



The Watching-Eye Effect on Prosocial Lying

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Abstract

Evidence shows that people tend to behave prosocially when they are in the presence of images depicting eyes. There are two proximate causes of the eyes effect. One involves positive motivation to gain future reward and the other involves negative motivation to avoid violating a norm. Although several studies have suggested that positive motivation is a strong candidate, these studies were unable to distinguish between adherence to norms and prosocial behavior. We investigated the watching-eyes effect in an experimental setting to determine whether the tendency of humans to violate norms voluntarily could be understood as prosocial behavior. We compared the tendency to tell “prosocial lies” in the presence of a depiction of stylized eyes (eyes condition) with that involving no such depiction (control condition). Under the control condition, participants tended to tell lies that benefitted others, whereas the tendency toward prosocial lying disappeared under the eyes condition. This suggests that the desire to avoid violating norms by being honest is stronger than the desire to pursue a good reputation by demonstrating generosity when such violation might lead to serious costs.

Keywords

prosociality, eye images, cooperation, reputation, norm, lie

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Introduction

Many studies have shown that individuals behave prosocially when artificial eyes suggest that they are being watched (henceforth, the eyes effect). Most laboratory studies of the eyes effect have demonstrated that people tended to share their money with others in economic games when they were “watched” by images of stylized eyes or pictures of eyes (e.g., Baillon, Selim, & van Dolder, 2013; Burnham & Hare, 2007; Haley & Fessler, 2005; Keller & Pfattheicher, 2011; Mifune, Hashimoto, & Yamagishi, 2010; Oda, Niwa, Honma, & Hiraishi, 2011; Rigdon, Ishii, Watabe, & Kitayama, 2009; see Nettle et al., 2013; Sparks & Barclay, 2013 for reviews), although the effect was not observed in some situations (Fehr & Schneider, 2010; Raihani & Bshary, 2012; Tane & Takezawa, 2011). Field experiments have revealed that people were more likely to pay honestly for their coffee on days when pictures of eyes were displayed (Bateson, Nettle, & Roberts, 2006). Displaying eye pictures further prevented people from leaving litter in a cafeteria and garbage at a bus stop (Ernest-Jones, Nettle, & Bateson, 2011; Francey & Bergmüller, 2012) and affected individuals’ tendencies toward moral condemnation (Bourrat, Baumard, & McKay, 2011) and bicycle theft (Nettle, & Bateson, 2012).

Based on these studies, we hypothesized two proximate cause of the eyes effect: positive motivation and negative motivation. On one side, theoretical models and empirical studies have indicated that reciprocal altruism through indirect reciprocity has evolved through reputation-based partner choice (e.g., Bereczkei, Birkas, & Kerekes, 2010; Nowak & Sigmund, 1998), which predicts that generosity in the presence of eyes is based on the providers’ expectation of a future reward. Alternatively, prosociality is a social norm, and humans tend to follow social norms and sanction departures from these norms (Chudek & Henrich, 2011). As contemporary society is large and altruistic punishment is effective, eyes might elicit fear of punishment and enhance adherence to norms by making people

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conscious of the existence of others. Although these two motivations may operate simultaneously, generosity toward others is sometimes inconsistent with adherence to norms. For example, Oskar Schindler, who was a member of the Nazi Party, managed to deceive Hitler and the Nazis to save the lives of 1,200 Jews during the Holocaust: He disobeyed the norms of his party to show generosity toward others. Examination of the effect of eyes on each kind of motivation will contribute to understanding the possible selective forces that have affected human prosociality.

Several studies have suggested that positive motivation is a strong candidate cause of this effect. Oda, Niwa, Honma, and Hiraishi (2011) investigated this issue by soliciting participants' interpretations of a situation while playing the Dictator Game (DG) in both the presence and the absence of a painting of stylized eyes. The participants were asked to complete a post-experiment questionnaire that examined how they perceived the experimental situation and what they were thinking when they decided on the amount of money to offer the recipient. The results suggested that the eyes effect was not mediated by the fear of punishment but by the expectation of a reward.

Other studies have found that the eyes effect did not facilitate norm compliance. In a field study, Bateson, Callow, Holmes, Redmond Roche, and Nettle (2013) found that pictures of eyes on a wall with bicycle racks did not facilitate compliance with antilittering norms. They manipulated local descriptive norm by increasing artificially the litter between and around the bicycle rack prior to the beginning of each observation period and compared littering behavior in the condition with the other condition in which they removed all existing litter. They found that litter on the ground did not interact nonadditively with images of eyes to induce increased littering behavior. Fathi, Bateson, and Nettle (2014) conducted a study in which participants were asked to donate some part of their reward, while the experimenters manipulated the amount of money in a transparent jar containing the charitable contributions. The distributions of coins already in the jar cued descriptive norms that most donations were either small or large. Presence of eyes in the small-norm treatment might increase the frequency of small donations if the eyes effect facilitated norm compliance. Although pictures of eyes on the wall of the laboratory significantly increased the frequency of all donations, their effects were contrary to the norm regarding the amount of donation. However, these studies were both flawed, as Bateson et al. (2013) and Fathi et al. (2014) examined the effects of norms in a context in which subjects were required to be prosocial, which rendered the researchers unable to distinguish between adherence to norms and prosocial behavior. For instance, Fathi et al. (2014) showed that people made large donations when eyes were present, even when the norm was making small donations. However, one cannot conclude that participants violated the norm to be generous because making a large donation did not constitute a violation of the relevant overarching social norm. Nevertheless, such a donation also did not constitute compliance with the norm of small donations. In that sense, prosocial behavior and norm compliance did not contradict each other in those studies. Eye images might

decrease prosocial behavior when the behavior involves risk taking in a social context (e.g., to be seen as a norm breaker). Therefore, unlike the previous studies, we examined how depictions of eyes affect people's adherence to norms in a situation in which compliance does not constitute generosity.

This study experimentally investigated the psychological mechanisms that possibly underlie the eyes effect on the tendency of humans to voluntarily violate norms as a means of demonstrating prosociality. Using the "die-under-the-cup" paradigm, Lewis et al. (2012) found that English participants overreported high numbers when relaying the results of the rolls of a die under conditions of providing incentives to donate to charity and receiving convincing assurances that lying would remain undetected. This situation created a competition between norm compliance regarding honest responding and the demonstration of prosocial behaviors. We examined the distributions of the numbers reported by Japanese participants in the same situation, comparing the results obtained in the presence of stylized eyes (eyes condition) with those obtained in the absence of depictions of eyes (control condition). If stylized-eye images simply facilitate the development of a positive motivation to earn a good reputation, participants under the eyes condition would report high numbers compared with participants under the control condition. On the other hand, if the depiction of eyes facilitates the development of a negative motivation, to avoid punishment, the numbers should be distributed uniformly due to honest reporting.

Materials and Methods

Participants

In total, 199 Japanese undergraduate students, recruited from undergraduate psychology courses at two universities, participated in the experiment as part of their course requirement (114 men and 85 women; mean age, 19.3 ± 1.0 years). Ninety-nine of the participants were allocated to the control condition, and 100 were allocated to the eye condition. No monetary reward was provided for participation.

Procedure

The procedure followed that of Lewis et al. (2012). An experimenter asked participants to complete a consent form and then guided them to a booth surrounded by partitioning screens. The booth contained a desk, a PC, a die, a cup, a response sheet, and a chair. Subjects were asked to follow the procedure shown on the PC monitor. Instructions on the monitor directed participants to roll the die for the purpose of earning money to support disaster relief efforts for people affected by the earthquake in Japan and the coincident tsunami throughout the Pacific. This disaster was identified to study participants as that which occurred on March 11, 2012, and participants were informed that funds donated would be processed through the Japanese Red Cross Society, the amount of the donation to be determined according to what the participants reported as the

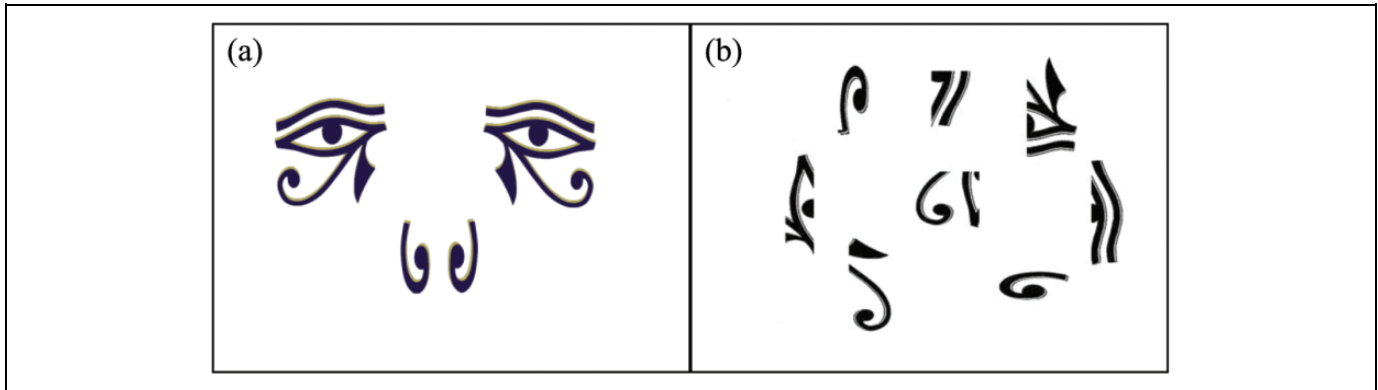


Figure 1. Stimulus presented in the eyes condition (a) and control condition (b).

number represented by the rolled die. The booths displayed a poster of the Japanese Red Cross Society and a permit authorizing use of the society's name to give credibility to the donation condition. The die was placed under a paper cup with a small hole in the top. Participants had to shake the cup to roll the die and look through the hole to see the number rolled. This experimental setting was used to assure that only participants would know their results. After rolling the die, participants were told to check the number rolled and identify the corresponding amount of money earned for donation (the number \times 20 JPY). Participants recorded their donation amount by choosing one answer among six offered choices printed on a sheet of paper. Participants were asked to once again roll the die to provide confirmation of the legitimacy of the process. They were also given assurance that no one else had, or would have, any knowledge of the numbers rolled by the participants. The participants gave the paper to the experimenter upon exiting the booth. Following completion of the tasks using the die, participants were asked to rate whether they believed that the researchers would donate the money generated by the rolls of the dice on a 5-point Likert-type scale (1 = *never believed*, 5 = *strongly believed*).

Under the eyes condition, the background screen of the PC featured the image of stylized eyes used by Haley and Fessler (2005; about 15 \times 10 cm; Figure. 1a). Under the control condition, the imagery was a diffuse version of the same eyes used under the experimental condition; the diffusion created a less face-like image and was shown on the background screen of the PC (Figure. 1b). The instructions given to the participants, and all other features in the experimental context, were identical under both the experimental and the control conditions. A delayed debriefing was administered several weeks after the experiment was completed, which prevented participants from discussing the experiment with classmates who had yet to participate in it. The amount of money reported was actually sent to the Japanese Red Cross Society by the authors.

Results

Eleven participants reported that they “never believed” the researchers would donate the money. Therefore, we analyzed

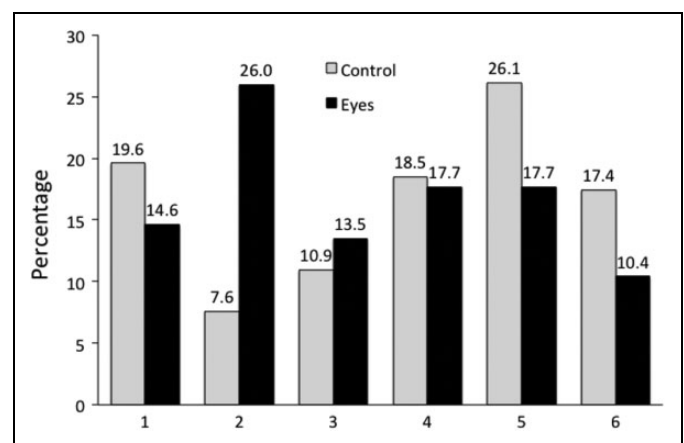


Figure 2. The percentage of die rolls stated by the participants in the control condition and eyes condition.

data from 92 participants (54 men and 38 women) under the control condition and 96 participants (54 men and 42 women) under the eyes condition.

Under the control condition, the distribution of reported outcomes significantly differed from the uniform distribution expected from actual die rolls, $\chi^2(5) = 11.96$, $p = .04$, whereas the distribution did not significantly deviate from a uniform distribution under the eyes condition, $\chi^2(5) = 8.25$, $p = .14$. Additionally, the results showed that the distribution under the control condition and the distribution under the eyes condition were quite different from one another, Figure 2; $\chi^2(5) = 13.52$, $p = .02$. Under the control condition, the most frequently reported number among the six possible choices was the number five, with 26.1% of the total number of reported responses. The amount of money donated under the control condition was 6,920 JPY, whereas it should have been 6,440 JPY if the participants had reported honestly. Thus, the actual donation was 7.5% higher than the expected amount.

Discussion

Japanese participants tended to overreport high numbers under the control condition when there were incentives for making

donations, a replication of the results found by Lewis et al. (2012). Contrary to the results under the control condition, no significant deviation from a uniform distribution was observed under the eyes condition. The tendency toward prosocial lying disappeared when participants felt they were being watched. This suggests that the desire to avoid norm breaking by being honest is stronger than the desire to pursue a good reputation by demonstrating generosity.

These results raise questions about why the presence of the stylized eyes was correlated with higher levels of concern about violating norms. This finding may be related to the cost associated with norm violation. We suspect that the cost of being identified as a liar is substantial because the presence of a liar in a group can lead to an erosion of mutual trust within the group and an avoidance of interactions with the liar. Moreover, as a reputation is transmitted interpersonally, it may be difficult to ameliorate a bad reputation after it has already spread. (According to a Chinese proverb, “The evil that men do is quickly known.”) These factors may underlie why participants avoided telling a lie while they were “watched” even when it would benefit others.

Our results do not necessarily contradict studies showing that the eyes effect promoted prosocial motivation rather than norm compliance (Fathi, Bateson, & Nettle, 2014; Oda et al., 2011). In these studies, prosocial motivation and negative motivation did not operate in opposition to each other. Fathi et al. (2014) showed that participants did not conform to the norm of donating smaller amounts of money when they were presented with eyes. In fact, the frequency of larger donations increased under the eyes condition. Note that the nonconformity with the small-donation norm was not associated with a fear of punishment. Rather, as Fathi et al. (2014) themselves wrote, participants could signal their “greater-than-average generosity when they felt observed” (p. 885, lines: 3–4). Likewise, Oda et al. (2011) and other researchers employing the DG paradigm found that participants could simultaneously signal their generosity and comply with norms by giving more to others. This result differs sharply from ours, in which being generous required violating a norm (telling a lie). We suggest that when the two types of motivation operate in the same direction, people may consciously or unconsciously focus more on the positive side.

This study differs from previous studies in another way. Most of the studies of the eyes effect allowed participants to pay a material cost to behave more prosocially (i.e., giving more money to others). In our study, however, participants were not required to pay anything to behave prosocially; here, prosocial behavior involved only telling a lie. In other words, in the previous studies, images of eyes enhanced the tendency to pay a material cost in exchange for a good reputation. This raises the question of why the tendency to pay a social cost (i.e., being detected as a liar) in exchange for a good reputation was not enhanced. As mentioned previously, a reputation as a liar cannot be ameliorated easily because the reputation will spread widely and quickly. Material costs can be easily replaced with other things at other times. Indeed, people might

be willing to pay for a good reputation when they have opportunities to compensate for the cost in another form. This may underlie the differences between the current study and previous research.

Our results also seem to contradict those of Cai, Huang, Wu, and Kou (2015) who showed that the extent to which people would behave dishonestly to earn higher economic rewards was not reduced in the presence of a picture of eyes. If, as argued previously, being identified as a liar is a serious matter, why did the participants choose the economic profit earned by cheating over avoiding a bad reputation? It is possible that the answer to this question relates to the task used in the experiment conducted by Cai et al. (2015). They measured the degree of dishonesty involved perceptual tasks with no social context. For example, in their first experiment, participants were asked to find two numbers that added up to 10 in each matrix as many times as possible within 4 min. This task differs substantially from that used here, in which participants were required to decide the amount to be donated to others, which is a highly social context. Concerns about one’s reputation may not be triggered in a context in which participants simply increase their profit, whereas it may be triggered in a social context, where eye stimuli may enhance this effect. At present, the current research and that performed by Cai et al. (2015) are the only experimental studies examining the effects of watching eyes on dishonesty. Thus, additional studies in this domain are needed.

One point regarding cultural differences should be noted. Our Japanese participants overreported the number five instead of the number six, which did not replicate the finding of Lewis et al. (2012) who reported that participants reported the number six more frequently than any other number. Cultural psychologists have found that people of Asian cultures tend to avoid extremes compared with people from Western cultures. For example, Chen, Lee, and Stevenson (1995) reported that Japanese and Chinese students were more likely than North Americans to give responses at the midpoint of a Likert-like scale. It is plausible that our Japanese participants avoided reporting the number six because they viewed it as an extreme choice.

Our study provides additional evidence in support of the hypothesis that the eyes effect is rapid and automatic (Kahneman, 2011). In the present experiment, the die was placed under a paper cup, and participants looked through the hole to see the number that was rolled. Even if we had used real eyes or a surveillance camera instead of the image of stylized eyes, it would have been impossible to see the number inside the cup. Therefore, false reports would not have been revealed. Although participants were conscious of the complete anonymity of their responses, they still exhibited the eyes effect. This suggests that, as Sparks and Barclay (2013) argued, the appearance of eyes triggers unconscious eye-detection mechanisms that, in turn, activate appraisals of social scrutiny.

In conclusion, humans may manage their reputation differently in response to eye images depending on the context and the outcome of their decision, which could be caused unconsciously. A growing body of evidence has suggested that

people's behavior is influenced by the behaviors of others and that normative information and reciprocity are powerful but undetected forms of social influence (e.g., Cialdini, 2009). Nudge theory proposes that positive reinforcement can alter people's behavior without forbidding any options or changing their economical incentives (Thaler & Sunstein, 2008). Normative information and reciprocity could be means of the reinforcement. The results of this study suggest that an appropriate combination among eye images, normative information, and reciprocity can make "nudging" more effective.

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