Letters on Evolutionary Behavioral Science, Vol. 6

Supplemental Information

An Individual Difference in Betrayal Aversion: Prosociality Predicts More Risky Choices in Social But Not Natural Domains

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Inventory of Supplemental Information

Pre-experiment Method & Results

For the Faith Game, a pre-experiment was conducted, and a database of dictator game responses was created.

Participants. Sixty-six undergraduates, who did not take part in the main study, participated in the pre-experiment. For each experimental session, 8–10 students were invited to the laboratory.

Dictator game. During each trial, participants were randomly paired and assigned either the role of a proposer or responder. Proposers were given 1,200 or 3,000 JPY and decided whether or not they would share money with the responder. When the proposer chose to share, both the proposer and the responder received half of the sum (600 or 1,500 JPY each). When the proposer chose not to share, the proposer received all (1,200 or 3,000 JPY), and the responder received nothing. Each role by each stake was assigned to each participant three times (12 trials in total). We used z-Tree for the experimental program (Fischbacher, 2007).

Procedure. Participants were seated in separate cubicles, each with a computer. Anonymity was preserved. After completing informed consent forms, participants were instructed that their rewards were contingent on the outcome of their decisions, one of which would be randomly selected. Participants were then given specific instructions and repeatedly played the dictator game.

Results. The proportion of participants choosing to share was 0.34 when the resource was 1,200 JPY and 0.37 when the resource was 3,000 JPY. Data obtained from this pre-experiment was then used during the Faith Game of the main experiment.

References

Fischbacher, U. (2007). Z-Tree: Zurich toolbox for ready-made economic experiments. *Experimental Economics, 10(2),* 171-178. (doi: 10.1007/s10683-006-9159-4)

The Pattern of Risky Choices and Robustness of Betrayal Aversion

The proportion of participants choosing risky options as a function of risk type and safe option are shown in Figure S1. Since the ratio of choosing risky options in all conditions drops as the size of the safe option increases, the proportion of choosing the risky option during each condition was calculated and used as the dependent variables.

Figure S1 suggests that if the stake and the odds are the same, participants were more likely to choose risky options during the Gambling Game as compared to the Faith Game. This finding replicates previous studies on betrayal aversion.

However, individuals might perceive different risks even when the same stimulus was presented. Thus, a mediation analysis was conducted to examine whether the difference in frequency of risky choices during the Faith Game and Gambling Game could be fully mediated by subjective probability of winning within each game. First, risk type (dummy variable; natural = 0, social = 1) predicted the frequency of risk choices, $b = -0.10$, $SE = 0.04$, $t(146) = -2.81$, $p = .006$. When perceived risk was entered into the model, the effect of risk type became marginally significant, $b = -0.06$, $SE = 0.04$, $t(145) = -1.69$, $p = .094$ (Figure S2). An analysis of the indirect effect (bootstrap method; 10,000 times) revealed that perceived risk mediated the relationship between risk type and risk choices, with a point estimate of -0.04 and a 95% bias corrected bootstrap CI of -0.08 to -0.01. These findings suggest the possibility that betrayal aversion would emerge even when controlling for subjective probability, though most of the difference could be explained by subjective probability.

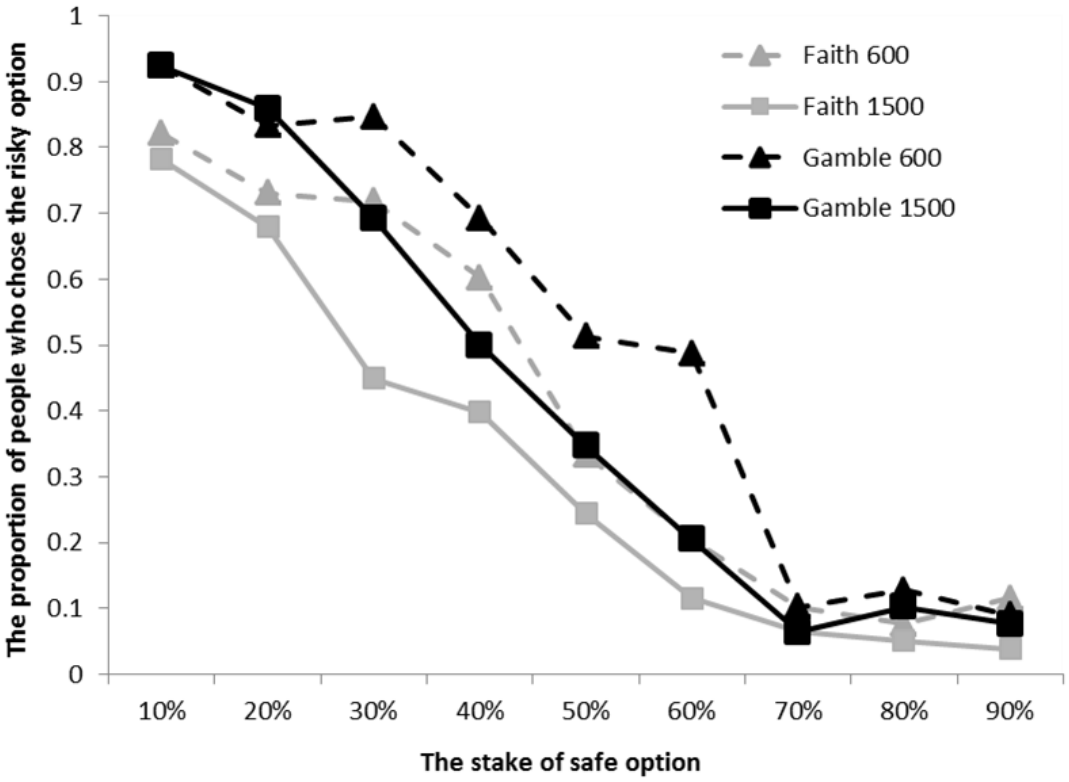

Figure S1. Proportions of risky choices during each game by stake

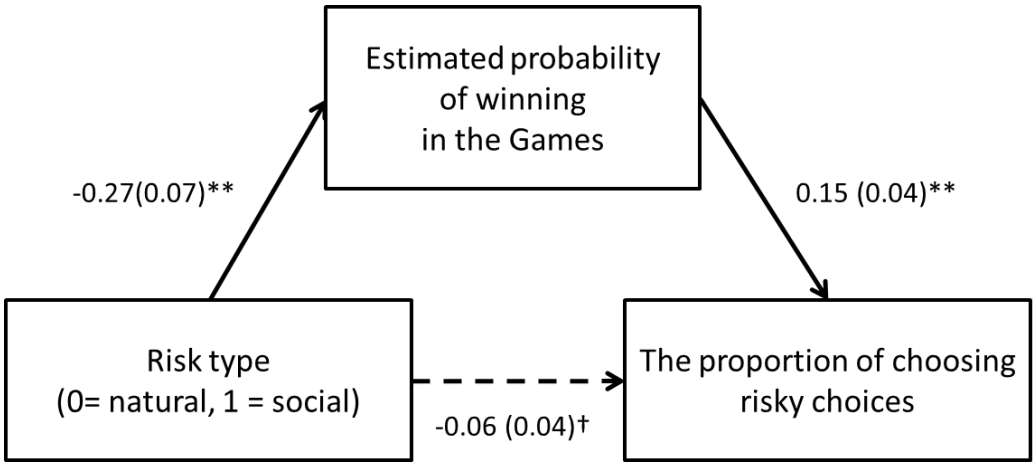

Figure S2. Mediation model showing the relationship between risk type and risky choices. Unstandardized regression coefficients are shown, and standard errors are given in parentheses. Asterisks indicate significant coefficients (**$p < .01$, *$p < .05$, $^{\dagger}p < .10$).