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Original Article

An eye-like painting enhances the expectation of a good reputation ☆

Ryo Oda[a,*], Yuki Niwa[a], Atsushi Honma[b], Kai Hiraishi[c]

[a]Graduate School of Engineering, Nagoya Institute of Technology, Gokiso-cho, Showa-ku, Nagoya 466-8555, Japan
[b]Department of Evolutionary Studies of Biosystems, The Graduate University for Advanced Studies, Shonan Village, Kanagawa 240-0193, Japan
[c]Kokoro Research Center, Kyoto University, Kyoto 606-8501, Japan

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Abstract

The presence of subtle cues of being watched has been reported to make people behave altruistically, even when they are anonymous. Individual selection theory predicts that generosity in the presence of eyes is based on the providers' expectation of a future reward. On the other hand, as we are living in quite a large society in which altruistic punishment is effective, the eyes could elicit fear of punishment. However, no previous study has investigated whether people are concerned with their reputation when subtle social cues are present. We conducted the dictator game in the presence of, or without, a painting of stylized eyes. The participants were then asked to complete a post-experimental questionnaire designed to investigate what they were thinking when they decided the amount of money to offer the recipient and how they perceived the experimental situation. Participants in the eye condition allocated more money to the recipient than did those in the control condition. This effect was not mediated by fear of punishment but by the expectation of a reward. Moreover, the results suggested that the participants expected their actions would enhance their reputation in the eyes of a third party.

Keywords: Altruism; Dictator game; Generosity; Reputation; Reciprocity

1. Introduction

People show altruistic behaviors toward strangers with whom they have no committed relationship. Two explanations have been proposed for this kind of altruism. One explanation rests on the perspective of individual selection. Indirect-reciprocity and competitive-altruism theories propose that actors benefit in the long-term by "purchasing" increased cooperation from others when they "pay" for altruistic behavior. That is, altruistic behavior is a form of investment (Bshary & Bergmuller, 2008). The other explanation, strong reciprocity theory, argues that people "tend to behave prosocially and punish antisocial behavior at cost to themselves even when the probability of future interactions is low or zero" (Gintis, 2000). This theory proposes that altruism has evolved on the basis of group selection.

Theoretical studies indicate that building a good reputation plays an important role in the evolution of reciprocal altruism through indirect reciprocity (e.g., Nowak & Sigmund, 1998). Even if an altruist is not directly rewarded by the recipient, information about his or her past behavior can be used by potential partners in making decisions about interactions. Results from laboratory experiments support this model. People are willing to cooperate when they know their behavior is being observed by others. Furthermore, people use reputation to choose their partners (Barclay, 2004; Milinski, Semmann & Krambeck, 2002a, 2002b; Wedekind & Braithwaite, 2002). A reputation of generosity leads to stable cooperation in large groups. According to the strong reciprocity model, on the other hand, humans have evolved an inclination to punish people who violate the norm of cooperation through group selection (Fehr & Fischbacher, 2003; Fehr & Gachter, 2002; Gintis, Bowles, Boyd & Fehr, 2003). Boyd, Gintis, Bowles and Richerson (2003) argued that this altruistic punishment is important to maintain cooperation in quite a large group because the payoff disadvantage of altruistic cooperators relative to defectors is independent of the frequency of defectors in the group, while the cost disadvantage of those engaged in altruistic punishment declines as

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* Corresponding author. Graduate School of Engineering, Nagoya Institute of Technology, Gokiso-cho, Showa-ku, Nagoya 466-8555, Japan. Tel.: +81 52 735 5112; fax: +81 52 735 5112.
E-mail address: oda.ryo@nitech.ac.jp (R. Oda).

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defectors become rare. Thus, it is also important for survival to avoid being identified as a norm violator.

Altruistic behaviors toward strangers can be seen in experimental game situations such as the ultimatum, public-goods and dictator games (e.g., Guth, Schmittberger & Schwarze, 1982). Burnham (2003) initially proposed the possibility of altering altruistic behavior in a game situation by stimulating eye-detection mechanisms. Several subsequent studies have shown that individuals behave altruistically when subtle cues suggest that they are being watched, even when they are told that they are anonymous. Harley and Fessler (2005) asked participants to use a computer to share US$10 with others. When two stylized eyes in the form of the eyes of Horus were displayed on the screen, the participants shared more money than when no eyes appeared. Burnham and Hare (2007) used a public-goods game and displayed a robot figure with large eyes on the computer screen. Participants who were "watched" by the robot contributed more to the public good than did participants in the same setting without the robot eyes. Furthermore, Rigdon, Ishii, Watabe and Kitayama (2009) found that even very weak social cues evoked generosity. In these experiments, participants in a dictator game offered more when they were presented with three black dots in the shape of an upside-down triangle than when they saw a right-side-up triangle. The same effect has been observed outside the laboratory. Bateson, Nettle and Roberts (2006) used an honesty box situation. Members of a division of a psychology organization paid nearly three times as much for their drinks when a picture of eyes was displayed with the honesty box compared to what they did when the control image was displayed.

There could be two proximate cause of this "eye effect". Individual selection theory predicts that generosity in the presence of eyes is based on the providers' expectation of a future reward. On the other hand, as we are living in quite a large society in which altruistic punishment is effective, the eyes could elicit fear of punishment. These two could work at the same time because they do not contradict each other. No previous study, however, has directly investigated what the subjects thought when the subtle social cues were presented. A study by Mifune, Hashimoto and Yamagishi (2010) indirectly explored the role of reputation seeking. They divided participants into two minimal groups and asked them to play the role of dictator in a dictator game with another participant who was from the minimal in-group or out-group. In-group favoritism occurred only under the condition where a painting of eyes was displayed. This occurred even when the recipient did not know the group membership of the dictator. The authors argued that fear of punishment could not adequately explain the sensitivity to monitoring in small groups because the psychology of strong reciprocity is not likely to operate in minimal groups that are so far removed from the actual group situations (Koopmans & Rebers, 2009). Rather, they suggested that their results indicated that in-group favoritism was driven by a positive expectation for mutual cooperation or reward from community members. However, this study did not evaluate how the participants felt about and interpreted the experimental situation.

In the present study, we conducted a dictator game in the presence of, or without, a painting of stylized eyes and report the results of a post-experimental questionnaire answered by participants who engaged in the game as providers. First, we conducted a principal component analysis to transform the 17 items in the post-experimental questionnaire into a smaller number of principal components. The aforementioned theories of the ultimate causes of altruism predict the emergence of a principal component related to fear of punishment by a third party as well as a principal component related to expectation of rewards. We next conducted analyses to examine which component mediated the effect of the painted eyes on the amount of money offered by the participants.

2. Methods

2.1. Participants

Participants were 62 Japanese undergraduate students from Kyoto University (30 males and 32 females; mean age, 19.5±2.9) who were recruited from a large participant pool of students from various departments on campus. Monetary rewards were provided as an incentive for their participation.

2.2. Procedure

We used a standard one-shot dictator game. Each provider was allocated ¥700 (about US$9) by the experimenter and was asked to share it with one other participant.

The participants entered a room one by one and were told the rules of the dictator game by a receptionist. They were asked to draw lots to determine whether they would be the provider or the recipient. The draw had been manipulated to ensure that all of the subjects were providers. The participants were told that the use of the ID numbers throughout the experiment would ensure their anonymity and only the second experimenter would know the decisions they made. After receiving an ID number from the receptionist, each participant was asked to enter an adjoining soundproof room (1.8 X 1.3 X 2.0 m) where there was a desk and a chair. Half of the participants were randomly allocated to the eye condition, and the other half were assigned to the control condition. For both conditions, a small standing mirror covered by a brown cloth sat on the desk. In the eye condition, the same stylized eyes as used by Harley & Fessler (2005) (7 X 11 cm) were printed on the cloth. No picture appeared on the cloth in the control condition. After having each participant wait alone for 1 min in the soundproof room, the receptionist entered and passed the participant an envelope, an instruction sheet and ¥700 (seven ¥100 coins), then left at once.