

Trait Negative Reputational Concerns Among In-Group Members and In-Group Favoritism in Minimal Groups

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People tend to behave more cooperatively with in-group members than out-group members, even in minimal group situations. This study investigated the relationship between trait reputational concern (fear of negative evaluation) from in-group members and in-group favoritism in minimal group contexts. A total of 176 participants completed hypothetical prisoner's dilemma games; when reputation was at stake, in-group favoritism was significantly associated with trait negative reputational concern. In this context, greater concerns about reputation from in-group members resulted in stronger in-group favoritism. By contrast, in-group favoritism under anonymity was not related to trait reputational concern. We also measured fear of negative reputation from others, finding that in-group favoritism was correlated with both trait reputational concern from in-group members and others in general as long as reputation was at stake.

Keywords

in-group favoritism, minimal groups, reputational concern, fear of negative evaluation, bounded generalized reciprocity, prisoner's dilemma game

Introduction

People tend to behave more cooperatively with members of groups to which they belong (in-groups) than with members of other groups (out-groups) (e.g., Sumner, 1906). Such in-group favoritism can be seen in a variety of actual social and experimental groups, even those formed by trivial or arbitrary criteria (Tajfel, 1970). While there are various theories about the mechanisms behind in-group favoring behaviors in the minimal group context, the bounded generalized reciprocity (BGR) model (e.g., Yamagishi et al., 1999) is known to robustly explain in-group favoritism, especially in regard to costly cooperative behavior (Balliet et al., 2014). In evolutionary biology, one possible explanation for the evolution of human

altruism toward strangers is found in indirect reciprocity theory, which posits that altruism can be adaptive when individuals who behave altruistically positively improve their reputation, thus receiving altruism from other individuals they may or may not know (e.g., Nowak & Sigmund, 1998). The BGR model is built upon indirect reciprocity, and argues that individuals intuitively believe that the system of indirect reciprocity only exists within in-groups (cf. Masuda, 2012). In other words, BGR suggests that a person should display in-group favoritism when their reputation is at stake (e.g., Mifune et al., 2010).

The majority of relevant studies have examined this BGR prediction using group membership knowledge manipulation via economic game paradigms (e.g., Yamagishi et al., 1999). For example, two individuals (Players A and B) are tasked with completing an economic game under one of two opposing conditions. In the common knowledge (CK) condition, each player is aware of the other player's group membership. In the private knowledge (PK) condition, Player A knows whether Player B belongs to an in-group or out-group, but Player B does not know the group membership status of Player A; importantly, Player A also knows that Player B does not know this status. Thus, Player A is completely anonymous in the PK condition, and therefore, their reputation is not at stake. Previous studies have shown that in-group favoritism occurs in the CK condition, but not in the PK condition (e.g., Yamagishi et al., 1999), thereby supporting the BGR model.

While numerous studies aimed at manipulating reputational concern have supported the BGR model, insufficient attention has been paid to how individual differences impact reputational concern in the context of in-group favoritism. Among those that have addressed this, Mifune and Yamagishi (2015) tested whether fear of negative evaluation (FNE) was correlated with in-group favoritism in minimal groups. More specifically, FNE is defined as "apprehension about others' evaluations, distress over their negative evaluations, avoidance of evaluative situations, and the expectation that others would evaluate oneself negatively" (Watson & Friend, 1969, p. 449). As such, higher FNE is associated with a higher tendency to care about one's own reputation. Given that the BGR model assumes it is imperative that individuals avoid negative reputations within their respective groups, the researchers expected that FNE would be associated with in-group favoritism (Mifune & Yamagishi, 2015). Using the minimal group paradigm and a prisoner's dilemma game, they demonstrated that in-group favoritism was correlated with FNE in the CK condition, but not the PK condition. In other words, higher individual scores on FNE were correlated with stronger favoritism, thus supporting the BGR model.

However, the original FNE scale employed by Mifune and Yamagishi (2015) could not measure reputational concern specific to in-group members. That is, it could

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not distinguish between reputational concern among in-group members and others in general (e.g., strangers and out-group members). In fact, Heimberg et al. (1999) reported that FNE was strongly correlated with social anxiety, which includes the tendency to feel anxious about meeting strangers. Thus, FNE may reflect a tendency to be evaluated negatively by out-group members or worry about being evaluated by others in general. Given that the BGR model assumes that individuals care about their reputational concern specifically from in-group members, Mifune and Yamagishi's (2015) finding did not constitute a direct test of the BGR model's prediction.

As such, this study developed an in-group FNE scale to measure the degree to which individuals are concerned about their reputation among in-group members, thus providing a way to reexamine the relationship between trait reputational concern and in-group favoritism. To the best of our knowledge, Mifune and Yamagishi (2015) were the only previous researchers to clarify the role of trait reputational concern. In this regard, the current study makes a valuable contribution to the literature. Two hypotheses will be tested:

Hypothesis 1: The original FNE will be positively correlated with in-group favoritism in CK condition (replication of Mifune & Yamagishi, 2015).

Hypothesis 2: The in-group FNE will be positively correlated with in-group favoritism in CK condition.

Methods

We recruited undergraduate and graduate students from Kyoto University using mailing lists and social networking services from November to December 2020, thereby obtaining 180 study participants ($M_{\text{age}} = 21.90$, $SD = 1.48$, 128 males, 52 females).

This was a two-part online survey conducted via Google Forms. To prevent carryover effects, we implemented an interval lasting between five and 14 days between the two surveys. In the first survey, participants responded to the Japanese version of the FNE scale (Nihei et al., 2018), which consisted of eight items ($\alpha = .89$) (average score used as a basis for analysis). The second survey was a vignette experiment comprising three parts, including a minimal group induction, prisoner's dilemma game, and post-experimental questionnaire. Participants were first presented with pairs of paintings and instructed to choose one preference for each pair. Based on this, they received feedback on whether they belonged to either the Klee or Kandinsky group, then asked to respond to items measuring their levels of identification with both groups.

After minimal group induction, participants proceeded to the prisoner's dilemma game. Here, they were informed that they would be paired with other randomly selected participants to complete a money exchange task, in which each person received 300 yen from the experimenter, and then decided how much they would give to their respective partners in increments of 50 yen. Further, the amount of money they decided to give would be doubled before it was given to their partner. Participants were instructed to complete this task several times with different partners.

In the above game, we introduced group membership knowledge manipulation (Yamagishi et al., 1999). In the CK condition, they were told that their partners

knew their group membership. In the PK condition, they were informed that their partners did not know their group membership. We also implemented an unknown knowledge (UK) condition, in which participants were not informed of their partner's group. Participants completed five prisoner's dilemma games in various combinations of group membership of their partner and knowledge condition (CK-in-group, CK-out-group, PK-in-group, PK-out-group, and UK). As the UK condition served as a reference group, participants completed the game in this condition first, then completed the remaining four games in a randomized order based on the Latin square design. To ensure that participants correctly understood the instructions, they answered comprehension check questions about their partner's group membership and the commonality of knowledge about group membership immediately after each prisoner's dilemma game. Participants also received a fixed amount of participation fee.

After completing the games, participants responded to a questionnaire using the in-group FNE scale. We simply replaced "others" in the FNE scale items with "in-group members" to reflect the in-group member condition ($\alpha = .92$; e.g., *I am frequently afraid of people in my group noticing my shortcomings*). Although they are not discussed in the main text, we also measured other variables for exploratory purposes (please see the Supplementary Materials).

Results

We excluded participants who failed to correctly answer the comprehension check questions, thereby resulting in a total of 176 participants for the statistical analyses. The mean in-group identification score was 2.48 ($SD = 0.71$), while the out-group identification score was 2.35 ($SD = 0.63$). The difference was significant ($t(175) = 3.34$, $p = .001$, $d = 0.19$). Minimal group manipulation was successful.

In-group favoritism

We conducted a 2 (group: in-group vs. out-group) \times 2 (knowledge: CK vs. PK) within-subject ANOVA on cooperation levels other than the UK condition, which yielded significant main effects for group ($F(1, 175) = 91.31$, $p < .001$, partial $\eta^2 = .34$) and knowledge ($F(1, 175) = 17.37$, $p < .001$, partial $\eta^2 = .09$) as well as a significant interaction effect ($F(1, 175) = 24.61$, $p < .001$, partial $\eta^2 = .12$). Figure 1 shows the descriptive statistics. To follow up on the significant interaction, we examined the simple effect of group in each knowledge condition. Unlike in previous studies (e.g., Yamagishi et al., 1999), participants cooperated more with in-group members than with out-group members in both the CK ($t(175) = 9.54$, $p < .001$, $d = 0.67$) and PK ($t(175) = 7.54$, $p < .001$, $d = 0.41$) conditions, although the degree of in-group favoritism was different.

Correlation between in-group favoritism and trait reputational concern

The original and in-group FNEs were highly positively correlated with one another ($r(174) = .86$, $p < .001$). We computed difference scores between in-group and out-group cooperation in the CK and PK conditions for use as

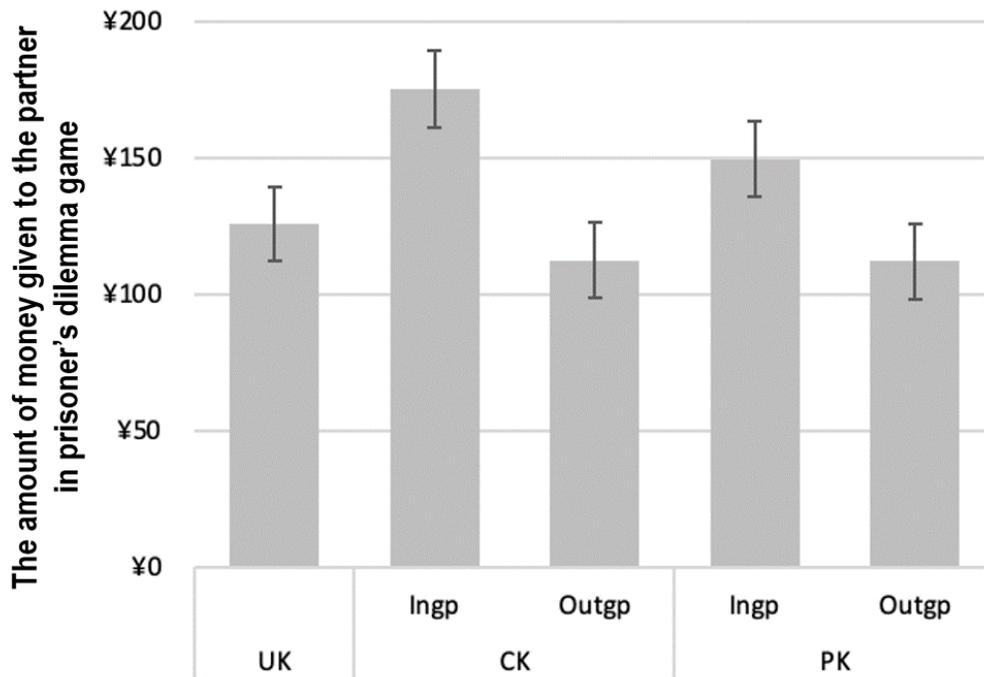


Figure 1. Mean cooperation levels by condition.

Note: UK: unknown; CK: common knowledge; PK: private knowledge; Ingp: in-group partner; Outgp: out-group partner. Error bars indicate 95% confidence intervals.

an index of in-group favoritism. In-group favoritism was positively correlated with the original FNE ($r(174) = .17, p = .024$) and in-group FNE ($r(174) = .15, p = .047$) in the CK condition, but not in the PK condition (original FNE: $r(174) = .14, p = .062$; in-group FNE: $r(174) = .13, p = .08$).

We analyzed the equality of the correlation between in-group favoritism and original FNE, and between in-group favoritism and in-group FNE in each of the CK and PK conditions. No significant differences were found in either CK ($t(173) = 0.515, p = .607$) or PK conditions ($t(173) = 0.218, p = .828$). We also examined the equality of the correlation between original FNE and in-group favoritism in the CK condition and in the PK condition, and between in-group FNE and in-group favoritism in the CK condition and in the PK condition. There was no significant difference between CK and PK conditions for both original FNE ($t(173) = 0.464, p = .643$) and in-group FNE ($t(173) = 0.277, p = .782$).

Discussion

This study examined the relationship between in-group favoritism in minimal groups and trait reputational concerns by collecting survey data and implementing prisoner's dilemma games. When both the participant and their partner mutually knew each other's group membership (i.e., the CK condition), we found that in-group favoritism was positively correlated with the fear of establishing a negative reputation among in-group members and others in general. In this regard, our research not only directly supported the findings of Mifune and Yamagishi (2015) but also yielded further evidence supporting the BGR model.

Taken together, the strong positive correlation between the original FNE and in-group FNE and their relationship Kajiwarara et al. *LEBS* Vol. 13 No. 1 (2022) 6–9

with in-group favoritism suggest that individuals typically think of in-group members when considering how their reputations are perceived by *others*. Thus, the relationship between trait reputational concern among out-group members and in-group favoritism has not yet been examined. Following the BGR model, if the FNE items are phrased to measure the degree to which individuals are concerned about their reputations among out-group members, then it can be expected that in-group favoritism and such an out-group FNE would not be associated. This leaves a promising avenue for continued research on trait reputational concern and in-group favoritism.

We would like to note that our results were not entirely consistent with the BGR model; rather, we observed in-group favoritism in the PK condition, which could not be explained by the BGR model. In-group favoritism in the PK condition was not significantly correlated with FNE scales, but these correlations were also not significantly different from the correlations in the CK conditions. If we predict that the correlation between in-group favoritism and in-group FNE in PK condition is $r = 0$ and that in CK condition is $r = .15$, the G*Power (Faul et al., 2009) shows that the necessary sample size to detect the difference is about 350, which indicates that the current sample size is small. Therefore, no strong conclusions can be drawn from the current study as to whether FNE is the psychological factor that was correlated with in-group favoritism in the PK condition. In-group favoritism under the condition of anonymity may be explained by social identity (Tajfel & Turner, 1979) or social preference (Everett et al., 2015a) (i.e., favorable treatment toward in-group members irrespective of reputation). As only a limited number of studies have found evidence of in-group favoritism in the PK condition (cf. Everett et al., 2015b), additional research is needed to both investigate in-group favoritism under

anonymity and elucidate the underlying psychological processes.

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Author contribution

All authors developed the study concept and design, TK collected data, and TK and NM analyzed data. TK wrote the first manuscript and all authors revise and finalize the manuscript.

Ethical statement

This study's experimental procedures were approved by the Ethics Committee of Kyoto University Unit for Advanced Study of Mind (2-P-23). All participants gave informed consent before answering each Google Form.

Data accessibility

The study data is available at https://osf.io/eqxf7/?view_only=51a34a7e444246ac9474b55b1c78bf70.

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