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No Effect on Condemnation of Short or Long Exposure to Eye Images

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The effect of exposure to eye images on various behaviors has been explained as a response to an invalid cue of observation. This invalid cue interpretation has been supported by an experiment showing that a short exposure to eye images increased dictator game generosity, but a long exposure did not. We attempted to conceptually replicate that finding with a different dependent variable, and found no effect of short or long exposure to eye images on moral condemnation. Thus, we failed to replicate previous work showing an effect of eye images on condemnation and therefore these results do not inform the invalid cue hypothesis. We found that women condemned more strongly than men and discuss this finding in light of functional theories of moral condemnation.

Keywords
eyes effect, condemnation, replication

Introduction

Does exposure to an image of eyes change people's behavior? Since pioneering work by Burnham (2003), Haley and Fessler (2005), Bateson, Nettle, and Roberts (2006) and Burnham and Hare (2007), numerous further studies have contributed empirical evidence about the "eyes effect" (reviewed in Sparks & Barclay, 2013; subsequent reports include Baillon, Selim & van Dolder, 2013; Fathi, Bateson, Nettle, 2014; Horita & Takezawa, 2014; and others cited below). There is increasing interest in applying the eyes effect in real-life situations such as litter prevention (Bateson, Callow, Holmes, Redmond Roche, & Nettle, 2013), voter turnout (Matland & Murray, in press; Panagopoulus, 2014a,b) and health promotion (Bittner & Kulesz, 2015), which emphasizes the importance of continued investigation about how and why eye images affect behavior.

Most explanations for the effect involve interpreting eye images as cues to being watched, which in turn cause people to act in ways that protect or enhance their reputation, typically shifting their behavior in a prosocial direction (Sparks & Barclay, 2013; Pfattheicher & Keller, in press). To some extent these interpretations are controversial, especially as reports of null results accumulate (reviewed in Nettle, Cronin, & Bateson, 2013; Sparks & Barclay, 2013; subsequent null results include Cai, Huang, Wu, & Kou, 2015; Fujii, Takagishi, Koizumi, & Okada, 2015; Nettle et al., 2013; Matland & Murray, in press; Vogt, Efferson, Berger, & Fehr, 2015).

One specific aspect of the above interpretation of the eyes effect is that it involves response to an invalid cue of observation. Sparks and Barclay (2013) presented evidence from an experiment and a meta-analysis showing that the effect of eye images on cooperative behavior does not last long. In the experiment, dictator game generosity was elevated after a short exposure to eye images, but not after a long exposure. Similarly, across 22 published and 3 unpublished studies, researchers tended to report positive findings for eyes effect after a short exposure but not a long exposure. These findings support the invalid cue interpretation because habituation and other learning processes result in decreased responding to invalid cues.

In this report, we present the results of an attempted conceptual replication of Sparks and Barclay (2013). Instead of examining eyes effects in the context of dictator games, we investigated effects on moral condemnation. Bourrat, Baumand, and McKay (2011) reported that moral condemnation of theft and deception was more intense following a brief exposure to eye images. We aimed to replicate their finding about moral condemnation, as well as replicating previous experimental results about the effects of different exposure times (Sparks & Barclay, 2013). Thus, we asked participants to rate the moral acceptability of theft and deception following a short exposure to eye images, a longer exposure, or no exposure.

Methods

Methods closely replicate Sparks and Barclay (2013), except that instead of a Dictator Game, the dependant measures were English versions of the two moral condemnation vignettes from Bourrat et al. (2011). 131 females and 28 males (age M = 18.6, SD = 2.9, range 17 – 49) were recruited from a student participant pool and compensated with partial course credit; participants from the previous study were excluded. Participants completed demographic information and filler tasks (details in Appendix) while eye images were either visible (long exposure condition) or not visible (sudden exposure condition, control condition). In the sudden exposure condition (n = 57), eye images were suddenly made visible just prior to the condemnation task. In the long exposure condition (n = 53), the eyes remained visible and the control condition (n = 49) involved no exposure to eye images. The condemnation task asked participants to rate the moral unacceptability (on a 9-point Likert scale) of two hypothetical actions: (1) the participant keeping cash from a lost wallet, and (2) the participant's friend falsifying his credentials on a job application.

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Analysis

Experimental condition (short exposure, long exposure, no exposure), participant sex, and their interaction were entered as fixed factors into ANOVAs as predictors of each condemnation outcome. Our data are publically available (see Supplementary files).

Results

The two condemnation measures were significantly correlated, $r(159) = .380$, $p < .001$. Experimental condition and the interactive effect of condition and sex were not significant predictors of either condemnation variable (all $ps > .4$). Sex was the only significant predictor; women condemned theft and deception more strongly than men (theft: men $M = 5.49$, SE=.329; women $M = 6.83$, $SE = .151$; $F[1,153] = 13.6$, $p < .001$; deception: men $M = 6.08$, $SE = .30$; women $M = 6.74$; $SE = .140$; $F[1,153] = 3.9$, $p = .049$; Figure 1).

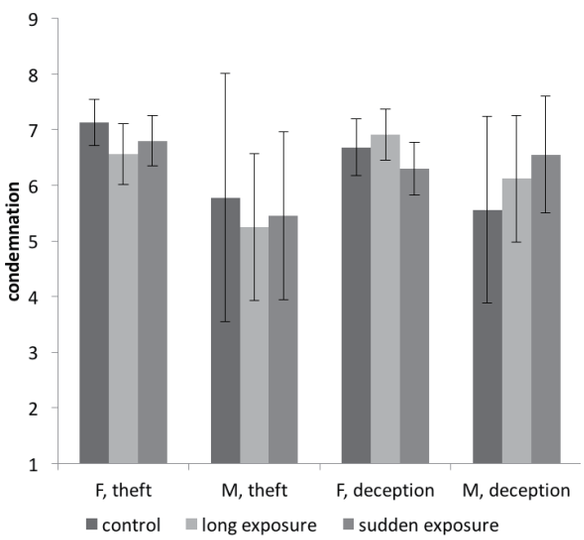

Figure 1. Mean condemnation. Females (F) condemned theft and deception more strongly than males (M), but there were no effects of long or sudden exposures to eye images. Bars show 95% confidence intervals.

Discussion

This experiment fails to replicate the findings of Bourrat et al. (2011); there was no evidence of an effect of a sudden exposure to eyes on condemnation. Since we did not observe an effect of a sudden exposure, the task is not suitable for testing the invalid cue hypothesis that the eyes effect will disappear after a longer exposure. Different approaches to replicating Sparks and Barclay (2013) are needed.

Why did we fail to replicate Bourrat et al. (2011)?

Any explanation is speculative. Here we suggest four possibilities.

First, the vignettes assume that the condemned moral infraction was committed by the participant or a friend of the participant. Is condemnation reputation-enhancing in such a situation? Generosity is widely considered a valued trait in a social partner (Barclay, 2013), so predicting increased generosity in response to a cue of observation seems theoretically obvious. In contrast, it is not obvious, a priori, that increased condemnation of one's self or one's friend is an adaptive response to a reputation cue; a defensive reaction of decreased condemnation seems like a reasonable response. Thus, it is not clear which direction the prediction should have gone regarding the effects of observation on condemnation of oneself or one's friends. Specific situational cues might encourage one response or the other.

Second, we note that there are methodological differences between our study and Bourrat et al. (2011). We recruited participants to a lab for a computer-based task; they recruited students from a library for a paper-based task. Their participants were French and read a French language version of the vignette; ours were Canadian and completed an English version. Differences in culture or environment could plausibly influence the results. There is no a priori reason to predict which methodological or cultural differences (if any) would influence the results, but it remains a possibility.

Third, our participants were mostly women. Rigdon, Ishii, Watabe, and Kitayama (2009) observed an effect of eye images on men's generosity, but not women's. It is possible that we did not recruit enough male participants to observe an effect.

Fourth, it is possible that publication bias has distorted the scientific record; the significant result reported by Bourrat et al. (2011) could be a Type 1 error. We look forward to further insights from a forthcoming paper reporting null results in similar replication attempts (SB Northover, WC Pedersen, & PW Andrews, unpublished data).

Support for functional theories of condemnation

Functional theories of moral condemnation suggest that individual differences in condemnation reflect differences in costs and benefits when condemned behaviors become more costly (DeScioli & Kurzban, 2013; Jensen & Petersen, 2011; Kurzban, 2010). Those who are more likely to use a behavior should be less willing to condemn it, as they should be reluctant to increase the costs of the behavior. In support of this idea, we found that men, who are more inclined to use competitive and criminal behaviours than women (Wilson & Daly, 1985; Daly & Wilson, 1988), condemned thievery and deception less harshly. Further supportive data comes from the history of fighting scale (Sell, Tooby, & Cosmides, 2009), which was included among our filler tasks. Fighting experience was associated with less harsh moral judgements of theft ($r = -.227$, $p = .004$) and deception ($r = -.222$, $p = .005$). Given that a variety of antisocial behaviors co-occur within individuals (reviewed by Mishra, 2014), these correlations are supportive of the cost-benefit perspective on condemnation.

Similarly, a protection theory of condemnation suggests that condemnation of exploitation will be higher among those who are more likely to be victimized (Petersen, 2013). We observed that women condemned theft and deception more intensely than men. Women are generally less physically formidable and less aggressive than men (Archer, 2009; Daly & Wilson, 1988), which may make them more vulnerable to various exploitative

behaviors, including theft and deception. Thus, the sex differences we observed are consistent with the theory that moralizing has a protective function.

The sex differences we observed were based on a sample of only 28 men, and therefore should be interpreted with caution. But the consistency of these sex differences with functional theories of condemnation suggest avenues for future research.

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