



Brief article

Blind ethics: Closing one's eyes polarizes moral judgments and discourages dishonest behavior

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ABSTRACT

Four experiments demonstrate that closing one's eyes affects ethical judgment and behavior because it induces people to mentally simulate events more extensively. People who considered situations with their eyes closed rather than open judged immoral behaviors as more unethical and moral behaviors as more ethical. In addition, considering potential decisions with closed eyes decreased stated intentions to behave ethically and actual self-interested behavior. This relationship was mediated by the more extensive mental simulation that occurred with eyes closed rather than open, which, in turn, intensified emotional reactions to the ethical situation. We discuss the implications of these findings for moral psychology and ethical decision making.

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1. Introduction

"I ask you all to close your eyes while I tell you this story".

Jake Brigance, *A Time to Kill* (1996)

In the film adaptation of John Grisham's novel *A Time to Kill*, defense attorney Jake Brigance begins his closing argument by asking the members of the jury to close their eyes while he describes the brutal assault of his client's young daughter that led his client to murder the assailants. This common tactic among trial lawyers is aimed at facilitating the jurors' ability to visualize the events they are imagining, thereby heightening their emotional reactions to the situation. In this paper, we demonstrate empirically that closing one's eyes can have systematic effects on people's responses to ethical situations because of the heightened emotional reactions that follow from mentally simulating events.

From ancient meditation methods to routine concentration practices, the act of closing the eyes has been

proposed as a way to focus on one's own emotional state (e.g., Fenigstein, Scheier, & Buss, 1975). In fact, research has demonstrated that the brain processes the same information differently when encoding it with the eyes closed rather than open (Ben-Simon, Podlipsky, Arieli, Zhdanov, & Hendler, 2008). In one experiment, participants reported experiencing more intense emotion when listening to negative music clips with their eyes closed compared to open (Lerner, Papo, Zhdanov, Belozersky, & Hendler, 2009).

Closing one's eyes may give people the opportunity to focus inward and concentrate on the situation under consideration. When the situation involves the possibility to act unethically, increased concentration may enable people to find justifications for unethical actions. In this paper, we propose a different possibility: We suggest that when people have their eyes closed, they are more likely to engage in mental simulation of the situation they are considering, which will make moral judgments more extreme and will encourage ethical, rather than unethical, behavior.

Mental simulation involves creating a representation that imitates real or hypothetical events in the mind (e.g., Taylor & Pham, 1996). Because emotionality ratings are higher when people generate a mental picture of an event

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they are hearing about than when they simply attend to the verbal meaning of the words describing it (Holmes & Mathews, 2005), we predict that the more extensive mental simulation that people engage in with their eyes closed rather than open will arouse more intense emotions when considering one's own or another's ethical behavior.

The experience of emotion is an important driver of people's beliefs about the moral acceptability of an action (e.g., Haidt, 2001). Brain regions associated with emotional responses become more active when people consider various moral dilemmas (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001), and moral judgments are more extreme when the experience of negative emotion is heightened (Wheatley & Haidt, 2005).

If closing one's eyes makes emotional reactions more intense through mental simulation, and if emotional reactions intensify moral judgment, then learning about a moral situation with one's eyes closed should make people's subsequent reactions to the situation more extreme. In four studies, we test this main hypothesis with respect to judgments of ethicality, willingness to do wrong, and actual self-interested behavior.

2. Experiment 1

2.1. Methods

One hundred and fifty-two undergraduate business students participated in exchange for course credit. Participants were told they would be completing two studies that had been combined for convenience. The first was a marketing study gauging opinions on the quality of a pair of headphones, which participants were asked to wear while listening to the descriptions of the various tasks that comprised the second (ostensibly unrelated) study.

The study employed a 2 (eye position: open vs. closed) \times 2 (action type: moral vs. immoral) \times 2 (scenario: A or B) \times 2 (order: immoral action first vs. moral action first) mixed design. Every participant judged one moral action (e.g., underreporting the number of hours you worked to ensure you do not overcharge an employer) and one immoral action (e.g., inflating the number of hours you worked to get more money). For each scenario, participants indicated on 7-point bipolar scales: (1) the extent to which they thought the described behavior was ethical, morally appropriate, and fair ($\alpha_{\text{moral}} = .85$, $\alpha_{\text{immoral}} = .84$); and (2) how likely they personally were to behave in the described way.

As our manipulation in this and all subsequent studies, we asked some participants to listen to each task description with their eyes closed, and some with their eyes open. Participants in the eyes-closed condition were instructed to open their eyes to answer the questions (on a computer) after each judgment task, and to close them before hearing the next task description. After these tasks, participants judged the quality and expensiveness of the headphones, neither of which ever varied by experimental condition.

Finally, to gauge suspicion, we asked participants if they thought "any tasks influenced your performance on any subsequent tasks". Across our studies, no participants

Table 1

Means (and standard deviations) by condition (Experiment 1).

		Ratings of ethicality	Likelihood of behaving
<i>Moral action</i>	Open eyes	5.20 (1.21)	4.76 (1.52)
	Closed eyes	5.59 (1.21)	5.37 (1.14)
<i>Immoral action</i>	Open eyes	2.47 (1.04)	3.41 (1.64)
	Closed eyes	1.85 (0.76)	2.65 (1.61)

recognized that the two tasks were related or believed that the first task had an influence on the second task, so we did not exclude any participants from the analyses.

2.2. Results and discussion

As predicted, we found a significant eye position \times action type interaction, $F(1, 144) = 23.92$, $p < .001$, $\eta^2 = .14$ (Table 1). Participants rated the immoral behavior as *less* ethical in the eyes-closed condition than in the eyes-open condition, $F(1, 144) = 23.59$, $p < .001$, $\eta^2 = .14$, but rated the moral behavior as *more* ethical in the eyes-closed condition than in the eyes-open condition, $F(1, 144) = 6.51$, $p < .02$, $\eta^2 = .04$.

For the immoral behavior, participants reported being less likely to behave immorally in the eyes-closed condition than in the eyes-open condition, $F(1, 144) = 8.06$, $p < .01$, $\eta^2 = .05$, but for the moral behavior they reported being more likely to behave morally in the eyes-closed condition than in the eyes-open condition, $F(1, 144) = 7.79$, $p < .01$, $\eta^2 = .05$ (Table 1). Across measures, we found no significant order effects.

These results provide initial evidence that closing one's eyes polarizes ethical judgments and increases intentions to behave ethically. Experiment 2 tested whether the effect of closing one's eyes would also influence actual behavior.

3. Experiment 2

3.1. Methods

Ninety-four students received a \$2 show-up fee and had the opportunity to earn up to \$10 more by completing an "unrelated" study while testing the quality of the headphones they were asked to wear. The supposedly unrelated task of interest involved a standard one-shot dictator game (Forsythe, Horowitz, Savin, & Sefton, 1994). The "initiator" had \$10 to allocate between the self and the "recipient." Initiators kept whatever they did not offer, and recipients kept whatever was offered to them. Although participants were told their role assignment was determined randomly, we actually assigned all participants to play the initiator role against the experimenter. To ensure anonymity, we emphasized that all the interactions would be mediated by a computer program, such that participants would not see or talk to their counterparts at any point.

Participants in the eyes-closed condition were asked to close their eyes while listening to the instructions and while thinking about the offer they wanted to make. They

then opened their eyes to make their offer before answering a few demographic questions.

3.2. Results and discussion

As predicted, those who contemplated their offer with closed eyes gave significantly more ($M = 4.57$, $SD = 2.44$) than those with open eyes ($M = 3.34$, $SD = 2.15$), $t(92) = 2.60$, $p < .02$, $d = .053$. These results indicate that closing one's eyes can reduce actual self-interested behavior. In Experiment 3, we explored the mechanism underlying the effects demonstrated in the first two studies by testing whether mental simulation mediated the effect of closing one's eyes on moral judgment.

4. Experiment 3

4.1. Methods

Seventy-five students and employees participated in exchange for \$6. As their first task, participants listened to the following scenario on the headphones they were evaluating:

“You work for a big consulting company and are responsible for recruiting new hires. You recently received two applications for the same position. After reviewing the resumes and talking to each applicant for about 40 min, you find both qualified even though one is slightly better qualified than the other. Later the same afternoon, you receive a call from an old friend telling you that one of his best friends is looking for a job. Your friend promises to send you more business to boost your commission if his best friend gets the job. It turns out that the best friend is the less qualified candidate you just interviewed. You decide to hire the less qualified candidate”.

We propose that closing one's eyes leads to increased mental simulation of the event being described. To measure the extent of mental simulation, we modified a self-report measure (from Van Boven & Ashworth, 2007) in which participants indicated their agreement with seven statements ($\alpha = .84$; e.g., “Right now I can picture the situation described in my head”).

Next, participants indicated the extent to which they thought the described behavior was unethical, morally inappropriate, unfair, and wrong ($\alpha = .90$) on separate 7-point scales ranging from 1 (*Not at all*) to 7 (*Very much*).

4.2. Results and discussion

As predicted, relative to those who listened to the scenario with open eyes, those who listened with closed eyes: (1) rated the behavior as more unethical, $t(73) = 2.13$, $p < .04$, $d = 0.49$; and (2) reported engaging in mental simulation more extensively, $t(73) = 2.68$, $p < .01$, $d = 0.62$ (Table 2).

Next, we examined whether the extent of mental simulation mediated the effects of closing one's eyes on unethicality ratings (Baron & Kenny, 1986). The effect of closing

Table 2

Means (and standard deviations) for each measure by condition (Experiment 3).

	Ratings of unethicality	Extent of mental simulation
Open eyes	4.37 (1.40)	5.07 (1.04)
Closed eyes	5.07 (1.43)	5.61 (0.66)

one's eyes was reduced to non-significance (from $\beta = .24$, $p < .04$, to $\beta = .13$, $p = .24$) when mental simulation was included in the model, and mental simulation was a significant predictor of unethicality ratings ($\beta = .37$, $p = .001$). A bootstrap analysis showed that the 95% bias-corrected confidence intervals for the size of the indirect effect excluded zero (0.065, 0.849), suggesting a significant indirect effect (MacKinnon, Fairchild, & Fritz, 2007). Taken together, these results are consistent with our proposed process whereby closing one's eyes leads to increased mental simulation, which in turn increases the severity of moral judgment.

5. Experiment 4

Experiment 4 had three aims. The first goal was to provide more direct evidence for the causal role of mental simulation by manipulating the extent to which participants engage in it. The second goal was to demonstrate that heightened simulation has its effects on moral judgment because it intensifies emotional reactions. The third goal was to rule out an alternative explanation; namely, that closing one's eyes simply increases attention to the situation participants are evaluating.

5.1. Methods

One hundred and fifty-two people participated in exchange for \$10. The study employed a 2 (eye position: closed vs. open) \times 2 (instructions to simulate: present vs. absent) between-subjects design. As their first task, participants listened to the scenario used in Experiment 3 with their eyes open or closed. In addition, half of the participants in each of these two conditions were asked to do their best to mentally simulate the situation they would be listening to on their headphones. We reasoned that, if people naturally simulate more when their eyes are closed, then explicit instructions to simulate should not have much (if any) effect on subsequent judgments, but that such instructions would intensify judgments when people's eyes are open.

As a measure of negative emotion, participants then indicated whether listening to the description made them feel guilty, at fault, and sinful ($\alpha = .77$). Next, participants indicated the extent to which they thought the described behavior was unethical, morally inappropriate, unfair, and wrong ($\alpha = .90$). Finally, participants reported the extent to which they engaged in mental simulation while they were listening to the scenario ($\alpha = .82$), and answered three memory questions about details of the scenario (e.g., how long did you talk to each applicant?).

Table 3
Means (and standard deviations) for each measure by condition (Experiment 4).

		Ratings of unethicity	Negative emotion	Extent of mental simulation	Comprehension check
Open eyes	Instructions to simulate	5.00 (0.87)	5.03 (0.61)	5.79 (0.69)	2.63 (0.59)
	No instructions	4.22 (1.21)	4.09 (0.94)	4.99 (0.81)	2.66 (0.59)
Closed eyes	Instructions to simulate	5.71 (1.10)	5.32 (1.01)	5.96 (0.99)	2.58 (0.64)
	No instructions	5.67 (1.30)	5.34 (1.47)	5.88 (0.96)	2.62 (0.68)

Table 4
Coefficient estimates for regression analyses (Experiment 4).

	Negative emotion			Unethicity ratings		
	B (SE)	β	t	B (SE)	β	t
Closed eyes (0 = no, 1 = yes)	1.26 (.25)	.55	5.09***			
Instructions to simulate (0 = no, 1 = yes)	.94 (.24)	.41	3.87***			
Closed eyes \times Instr. to simulate	-.97 (.34)	-.37	-2.83**			
r^2			.19***			
Closed eyes				.40 (.18)	.16	2.26*
Negative emotion				.84 (.06)	.76	13.03***
Instructions to simulate				-.01 (.17)	-.01	-.08
Closed eyes \times Instr. to simulate				.05 (.23)	.02	.22
Negative emotion \times Instr. to simulate				.08 (.11)	.04	.70
r^2						.73***

* $p < .05$.
 ** $p < .01$.
 *** $p < .001$.

5.2. Results and discussion

5.2.1. Manipulation checks

A 2×2 ANOVA on the extent of mental simulation revealed two main effects: Participants who listened to the scenario with closed eyes mentally simulated more extensively than those who listened to it with open eyes, $F(1, 148) = 13.85$, $p < .001$, $\eta^2 = .09$, and participants who were instructed to simulate reported mentally simulating more extensively than those who received no instructions, $F(1, 148) = 9.50$, $p < .01$, $\eta^2 = .06$. These findings were qualified by a significant interaction, $F(1, 148) = 6.19$, $p < .02$, $\eta^2 = .04$ (Table 3). As predicted, instructions to simulate did not affect the extent of simulation among participants who listened with closed eyes, $F < 1$, but did cause an increase in simulation among those who listened with open eyes $F(1, 148) = 13.97$, $p < .001$. There were no significant differences across conditions in the number of comprehension questions correctly answered (all $ps > .67$), suggesting that closing one's eyes did not affect the amount of attention that participants were paying to the scenario.

5.2.2. Unethicity ratings and negative emotion

A 2×2 ANOVA on unethicity ratings also revealed two main effects: Participants who listened to the scenario with closed eyes rated the behavior as more unethical compared to those who listened to it with open eyes, $F(1, 148) = 35.39$, $p < .001$, $\eta^2 = .19$, and participants who were instructed to simulate rated the behavior as more unethical than those who received no simulation instructions, $F(1, 148) = 5.06$, $p < .03$, $\eta^2 = .03$. These findings were

qualified by a significant interaction, $F(1, 148) = 4.06$, $p < .05$, $\eta^2 = .03$ (Table 3). As predicted, instructions to simulate did not affect ethicality ratings among participants who listened with closed eyes, $F < 1$, but did cause an increase in unethicity ratings among those who listened with open eyes, $F(1, 148) = 7.36$, $p < .01$.

Next, we examined whether our composite measure of negative emotion (guilty, at fault, and sinful) would explain the moderating effect of instructions to simulate on the relationship between closing eyes and unethicity ratings, using a moderated path analysis (Edwards & Lambert, 2007). We expected that instructions to simulate would moderate the effect of closing eyes on negative emotion, which would directly predict higher levels of unethicity. Regression analyses showed that when negative emotion was entered into the equation, the interaction between our two manipulations became non-significant, whereas

Table 5
Analysis of simple effects (Experiment 4).

Moderator:	Stage		Effect		
	First	Second	Direct	Indirect	Total
Instructions to simulate					
No (0)	1.26*	.88*	.35	1.11*	1.47*
Yes (1)	.29	.86*	.47*	.25	.72*
Differences	.97*	.02	-.12	.86*	.74*

Notes: Tests of differences for the first stage, second stage, and direct effect are equivalent to tests of the corresponding coefficients reported in Table 4. Tests of differences for the indirect and total effect were based on 95% bias-corrected confidence intervals derived from bootstrap estimates.

negative emotion was a significant, positive predictor of unethicality (Table 4). We computed simple effects for eye-position manipulation at the two levels of instructions to simulate (closed vs. open eyes) using bias-corrected confidence intervals, drawing 1000 random samples with replacement from the full sample. Moderated mediation is demonstrated when the conditional indirect effects of closing eyes on unethicality ratings via negative emotion differ in strength between participants who received instructions to simulate while listening to the scenario and those who did not receive instructions to simulate. We found evidence that this was indeed the case: Instructions to simulate moderated the indirect effects of closing eyes on unethicality ratings through negative emotion (Table 5).

6. General discussion

Across four studies, we found that closing one's eyes led to increased mental simulation and more intense emotional reactions to the action under consideration, which has the effect of polarizing moral judgment and discouraging unethical behavior. By demonstrating how the simple act of closing one's eyes can facilitate mental simulation and affect subsequent assessments of moral situations, these findings extend prior research that has identified how moral judgments are formed (e.g., Haidt, 2001) and what (conscious and unconscious) factors influence the decision to behave ethically (Aquino, Freeman, Reed, Felps, & Lim, 2009). However, our results do not provide a clear explanation for why closing one's eyes causes increased simulation in the first place.

One possibility is that closing one's eyes simply reduces distraction from external visual input, thereby increasing attention to the moral aspects of the situation under evaluation. However, in Experiment 4 we did not find evidence that participants in the eyes-closed condition were paying more attention to the scenario. Our results therefore complement previous research showing that there may be something unique about having one's eyes closed that is not solely a function of visual input, as listening to emotional music with closed eyes caused a pattern of brain activity (increased activation in the amygdala) that was distinct from the pattern found when listening to the same music with open eyes in a completely dark room (Lerner et al., 2009). In fact, such heightened activation of the amygdala in response to emotional stimuli is correlated with a heightened response in areas of the visual cortex (Amaral, Behnia, & Kelly, 2003), further reinforcing the potential for a reciprocal relationship between emotional and visual processing that may be heightened when the eyes are closed.

Another possible explanation comes from work on embodied social cognition, whereby the frequent pairing of closed eyes with the simulation of extreme emotions may even give rise to embodied states similar to the ones that actual emotional experiences engender (Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric, 2005). People routinely close their eyes to savor or "relive" positive experiences (recalling an exceptional meal) and to avoid nega-

tive experiences (averting their eyes from a gruesome car crash). Future research could establish the effectiveness of strategic eye-closing; with respect to negative events, our results raise the possibility that closing one's eyes may have the ironic effect of heightening the mental imagery associated with the very thought one is trying to avoid (e.g., Wegner, 1994).

7. Conclusion

Discussion of corporate collapses and unethical conduct by employees and consumers alike has become commonplace over the last few years. Although scholars from different fields have provided important insights into understanding why people commonly cross ethical boundaries, little research has examined potential solutions that are easily implementable. Here we identified a simple strategy: closing one's eyes. By closing one's eyes, people are likely to simulate the decision they are facing more extensively and experience its emotional components more vividly. As a result of this simulation process, people may be more sensitive to the ethical nature of their own and others' decisions, and perhaps behave more honestly as a result.

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References

- Amaral, D. G., Behnia, H., & Kelly, J. L. (2003). Topographic organization of projections from the amygdala to the visual cortex in the macaque monkey. *Neuroscience*, *118*, 1099–1120.
- Aquino, K., Freeman, D., Reed, A., II, Felps, W., & Lim, V. (2009). Testing a social-cognitive model of moral behavior: The interactive influence of situations and moral identity centrality. *Journal of Personality and Social Psychology*, *97*, 123–141.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.
- Ben-Simon, E., Podlipsky, I., Arieli, A., Zhdanov, A., & Hendler, T. (2008). Never resting brain: Simultaneous representation of two alpha related processes in humans. *PLoS One*, *3*, e3984.
- Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods*, *12*, 1–22.
- Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology*, *43*, 522–527.
- Forsythe, R., Horowitz, J. L., Savin, N. E., & Sefton, M. (1994). Fairness in simple bargaining experiments. *Games and Economic Behavior*, *6*, 347–369.
- Greene, J. D., Sommerville, R. B., Nystrom, L. E., Darley, J. M., & Cohen, J. D. (2001). An fMRI investigation of emotional engagement in moral judgment. *Science*, *293*, 2105–2108.
- Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, *108*, 814–834.
- Holmes, E., & Mathews, A. (2005). Mental imagery and emotion: A special relationship? *Emotion*, *5*, 489–497.

- Lerner, Y., Papo, D., Zhdanov, A., Belozersky, L., & Hendler, T. (2009). Eyes wide shut: Amygdala mediates eyes-closed effect on emotional experience with music. *PLoS One*, *4*, e6230.
- MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual Review of Psychology*, *58*, 593–614.
- Niedenthal, P. M., Barsalou, L. W., Winkielman, P., Krauth-Gruber, S., & Ric, F. (2005). Embodiment in attitudes, social perception, and emotion. *Personality and Social Psychology Review*, *9*, 184–211.
- Taylor, S. E., & Pham, L. B. (1996). Mental simulation, motivation, and action. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 219–235). New York: Guilford Press.
- Van Boven, L., & Ashworth, L. (2007). Looking forward, looking back: Anticipation is more evocative than retrospection. *Journal of Experimental Psychology: General*, *136*, 289–300.
- Wegner, D. M. (1994). Ironic processes of mental control. *Psychological Review*, *101*, 34–52.
- Wheatley, T., & Haidt, J. (2005). Hypnotic disgust makes moral judgments more severe. *Psychological Science*, *16*, 780–784.