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Evil Genius? How Dishonesty Can Lead to Greater Creativity

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Abstract

We propose that dishonest and creative behavior have something in common: They both involve breaking rules. Because of this shared feature, creativity may lead to dishonesty (as shown in prior work), and dishonesty may lead to creativity (the hypothesis we tested in this research). In five experiments, participants had the opportunity to behave dishonestly by overreporting their performance on various tasks. They then completed one or more tasks designed to measure creativity. Those who cheated were subsequently more creative than noncheaters, even when we accounted for individual differences in their creative ability (Experiment 1). Using random assignment, we confirmed that acting dishonestly leads to greater creativity in subsequent tasks (Experiments 2 and 3). The link between dishonesty and creativity is explained by a heightened feeling of being unconstrained by rules, as indicated by both mediation (Experiment 4) and moderation (Experiment 5).

Keywords

creativity, dishonesty, ethics, moral flexibility, rule breaking, morality, decision making

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Researchers across disciplines have become increasingly interested in understanding why even people who care about morality predictably cross ethical boundaries. This heightened interest in unethical behavior, defined as acts that violate widely held moral rules or norms of appropriate conduct (Treviño, Weaver, & Reynolds, 2006), is easily understood. Unethical behavior creates trillions of dollars in financial losses every year and is becoming increasingly commonplace (PricewaterhouseCoopers, 2011).

One form of unethical behavior, dishonesty, seems especially pervasive (Bazerman & Gino, 2012). Like other forms of unethical behavior, dishonesty involves breaking a rule—the social principle that people should tell the truth. Much of the scholarly attention devoted to understanding why individuals behave unethically has therefore focused on the factors that lead people to break rules.

Although rule breaking carries a negative connotation in the domain of ethics, it carries a positive connotation in another well-researched domain: creativity. To be creative, it is often said, one must “think outside the box” and use divergent thinking (Guilford, 1967; Runco, 2010; Simonton, 1999). Divergent thinking requires that people

break some (but not all) rules within a domain to construct associations between previously unassociated cognitive elements (Bailin, 1987; Guilford, 1950). The resulting unusual mental associations serve as the basis for novel ideas (Langley & Jones, 1988; Sternberg, 1988). The creative process therefore involves rule breaking, as one must break rules to take advantage of existing opportunities or to create new ones (Brenkert, 2009). Thus, scholars have asserted that organizations may foster creativity by hiring people slow to learn the organizational code (Sutton, 2001, 2002) and by encouraging people to break from accepted practices (Winslow & Solomon, 1993) or to break rules (Baucus, Norton, Baucus, & Human, 2008; Kelley & Littman, 2001).

Given that both dishonesty and creativity involve rule breaking, the individuals most likely to behave dishonestly and the individuals most likely to be creative may be one and the same. Indeed, highly creative people are

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more likely than less creative people to bend rules or break laws (Cropley, Kaufman, & Cropley, 2003; Sternberg & Lubart, 1995; Sulloway, 1996). Popular tales are replete with images of “evil geniuses,” such as Rotwang in *Metropolis* and “Lex” Luthor in *Superman*, who are both creative and nefarious in their attempts to ruin humanity. Similarly, news articles have applied the “evil genius” moniker to Bernard Madoff, who made \$20 billion disappear using a creative Ponzi scheme.

The causal relationship between creativity and unethical behavior may take two possible forms: The creative process may trigger dishonesty; alternatively, acting unethically may enhance creativity. Research has demonstrated that enhancing the motivation to think outside the box can drive people toward more dishonest decisions (Beaussart, Andrews, & Kaufman, 2013; Gino & Ariely, 2012). But could acting dishonestly enhance creativity in subsequent tasks?

In five experiments, we obtained the first empirical evidence that behaving dishonestly can spur creativity and examined the psychological mechanism explaining this link. We suggest that after behaving dishonestly, people feel less constrained by rules, and are thus more likely to act creatively by constructing associations between previously unassociated cognitive elements.

Experiment 1: Cheaters Are Creative

In our first study, we examined whether individuals who behave unethically are more creative than others on a subsequent task, even after controlling for differences in baseline creative skills.

Method

Participants. One hundred fifty-three individuals recruited on Amazon Mechanical Turk (MTurk; 59% male, 41% female; mean age = 30.08, $SD = 7.12$) participated in the study for a \$1 show-up fee and the opportunity to earn a \$10 performance-based bonus. We told participants that 10% of the study participants would be randomly selected to receive this bonus.

Procedure. The study included four supposedly unrelated tasks: an initial creativity task (the Duncker candle problem), a 2-min filler task, a problem-solving task, and the Remote Association Task (RAT; Mednick, 1962).

Participants first completed the Duncker candle problem (Fig. 1). They saw a picture containing several objects on a table and next to a cardboard wall: a candle, a pack of matches, and a box of tacks. Participants had 3 min “to figure out, using only the objects on the table, how to attach the candle to the wall so that the candle burns properly and does not drip wax on the table or the floor.”



Fig. 1. The Duncker candle problem presented to participants in Experiment 1.

The correct solution involves using the box of tacks as a candleholder: One should empty the box of tacks, tack it to the wall, and then place the candle inside. Finding the correct solution is considered a measure of insight creativity because it requires people to see objects as capable of performing atypical functions (Maddux & Galinsky, 2009). Thus, the hidden solution to the problem is inconsistent with the preexisting associations and expectations individuals bring to the task (Duncker, 1945; Glucksberg & Weisberg, 1966).

Next, participants performed a filler task. They then completed a problem-solving task under time pressure. Each of 10 matrices presented a set of 12 three-digit numbers (e.g., 4.18; see Mazar, Amir, & Ariely, 2008), and the task was to find two numbers in the matrix that added up to 10. Participants were shown one matrix at a time and had 20 s to solve each one. If participants did not find the solution within the allotted time, the computer program moved to the next matrix. After participants attempted to solve the 10 matrices, they self-reported their performance. For each correct solution, participants could receive \$1 if they were among those randomly selected to receive the bonus. The program recorded participants' answer for each matrix, but the instructions did not explicitly state this. Thus, participants could cheat by inflating their performance on this task.

Finally, participants completed the RAT, which measures creativity by assessing people's ability to identify associations between words that are normally associated. Each item consists of a set of three words (e.g., *sore*, *shoulder*, *sweat*), and participants must find a word that

is logically linked to them (*cold*). Participants had 5 min to solve 17 RAT items. Success on the RAT requires people to think of uncommon associations that stimulus words may have instead of focusing on the most common and familiar associations of those words.

Results and discussion

Forty-eight percent of the participants correctly solved the Duncker candle problem. Almost 59% of the participants cheated on the problem-solving task by reporting that they had solved more matrices than they had actually solved. Cheaters performed better on the RAT ($M = 9.00$ items correct, $SD = 3.38$) than did noncheaters ($M = 5.76$, $SD = 3.38$), even when we controlled for creative performance on the Duncker candle problem, $F(1, 150) = 22.03$, $p < .001$, $\eta_p^2 = .13$.

Cheating on the matrix task mediated the effect of participants' initial creativity on their RAT performance (Baron & Kenny, 1986). The effect of baseline creativity weakened (from $\beta = 0.30$, $p < .001$, to $\beta = 0.15$, $p = .056$) when cheating was included in the regression, and cheating significantly predicted RAT performance ($\beta = 0.37$, $p < .001$). A bootstrap analysis showed that the 95% bias-corrected confidence interval (CI) for the size of the indirect effect excluded zero (0.57, 1.80), suggesting a significant indirect effect (MacKinnon, Fairchild, & Fritz, 2007).

These results provided initial evidence that behaving dishonestly enhances creativity. Individual differences in creative ability between cheaters and noncheaters did not explain this finding.

Experiment 2: The Act of Cheating Enhances Creativity

One limitation of Experiment 1 is that people decided for themselves whether or not to cheat. In Experiment 2, we used random assignment to test whether acting dishonestly increases creativity in subsequent tasks. To induce cheating, we used a manipulation in which cheating occurs by omission rather than commission and in which people are tempted to cheat in multiple rounds. Because of these features, most people tend to cheat on this task (Shu & Gino, 2012).

Method

Participants. One hundred one students from universities in the southeastern United States (39% male, 61% female; mean age = 21.48, $SD = 7.23$) participated in the study for a \$5 show-up fee and the opportunity to earn an additional \$10 performance-based bonus. We randomly assigned participants to either the likely-cheating or the control condition.

Procedure. The study included two supposedly unrelated tasks: a computer-based math-and-logic game and the RAT. The cheating manipulation was implemented in the computer-based game (Vohs & Schooler, 2008; von Hippel, Lakin, & Shakarchi, 2005), which involved answering 20 different math and logic multiple-choice problems presented individually. Participants had 40 s to answer each question and could earn 50¢ for each correct answer.

In the control condition, participants completed the task with no further instructions. In the likely-cheating condition, the experimenter informed participants that the computer had a programming glitch: While they worked on each problem, the correct answer would appear on the screen unless they stopped it from being displayed by pressing the space bar right after the problem appeared. The experimenter also informed participants that although no one would be able to tell whether they had pressed the space bar, they should try to solve the problems on their own (thus being honest). In actuality, the presentation of the answers was a feature of the program and not a glitch, and the number of space-bar presses was recorded. We used the number of times participants did not press the space bar to prevent the correct answer from appearing as our measure of cheating.

After the math-and-logic game, participants completed 12 RAT problems, which constituted our creativity measure.

Results and discussion

Most participants (51 out of 53) cheated in the likely-cheating condition of the math-and-logic game. An analysis including only these 51 cheaters in the likely-cheating condition revealed that RAT performance was higher in the likely-cheating condition ($M = 6.20$ items correct, $SD = 2.72$) than in the control condition ($M = 4.65$, $SD = 2.98$), $t(97) = 2.71$, $p = .008$. Similarly, we found a significant difference in RAT performance between the two conditions when all 53 participants in the likely-cheating condition were included in the analysis (likely-cheating condition: $M = 6.25$, $SD = 2.70$), $t(99) = 2.83$, $p = .006$. These results indicate that cheating increased creativity on a subsequent task and provide further support for our main hypothesis.

Experiment 3: Breaking Rules With and Without Ethical Implications

One may argue that people often deviate from rules when they can and that this makes them more creative—even when the rule they break does not have ethical implications. In Experiment 3, we addressed this alternative explanation by using two conditions that did not differ in how likely participants were to disobey the rules

on how to solve the task at hand but did differ in whether they enabled participants to lie. Because of this feature, participants who lied would break an additional rule, a rule with ethical implications. We reasoned that breaking rules with ethical implications (i.e., people should not lie) promotes greater creativity than does violating rules without ethical implications because the former constitutes a stronger rejection of rules. As a result, we predicted that only the condition that enabled lying would enhance creativity, which would provide evidence that cheating specifically increases creativity. Another difference from the prior experiments is that we used two different tasks to measure creativity in Experiment 3.

Method

Participants. One hundred twenty-nine individuals recruited on MTurk (58% male, 42% female; mean age = 27.72, $SD = 7.86$) participated in this study for \$2.

Procedure. We described the study as including various tasks, the first of which was a standard anagram task that tested verbal abilities. To motivate successful performance on this task, we told participants that performance on an anagram task predicts verbal ability, which is correlated with career potential. In this task (adapted from Irwin, Xu, & Zhang, 2014), participants had to complete as many anagrams as they could in 3 min. The instructions specified several rules participants had to follow (see the Supplemental Material available online). For each anagram, participants had to rearrange a set of letters to form a meaningful word (e.g., *tiarst* can make *artist*). In addition, participants were supposed to provide only one answer per anagram, even if the anagram had more than one solution. Because each anagram had multiple answers, the instructions stated, the computer program could not validate their answers automatically. Thus, participants had to keep track of how many anagrams they had solved and self-report the number at the end of the task.

After participants completed the task, they were randomly assigned to either the likely-cheating or the control condition. These two conditions differed in the choice options people were given to report their performance. In a pretest, we found that, on average, participants recruited on MTurk (age range: 18–50) solved 5 to 8 anagrams in the allotted time. Thus, to induce participants to inflate their performance, in the likely-cheating condition, we used the following options: “0–8: lower verbal learners”; “9–14: average for students in good colleges”; “15–20: typical for students in Ivy League colleges”; and “21–higher: common for English professors and novelists.” Because most participants would likely fall into the “lower verbal learners” category, their intelligence would be threatened, and they would therefore be

tempted to cheat by inflating their performance (as in Gino & Mogilner, 2014). In the control condition, we used the following options: “0–5: average for students in good colleges”; “6–10: typical for students in Ivy League colleges”; and “11–higher: common for English professors and novelists.” In this case, most participants would likely fall into an acceptable bracket and would therefore not feel tempted to lie. Thus, participants in both conditions had the opportunity to break the numerous rules listed in the instructions, but those in the likely-cheating condition were more tempted to lie.

Following the anagram task, participants completed two tasks assessing their creativity: the uses task and 17 RAT problems (as in Experiment 1). For the uses task, they had to generate as many creative uses for a newspaper as possible within 1 min (Guilford, 1967). To assess creativity on this task, we coded responses for fluency (i.e., the total number of uses), flexibility (i.e., the number of uses that were different from one another), and originality (averaged across the different suggested ideas).

Results and discussion

Table 1 reports the means for the key variables assessed in this study, separately for the two conditions.

Forty percent of participants (26 out of 65) in the likely-cheating condition cheated, and only 4.7% (3 out of 64) in the control group did, $\chi^2(1, N = 129) = 23.08$, $p < .001$. Actual performance on the anagram task did not differ between conditions, $t(127) = 0.23$, $p = .82$.

All measures of creativity were higher in the likely-cheating condition than in the control condition—RAT performance: $t(127) = 2.17$, $p = .032$; fluency on the uses task: $t(127) = 2.47$, $p = .015$; flexibility on the uses task: $t(127) = 1.82$, $p = .072$; and originality on the uses task: $t(127) = 3.24$, $p = .002$. Thus, cheating enhanced creativity.¹

Experiment 4: Feeling Unconstrained by Rules

In Experiment 4, we examined why cheating enhances creativity by measuring the extent to which participants felt that they were not constrained by rules. We also used a different task to assess cheating. In our previous studies, we used tasks in which performance was partially due to ability and effort. Such tasks may be cognitively depleting, and behaving honestly may have required greater cognitive effort than behaving dishonestly. In Experiment 4, we used a coin-toss task in which cheating and acting honestly likely involve the same cognitive effort. Finally, we also measured affect to rule out the possibility that emotions partially explain the effects of dishonesty on creativity.

Table 1. Means for the Key Variables in Experiment 3

Condition	Number of anagrams solved	Uses task			Number of RAT items solved
		Fluency	Flexibility	Originality	
Likely-cheating	4.17 (3.26)	6.02 (2.02)	5.18 (2.01)	3.69 (1.21)	6.85 (3.82)
Control	4.05 (2.89)	5.20 (1.70)	4.58 (1.78)	3.06 (0.97)	5.47 (3.38)

Note: The values in parentheses are standard deviations. RAT = Remote Association Task (Mednick, 1962).

Method

Participants. One hundred seventy-eight individuals recruited on MTurk (47% male, 53% female; mean age = 28.59, $SD = 7.72$) participated in the study for \$1 and the opportunity to earn a \$1 bonus.

Procedure. The instructions explained that the goal of the study was to investigate the relationships among people's different abilities, such as attention, performance under pressure, and luck. Participants also learned that they would receive monetary bonuses based on their performance on different tasks.

We first asked participants to guess whether the outcome of a virtual coin toss would be heads or tails. After indicating their prediction, participants had to press a button to toss the coin virtually. They were asked to press the button only once. To give participants room for justifying their own cheating, we included a note at the bottom of the screen that stated, "Before moving to the next screen, please press the 'Flip!' button a few more times just to make sure the coin is legitimate" (a procedure adapted from Shalvi, Dana, Handgraaf, & De Dreu, 2011). Participants then reported whether they had guessed correctly and received a \$1 bonus if they had. The program recorded the outcomes of the initial virtual coin tosses so that we could tell whether participants cheated.

Afterward, for each of three pictures (see Fig. 2), participants used a 7-point scale (1 = *not at all*, 7 = *very much*) to respond to the question, "If you were in the situation depicted in the picture, to what extent would you care about following the rules?" We averaged each participant's answers across the three items to create a measure for caring about rules ($\alpha = .81$).

Participants then completed the same two creativity tasks as in Experiment 3. Finally, participants indicated how they felt right after finishing the coin-toss task, using the 20-item Positive and Negative Affectivity Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The PANAS captured both positive affect ($\alpha = .90$) and negative affect ($\alpha = .90$) on a 5-point scale (1 = *very slightly or not at all*, 5 = *extremely*).

Results and discussion

Twenty-four percent of participants (43 out of 178) cheated on the coin-toss task. Table 2 reports the means for the key variables assessed in this study, separately for cheaters and noncheaters.

Participants who cheated on the coin-toss task reported caring less about rules than did those who did not cheat, $t(176) = -6.48, p < .001$. All four measures of creativity were higher for cheaters than they were for noncheaters—fluency on the uses task: $t(176) = 4.24, p < .001$; flexibility on the uses task: $t(176) = 4.02, p < .001$; originality on the uses task: $t(176) = 6.85, p < .001$; and RAT performance: $t(176) = 2.54, p = .012$. Cheaters and noncheaters reported similar levels of positive and negative affect after the coin-toss task ($ps > .36$).

We tested whether participants' feelings about rules explained the link between cheating and creativity. For this analysis, we standardized the four measures of creative performance and then averaged them into one composite measure. The effect of cheating on subsequent creativity was significantly reduced (from $\beta = 0.43, p < .001$, to $\beta = 0.35, p < .001$) when participants' caring about rules was included in the equation, and such feeling predicted creative performance ($\beta = -0.18, p = .017$; 95% bias-corrected CI = [0.02, 0.29]). These results provide evidence that feeling unconstrained by rules underlies the link between dishonesty and creativity.

Experiment 5: Evidence for Mediation Through Moderation

In Experiment 4, we tested whether caring about rules explained the relationship between dishonesty and creativity using a traditional mediation approach. In Experiment 5, we obtained further evidence for this mediating mechanism using a moderation approach (as recommended by Spencer, Zanna, & Fong, 2005).

Method

Participants. Two hundred eight individuals from the northeastern United States (56% male, 44% female; mean



Fig. 2. Images used to assess the extent to which participants in Experiment 4 felt unconstrained by rules.

age = 21.66, $SD = 2.64$; 88% students) participated in the study for \$10 and the opportunity to earn additional money.

Procedure. Participants were randomly assigned to one of four experimental conditions in a 2 (cheating condition: opaque vs. transparent) \times 2 (prime condition: rule-breaking prime vs. neutral prime) between-subjects design. They read that they would be completing a series of short tasks involving luck and skill, and that some of these tasks involved a bonus payment.

The first task was a die-throwing game (Jiang, 2013). In this game, participants could throw a virtual six-sided die 20 times to earn points (which would be translated to real dollars and added to participants' final payment). Participants were reminded that each pair of numbers on

opposite sides of the die added up to 7: 1 vs. 6, 2 vs. 5, and 3 vs. 4. We called the visible side that was facing up "U" and the opposite, invisible side that was facing down "D." Participants received the following instructions:

In each round, the number of points that you score depends on the throw of the die as well as on the side that you have chosen in that round. Each round consists of one throw. Before throwing, you have to choose the relevant side for that round. Note that the die outcomes are random and the outcome you see on the screen corresponds to the upside. . . . For instance, if you have chosen "D" in your mind and the die outcome turns up to be "4," you earn 3 points for that throw, whereas if you have chosen "U" in your mind, you earn 4 points. Across the 20

Table 2. Means for the Key Variables in Experiment 4

Participant group	Uses task			Number of RAT items solved	Caring about rules	Positive affect	Negative affect
	Fluency	Flexibility	Originality				
Cheaters	8.33 (2.80)	6.81 (2.85)	3.60 (1.26)	9.47 (4.38)	3.66 (1.76)	2.52 (0.80)	1.56 (0.62)
Noncheaters	6.52 (2.31)	5.25 (1.98)	2.33 (1.00)	7.84 (3.38)	5.28 (1.31)	2.42 (0.89)	1.46 (0.63)

Note: The values in parentheses are standard deviations. RAT = Remote Association Task (Mednick, 1962).

rounds you can earn a maximum of 100 points. Each point is worth 20 cents, so you can make a maximum of \$20.

In the opaque condition, participants had to choose between U and D in their mind before every throw, and after each throw, they had to indicate the side they had chosen before the throw. In the transparent condition, participants were also asked to choose between U and D in their mind before every throw, but in this case, they had to report their choice before throwing the virtual die. Thus, the opaque condition tempted participants to cheat (by indicating after each throw that they had chosen the side of the die that corresponded to the higher number of points), whereas the transparent condition did not allow for cheating.

After the die-throwing task, participants performed an ostensibly unrelated task called "Memory Game." Their task was to find matching graphics in a 4×4 grid that contained eight different pairs of hidden images; participants could click on two cells in the grid at a time to reveal the images. Participants were reminded that we were interested not in how quickly they completed the task, but rather in how many clicks they needed to complete it successfully. We used this task to introduce our second manipulation. Half of the participants (rule-breaking prime condition) were presented with a grid in which five of the pairs were pictures of people breaking rules (as in Fig. 2), and the remaining three pairs were neutral pictures (e.g., mountains). The other half of the participants (neutral prime condition) saw eight pairs of neutral pictures.²

Finally, participants completed the measure of creativity, the same RAT problems used in Experiment 1.

Prediction. We expected the rule-breaking prime to promote creative behavior only in the transparent condition. We expected participants in the opaque condition to feel already sufficiently unconstrained by rules after behaving dishonestly in the die-throwing game. We therefore did not expect the rule-breaking prime to influence creativity among these participants.

Results and discussion

A 2×2 analysis of variance using RAT performance as the dependent measure revealed a significant main effect of cheating condition, $F(1, 204) = 10.23, p = .002, \eta_p^2 = .048$, and a nonsignificant effect of prime condition, $F(1, 204) = 1.63, p = .20$. The interaction was significant, $F(1, 204) = 4.08, p = .045, \eta_p^2 = .02$ (see Fig. 3). In the opaque condition, RAT performance did not vary with prime condition, $F < 1$. In the transparent condition, participants

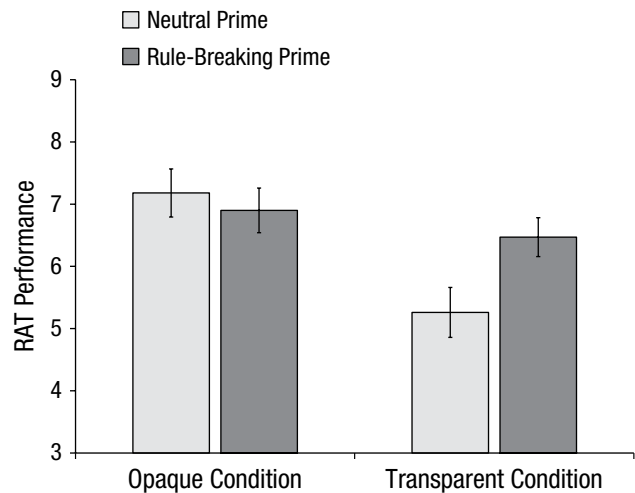


Fig. 3. Performance on the Remote Association Task (RAT) in Experiment 5 as a function of cheating and prime condition. Error bars indicate standard errors.

were more creative in the rule-breaking prime condition than in the neutral prime condition, $F(1, 204) = 5.29, p = .023$. These results provide further evidence that acting dishonestly makes people feel unconstrained by rules, and that this lack of constraint enhances creative behavior.

General Discussion

There is little doubt that dishonesty creates costs for society. It is less clear whether it produces any positive consequences. This research identified one such positive consequence, demonstrating that people may become more creative after behaving dishonestly because acting dishonestly leaves them feeling less constrained by rules.

By identifying potential consequences of acting dishonestly, these findings complement existing research on behavioral ethics and moral psychology, which has focused primarily on identifying the antecedents to unethical behavior (Bazerman & Gino, 2012). These findings also advance understanding of creative behavior by showing that feeling unconstrained by rules enhances creative sparks. More speculatively, our research raises the possibility that one of the reasons why dishonesty is so widespread in today's society is that by acting dishonestly, people become more creative, which allows them to come up with more creative justifications for their immoral behavior and therefore makes them more likely to behave dishonestly (Gino & Ariely, 2012), which may make them more creative, and so on.

In sum, this research shows that the sentiment expressed in the common saying "rules are meant to be broken" is at the root of both creative performance and

dishonest behavior. It also provides new evidence that dishonesty may therefore lead people to become more creative in their subsequent endeavors.

Author Contributions

Both authors developed the study concept, contributed to the study design, collected data, and performed the data analysis. Both authors worked on various drafts of the manuscript and approved the final version of the manuscript for submission.

Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

Supplemental Material

Additional supporting information may be found at <http://pss.sagepub.com/content/by/supplemental-data>

Notes

1. We obtained the same results when we compared the creativity of cheaters and noncheaters (all $ps < .01$).
2. In a pilot study ($N = 103$), we tested the effect of our primes on participants' willingness to follow rules as indicated by their scores on a four-item scale adapted from Tyler and Blader (2005; e.g., "If I received a request from a supervisor or a person with authority right now, I would do as requested"). Participants in the rule-breaking prime condition demonstrated less willingness to follow rules ($M = 5.65$, $SD = 0.79$) than did participants in the neutral prime condition ($M = 6.03$, $SD = 0.91$), $t(101) = -2.27$, $p = .025$.

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