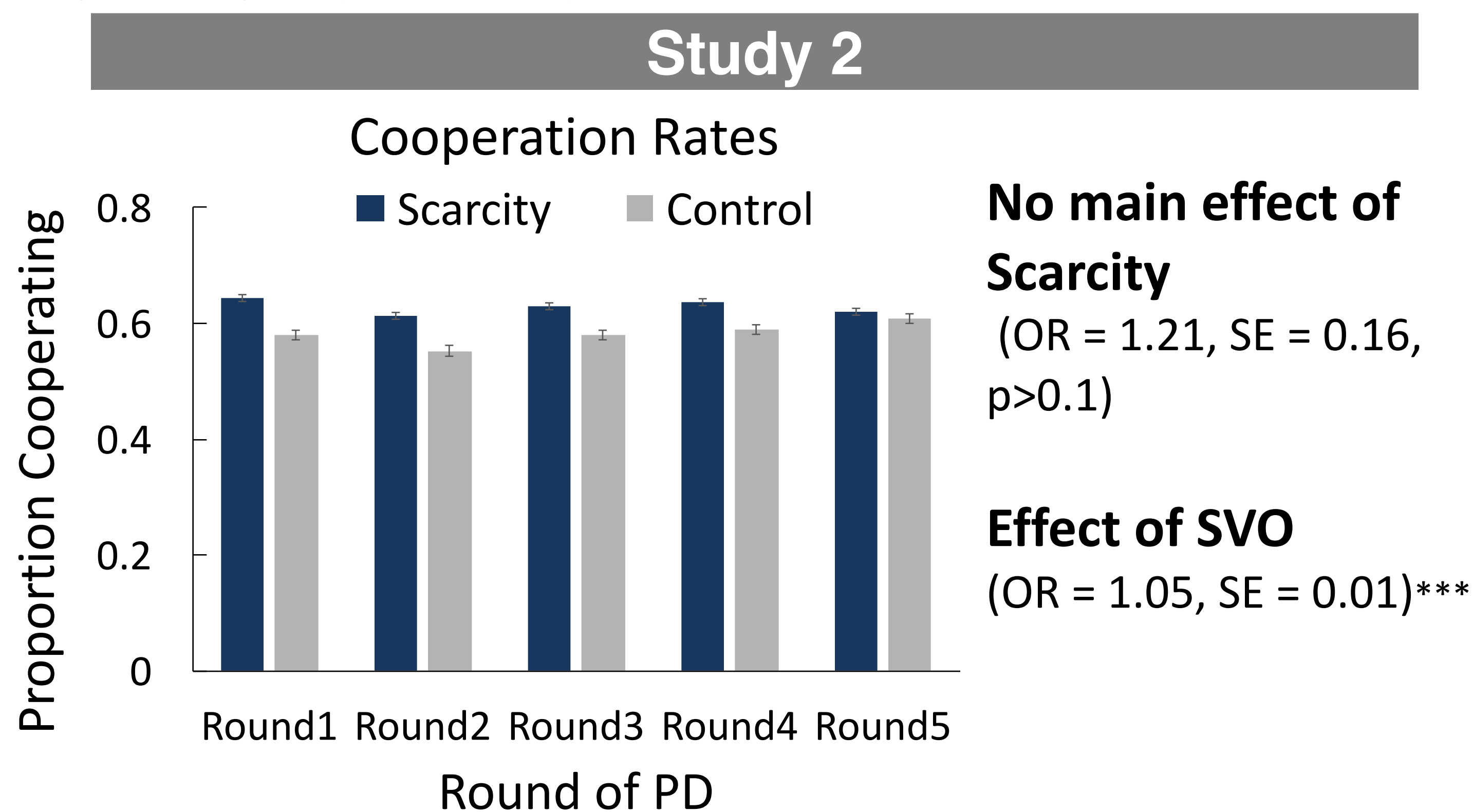


Fig. 2. Average cooperation rates per round.



ANALYSIS

Repeated measures logistic regressions, regressing on whether the participant cooperated or defected

Meta Analysis

To assess whether removing the emotional sentence significantly reduced the effect of scarcity, we regressed condition, study and the interaction on cooperation decisions.

- When SVO is included as a predictor, there is a marginally significant interaction between condition and study (OR = 0.7, SE = 0.14, p = 0.7).

DISCUSSION

- **Aim of the present research:** To extend current work on scarcity to the domain of strategic interactions
 - **Study 1:** We showed that participants in a scarcity mindset were significantly more likely than control participants to cooperate in an indefinite IPD. These findings run in contrast to the low cooperation predicted by the bandwidth account of scarcity.
 - **Study 2:** However, when we removed the emotionally laden sentence from the information about the scarce partner, the effect significantly decreased.
- These findings, in conjunction with the results of our meta analysis, suggest that the observed increase in cooperation among scarce participants is not scarcity driven at all but instead, is due to an emotional reaction or sympathy towards the partner with whom the participant is matched.
- **Scarcity and strategic interactions**
 - So far all of the literature has focused on how scarcity frames individual behavior but the effect of scarcity should extend beyond individuals and should affect how people interact.
 - This intuition is supported by the behavior and structure of poor communities.

Outstanding Questions

- Should scarcity have an impact on cooperation? Or other kinds of strategic interactions? What is the mechanism by which this occurs?

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