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Rude and Inappropriate: The Role of Self-Control in Following Social Norms

Amber DeBono[1], Dikla Shmueli[2], and Mark Muraven[1]

Abstract

Following social norms to avoid deviant or socially inappropriate behavior may require self-control. This was tested in two experiments that experimentally manipulated individuals' level of self-control strength. In the first experiment, individuals whose self-control capacity was depleted were more likely to misrepresent how many problems they solved and work after being told to stop while working on a timed test. These same results were found in individuals low in trait self-control. This was especially true when the certainty of getting caught was low. In the second experiment, depleted individuals were ruder to the experimenter than nondepleted participants. The results have implications for understanding how self-control contributes to normative behavior.

Keywords

norms, self-regulation, self-control, self, morality, individual differences

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Do people naturally do the right thing, follow social norms, and resist temptations? Or is cheating, lying, and being rude the easier and more innate path? These questions have vexed philosophers and religions for millennium. Modern scientific discourse seems to face the same dilemma. For example, Aarts and Dijksterhuis (2003) argued that "situational norms can guide social behavior automatically" (p . 19). Based on Bargh's (1994) model of automaticity, they suggest that people should follow societal rules without thinking, even when otherwise preoccupied, and without conscious intention. Indeed, they found that adherence to social norms can be unconsciously primed by the environment (Aarts & Dijksterhuis, 2003). In other words, being good is automatic.

On the other hand, other models suggest that being bad is the automatic or default action. For instance, Gottfredson and Hirschi's (1990) general theory of crime suggested that people engage in illegal actions when presented with an opportunity and when they fail to inhibit their impulsive actions. That is, criminal, immoral, and deviant acts follow from poor self-control. Indeed, people lower in trait self-control are much more likely to cheat, lie, steal, violate rules, and engage in otherwise counternormative behavior than people higher in trait self-control (for a review, see Pratt & Cullen, 2000). This implies that being bad is automatic; people are good only to the extent that they exert self-control.

The present studies are a further attempt to investigate the extent to which following social norms requires self-control. Although following some norms may be so ingrained (like smiling at friends) that they require no self-control or conscious awareness, following other norms may require an exertion of self-control. In particular, we focus on the role of self-control in resisting several different deviant behaviors, most notably cheating and being rude. By experimentally manipulating participants' ability to exert self-control, we hoped to establish a causal link between self-control and deviant behavior that is typically missing in the trait-level analysis typical of research on self-control and deviant behavior.

Norms and Self-Control

Self-control occurs when an individual overrides, inhibits, or stops a response to avoid a temptation, reach a goal, or follow a rule (Barkley, 1997; Mischel, Shoda, & Rodriguez, 1989; Norman & Shallice, 1986; Skinner, 1953). Without self-control, an individual would engage in impulsive, automatic, present-focused behavior with little regard to long-term

[1]University at Albany, State University of New York, Albany, NY, USA
[2]National Cancer Institute, Bathesda, MD, USA

Corresponding Author:
Amber DeBono, University at Albany, State University of New York, 1400 Washington Ave., Albany, NY 12065
Email: amberdebono@yahoo.com

costs or expectations. Given the importance of self-control in following rules, we expect that individuals' adherence to social norms should be dependent on their ability to exert self-control.

Norms are rules for social behavior (Kelley, 1955) that inform individuals about others' or society's expectations for their behavior in a wide variety of social settings. These social norms are generally classified into descriptive norms, which are statements about how people typically act in a given situation, like saying hello to the cashier in the supermarket, and prescriptive norms, which are rules about what is expected or required in a situation, such as not stealing.

Many norms may not reach that level of automaticity, however. These less automatic norms may require individuals to exert self-control to follow them. In that case, situational cues may very well strengthen the behavioral intentions, leading to priming effects like those observed in Aarts and Dijksterhuis (2003).

In particular, we suggest that following both prescriptive and descriptive norms should require self-control, as the person has to do something that is effortful, not entirely automatic, and that requires foregoing an immediate reward or initiating an action. However, given the stronger social pressures to conform and the greater punishment usually associated with violation of prescriptive norms (Cialdini & Trost, 1998; Morris, 1956; Morrison & Miller, 2008; Reno, Cialdini, & Kallgren, 1993), people may be more likely to violate these types of norms when accountability cues suggest that the opportunity to do so exists and the likelihood of punishment is low (Lerner & Tetlock, 1999; Semin & Manstead, 1983).

Consistent with the idea that following norms requires self-control, research has found that individuals low in trait self-control (or high in impulsivity) are more likely to engage in socially inappropriate, immoral, illegal, and deviant behavior. This is especially true in the absence of accountability cues or when the likelihood of getting caught is low. For example, there is a strong correlation between trait self-control and general indices of criminal acts (Gibbs, Giever, & Martin, 1998; Grasmick, Tittle, Bursik, & Arneklev, 1993), violence in intimate relationships (Sellers, 1999), cheating (Cochran, Wood, Sellers, Wilkerson, & Chamlin, 1998), and driving while intoxicated (Keane, Maxim, & Teevan, 1993). Laboratory studies have confirmed the role of self-control in deviant behavior. In one recent experiment, Nagin and Pogarsky (2003) found that more impulsive individuals were more likely to (falsely) report knowing the answers to very difficult trivia questions than those who were not as impulsive. Finally, a recent review (Pratt & Cullen, 2000) concluded that self-control is a very strong predictor of deviant behavior, especially in the absence of accountability cues.

Similarly, research has linked trait self-control with better interpersonal functioning and getting along with others, consistent with following descriptive norms (Eisenberg et al., 1997; Mischel et al., 1989). For instance, impulsive children and adults exhibit inappropriate responses to anger provocations (Murphy & Eisenberg, 1997), which suggests they deviate from social norms about acceptable emotional displays. Similarly, Vohs, Baumeister, and Ciarocco (2005) found that individuals whose ability to exert self-control was temporarily diminished were less able to make socially appropriate self-presentations. For example, participants low in self-control in these studies were more likely to talk too much, make overly intimate disclosures, or respond in an arrogant way consistent with the idea that they were not adhering to social norms for self-presentation. Finally, research on emotional labor also suggests that maintaining superficial politeness and minding one's manners are demanding and require emotional regulation consistent with the exertion of self-control (Goldberg & Grandey, 2007). In other words, the mere act of trying to be pleasant and follow politeness norms may require self-control. Hence, much like the prescriptive norms of not engaging in criminal behavior, it appears that self-control is also used in following descriptive norms that pertain to routine social interactions.

A Model of Self-Control

If indeed self-control is critical to following social norms, the depletion of self-control strength (Muraven & Baumeister, 2000; Muraven, Tice, & Baumeister, 1998) should result in more counternormative behaviors. Research on self-control has suggested that it may operate like a limited resource that becomes depleted with use. Individuals lower in strength may perform more poorly on subsequent tasks that require self-control. This has been tested with a variety of tasks. For instance, in Muraven, Collins, and Nienhaus (2002), participants were first asked to either suppress the thought of a white bear or solve arithmetic problems. Suppressing the thought of a white bear required far more self-control than adding numbers together, but otherwise the tasks did not differ in duration, pleasantness, how motivated participants felt afterward, or how arousing the task was. Participants were then given the opportunity to drink some alcohol, with the understanding that after they finished drinking they would be taking a driving test and if they did well on the test they could win a prize. This created a situation that required self-control (to restrain how much alcohol was consumed). Participants who had to suppress the thought of white bear consumed more alcohol and had a higher blood alcohol level as compared to participants who solved math problems. The amount of self-control participants reported exerting in the first part of the experiment was related to how much they drank. The results suggested that self-control is needed to restrict alcohol consumption, even when there are consequences from drinking too much.

A limited strength model of self-control may explain these (and other similar) results. However, it is critical to realize that the depletion of self-control strength does not invariably and

unequivocally lead to a failure of self-control. Instead, it merely makes the costs of continuing to exert self-control unacceptably high, which leads the individual to withdraw his or her efforts (Muraven, Shmueli, & Burkley, 2006). If sufficiently motivated to exert self-control, this reluctance can be overcome nonetheless (Muraven & Slessareva, 2003). This can be likened to physical fatigue—in most cases, a person is not so fatigued to prevent more effort, but instead he or she merely is less willing to put forth the necessary work, deciding instead to rest and recover. For self-control, this means that depletion can be overcome, provided the situation is important enough. This further means that certain norms may not be violated even when people are depleted, if they greatly value the norms or fear the consequences of violation.

This also suggests that individuals' momentary level of self-control strength should be distinct and separate from their level of trait self-control. That is, exerting self-control may affect the self-control performance of individuals high in trait self-control the same way as individuals low in trait self-control. Indeed, research has found that the self-control performance of individuals high in trait self-control drops the same amount as individuals low in trait self-control (Muraven, Pogarsky, & Shmueli, 2006) when depleted. Put another way, this model seems to explain individuals' fluctuation around their typical level of self-control rather than their absolute level itself.

Present Research

Given the inconsistencies between theories that predict following norms is automatic and theories that predict following norms requires self-control, it is critical to conduct an empirical test of whether self-control contributes to normative behavior. In particular, using the depletion of self-control paradigm, we experimentally tested the role of self-control in following ethical, prescriptive (Experiment 1), and descriptive norms (Experiment 2). Assuming that following norms requires self-control, we predicted that individuals whose self-control was depleted would be more likely to cheat and lie (Experiment 1) and behave rudely (Experiment 2) as compared to individuals whose self-control was not depleted.

Experiment 1: Prescriptive Norms

Following previous research in deviance (Nagin & Pogarsky, 2003; Tittle & Rowe, 1973; Ward, Stafford, Gray, & Menke, 1994), the present study examined cheating behavior. Obviously there are strong, often very explicit norms and rules against cheating at most universities. Hence, the students in this experiment should have a clear sense of the norms against cheating. In this experiment, cheating was operationalized in two ways. The first involved the number of unsolvable problems participants claimed solving (participants were unaware that they were unsolvable) and has been used in many previous experiments on deviance and prescriptive norms (e.g., Nagin & Pogarsky, 2003; Ward et al., 1994; Yu, Ballantyne, North, & Crocker, 2008). The second was inspired by experiences as a proctor of standardized tests—and was measured as continuing to work after being instructed to stop. Both involve bending rules to defy the prevailing moral code.

We also wanted to extend Muraven and Slessareva's (2003) findings that motivation can moderate the depletion effect. Given previous research that has shown that people will violate prescriptive norms only in the absence of accountability cues (e.g., Nagin & Pogarsky, 2003), we assumed that depleted people will transgress only when they perceive the likelihood of getting caught to be low. This is an additional test of whether people can overcome depletion if sufficiently motivated (Muraven & Slessareva, 2003). Because the descriptive norms are less injunctive and more advisory (Cialdini & Goldstein, 2004; Reno et al., 1993), we assumed accountability cues should be much less unimportant when examining transgressions of descriptive norms. Hence, in this experiment, the research instructed some participants to put their identifying information at the top of the sheet with the problems, so their answers could potentially be verified. However, there was no obvious verification of continued working when told to stop for any of the participants. Rather, the computer recorded the time unobtrusively and without participants' notice.

Finally, in a more exploratory manner, we examined the interplay between trait self-control and situational fluctuations in self-control capacity. Because a great deal of work has demonstrated that trait self-control affects criminality (Pratt & Cullen, 2000), we felt it was important to include that factor as an individual difference variable in our analyses of the violation of prescriptive norms. We also wanted to investigate whether there is any relationship between state depletion of self-control and trait levels of stable self-control in deviance.

Method

Participants. The present sample consisted of 102 (67 female, 34 male, and 1 who declined to identify himself or herself) undergraduate students at the University at Albany completing a course requirement. Of these, 79% (81 participants) indicated that they were of European origin. The remaining 21% were distributed among participants of African origin (4 participants, 4%), Asian decent (9 participants, 9%), and mixed and other races (8 participants, 8%). Also, 8 participants (8%) had a Hispanic or Latino heritage.

Procedures. Participants were run in groups of up to 12, although they did not interact with each other and could not see each other's responses. All instructions were presented on the computer, and each testing session took approximately 30 minutes. The computer also handled randomization to

condition. Participants were told that they were taking part in an investigation of cognitive skills and hence were unaware of the true nature of this experiment's hypotheses.

Participants first completed a typing test designed to deplete self-control strength, which has been used successfully in previous studies (e.g., Muraven, Shmueli, et al., 2006). They were instructed to retype as quickly and as accurately as possible a 150-word excerpt from an advanced statistic book that appeared on the computer screen. What they typed did not appear on the screen, although the computer recorded all key presses. The instructions differed slightly across conditions. Participants in the Type All condition received no further instructions and typed the passage as it appeared. Participants in the No *E*s condition were told that they should not type the letter *e* or hit the space bar. In other words, their final passage should contain no *e*s and no spaces. Inasmuch as typing is a well-learned and automatic task for most people, not hitting the *e* key or space bar should require inhibition or self-control. Thus, we presumed that participants in the No *E*s condition should be exerting more self-control than participants in the Type All condition.

Immediately after typing the passage, participants completed a procedure and manipulation check. This consisted of questions about their research experience, such as the amount of self-control they exerted, their interest in the rest of the experiment, and how aversive they found the experience. Based on previous research, we expected the conditions to differ in the amount of self-control required but not in any other meaningful way. Participants also completed the Brief Mood Introspection Inventory (Mayer & Gaschke, 1988). This is a well-validated scale of mood and arousal and was used to further test alternative accounts for the results.

Following these two scales, participants were given a set of logic puzzles to solve. The puzzles were taken from the analytical ability section of the GRE. It consisted of a complex set of relationships, followed by four possible results that could be deduced from those relationships. Participants were told to solve as many of the questions as possible in the time allotted. Also, participants knew they had a fixed amount of time to work on the problems, but they were not told exactly how long. The experimenter informed participants that they would have to turn in their logic problems at the end of the experiment. In the Anonymous condition, participants were told to not put any identifying information on their logic problems. Thus, because they were being testing in groups, there would be no easy way to verify the accuracy of their self-reported account of number of problems solved. In the Identified condition, participants were asked to put their university identification number and initials at the top of the page. In this condition, the experimenter could match their written record with what they reported on the computer. In other words, the likelihood of getting caught cheating should be perceived to be much higher in the Identified than in the Anonymous condition.

The questions had been modified so that none of the possible responses was correct (although this information was not revealed to the participants, and it was not clearly obvious without extensive time to work through the problems repeatedly that this was the case). After 3 minutes, the computer flashed a warning and instructed participants to stop working. At that point, they were asked to indicate (on the computer) how many questions they solved and press a button to continue with the rest of the experiment. The computer timed how long participants waited from the time they were told to stop to the time they actually pressed the button. In other words, there were two measures of rule-breaking behavior: working after time was called and number of problems they reportedly solved (as the problems were unsolvable). It should be noted that participants did not know that the experimenter could detect who was working after time was called. To them, working after time was called was always anonymous.

Finally, participants completed a brief demographic questionnaire and a trait measure of self-control created by Grasmick et al. (1993). This scale consists of 24 items on six subscales, answered on a 5-point Likert-type scale (anchors of 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*). Following the precedent of Grasmick et al., we z scored the six subscales and added them together to create a unidimensional scale of self-control ($\alpha = .79$).

Participants were then debriefed about their research experience. No participant indicated that he or she was aware of the true nature of the experiment. They were similarly unaware of the self-control strength model and theories of deviance. Participants who turned in their answer sheets with their identification on it indicated that they thought their answers were more likely to be double-checked than participants who turned in anonymous answer sheets.

Results

Manipulation check. Gender, ethnicity, and religious background were not related to any outcome variable, nor did males and females differ in trait self-control. These demographic variables did not interact with any independent variable either. Specifically, although the trait self-control measure was administered after the manipulation, scores did not differ across experimental condition. Hence, all results reported below are pooled across subgroups.

As shown in Table 1, participants who were instructed to not type *e*s reported inhibiting themselves more as compared to participants who were free to type all letters. This suggests that participants in the No *E*s group exerted more self-control than participants in Type All group. Despite the differences in the amount of self-control required, the groups did not differ on other key variables, including mood, arousal, and effort exerted.

Cheating behavior. We first investigated how many unsolvable problems participants reported solving. In particular, we

Table 1. Experiment 1: Responses on Key Variables Across Conditions

	Type All		No *E*s		
Variable	*M*	*SD*	*M*	*SD*	*t*
E's typed	124	15.50	20.40	20.40	29.40*
Mood	.45	8.72	.61	8.13	.10
Arousal	23.30	4.66	22.70	4.68	.60
Inhibition	2.23	1.54	4.09	1.76	5.67*
Effort	3.39	1.26	3.00	1.38	1.50

$N = 102$.
*$p < .001$.

Table 2. Experiment 1: Outcome Variables, Based on Typing Instructions and Experimenter Oversight

	Type All				No *E*s			
	Anonymous		Identified		Anonymous		Identified	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Reported solving	15%		32%		50%		28%	
Number solved	1.92	1.14	2.44	1.29	2.81	1.17	2.32	1.28
Working after time called (seconds)	37.10	28.40	20.30	18.00	46.80	31.10	36.60	34.00

$N = 102$. Reported solving is the percentage of participants in each condition who reported solving at least one problem.

examined how many participants reported solving at least one puzzle. In other words, we dichotomized our outcome variable to cheating–no cheating. Using a logistic regression (Jaccard, 2001), we found a main effect for prior self-control, $B = 3.03$, $SE = 1.38$, Wald = 4.82, $p = .028$. There also was a main effect for whether they put identifying information on the sheet, $B = 2.42$, $SE = 1.28$, Wald = 3.48, $p < .05$. Most importantly, there was a significant interaction between these terms, $B = 1.65$, $SE = 0.834$, Wald = 3.93, $p < .05$. Adding the interaction term significantly improved the model fit based on change in –2 log likelihood (from 124.5 to 119.8), $\chi^2(1) = 4.70$, $p = .03$. Taking the antilog of the regression coefficient indicates that participants who had to exert self-control and who did not have to turn in their paper were about 5.2 times more likely to report solving problems than other participants.

Alternatively, we analyzed the total number of problems participants reported solving using a 2 (prior self-control: Type All vs. No *E*s) × 2 (name on paper: Anonymous vs. Identified) ANOVA. The total number of problems falsely reported solved may represent a slightly different psychological process, and hence the results may not exactly match whether any problems are falsely reported as solved. For total number solved, there was no main effect for prior self-control, $F(1, 98) = 2.47$, $p = .11$, or name on paper, $F(1, 98) = 0.004$, $p = .95$. The lack of main effect for prior self-control probably reflects the power of fear of getting caught—we predicted that cheating behavior is most likely to occur when individuals are low in self-control and believe they are unlikely to get caught. This was confirmed by the significant interaction between prior self-control and whether their answers were easily identifiable, $F(1, 98) = 4.20$, $p = .043$ (see Table 2). A contrast analysis indicated that participants who had to exert self-control initially and who felt that their responses could not be easily identified falsely reported solving more problems than everyone else, $t(98) = 1.94$, $p < .05$.

We also examined how long participants worked after time was called. As noted above, participants were not aware that the computer kept a record of how long they worked on the problems after time was called, and thus all participants effectively had no experimenter oversight. In other words, there should be a main effect only for previous exertions of self-control, $F(1, 98) = 3.78$, $p < .05$. Unexpectedly, the main effect for whether they put their name on the paper was significant too, $F(1, 98) = 4.11$, $p = .045$. The interaction between anonymity and previous exertion of self-control was not significant, $F(1, 98) = 0.248$, $p = .62$ (see Table 2). Participants who had to exert self-control in the first part of the experiment worked longer after time was called than participants who did not exert self-control initially.

Reinforcing our conclusions that the results were not a product of mood or arousal, there was no correlation between mood and number of questions purportedly solved, $r(102) = .15$, $p = .11$, and mood and working after time was called, $r(102) = .09$, $p = .33$. Arousal was similarly unrelated to number purportedly solved, $r(102) = .02$, $p = .86$, and working after time was called, $r(102) = .07$, $p = .50$. For participants whose responses were anonymous, there was a correlation between self-reported inhibition on the first task and number of problems purported solved, $r(51) = .25$, $p < .05$. That correlation was not significant for participants whose responses could be identified, $r(51) = .05$, $p = .72$. In other words, the more effort participants exerted at inhibiting themselves, the more likely they were to cheat, although this was not related to their mood or arousal.

Trait self-control. Previous research has shown that trait self-control is a significant predictor of cheating behavior (Cochran et al., 1998; Nagin & Pogarsky, 2003). We measured trait self-control in the present experiment to replicate those results while examining the role of opportunity as well. Using multiple regression, we found that trait self-control on its own was significantly negatively related to number of problems that participants reported solving, $B = –0.13$, $SE = 0.059$, $t(98) = 2.12$, $p = .036$. Trait self-control predicted number of problems falsely reported solved. Anonymity alone was not related to number solved, $B = 0.032$, $SE = 0.252$, $t(98) = 0.127$, $p = .90$. The interaction between not putting one's name on the paper and trait self-control was significant, however, $B = 0.162$, $SE = 0.082$, $t(98) = 1.97$,

Table 3. Experiment 1: Multiple Regression Predictors of Number of Impossible Anagrams Reported Solved

Predictor	*B*	*SE*	*t*	R^2
Step 1				.03
Anonymity	.48	.34	1.42	
Trait self-control	.12	.06	1.95*	
Step 2				.07
Anonymity × trait self-control	.16	.09	1.86†	
Step 3				.08†
Typing condition	.76	.38	2.03*	
Step 4				.11*
Anonymity × typing condition	.99	.50	1.98*	
Step 5				.01
Anonymity × typing condition × trait self-control	.08	.16	.46	

N = 102.
†$p < .07$. *$p < .05$.

Table 4. Experiment 1: Multiple Regression Predictors of Working After Time Was Called

Predictor	*B*	*SE*	*t*	R^2
Step 1				.07**
Trait self-control	2.98	1.12	2.65***	
Step 2				.10**
Typing instructions	13.10	6.56	1.99*	

N = 102.
*$p < .05$. **$p < .01$. ***$p < .001$.

$p < .05$. An examination of the slopes separately found that trait self-control was related to the number of falsely reported solved for people who felt anonymous, $t(98) = 1.99$, $p < .05$, but not for those who had to put identifying information on the page, $t(98) = 1.22$, *ns*. This interaction between trait self-control and anonymity suggests that the effects of trait self-control were magnified when the likelihood of getting caught was low.

For working after time was called, there was a main effect for trait self-control, $B = 3.43$, $SE = 1.55$, $t(98) = 2.21$, $p = .03$. The main effect for anonymity was significant as well, $B = 14.2$, $SE = 6.60$, $t(98) = 2.16$, $p = .03$. The interaction between those terms was not significant, $B = 0.703$, $SE = 2.25$, $t(98) = 0.312$, $p = .76$. We did not expect to find an interaction here since participants felt unlikely to get caught working after time was called.

Finally, we examined whether state self-control can explain cheating behavior above and beyond participants' trait self-control. As shown in Table 3, individuals who were instructed not to type the letter *e* reported solving more problems when their answers were more anonymous, even when trait self-control was already entered into the equation, $\Delta R^2 = .03$, $F(1, 95) = 4.26$, $p = .041$. Similarly, Table 4 shows that state self-control predicted working after time was called even after controlling for trait self-control, $\Delta R^2 = .03$, $F(1, 95) = 3.96$, $p < .05$. The results indicate that cheating behavior is predicted by both trait and state self-control.

For both measures of cheating, the interaction between state and trait self-control did not significantly improve the regression equation. In other words, the effects of exerting self-control were the same for individuals high and low in trait self-control.

Discussion

The results of this experiment suggest that individuals lower in self-control are more likely to engage in unethical and counternormative behavior (cheating and lying), especially when they believe there is little opportunity for getting caught as compared to individuals higher in self-control. Self-control in this experiment was tested in two ways: at the state level and at the trait level. Replicating previous work (Cochran et al., 1998; Nagin & Pogarsky, 2003), individuals lower in trait self-control worked longer after being told to stop and were more likely to misrepresent how many problems they correctly solved. This was especially true when accountability cues were weak—when participants believed they could get away with cheating.

This relationship also held when self-control was examined at the state level, using a self-control depletion paradigm. Individuals who exerted self-control by typing without using the letter *e* were more likely to subsequently cheat (working after time had been called) and lie (claiming to solve impossible problems) than individuals who worked on a similar task that did not require self-control, especially when the opportunity was present.

The measure of cheating used in this experiment is very similar to measures used in other studies of deviance and violation of social norms (e.g., Nagin & Pogarsky, 2003; Ward et al., 1994; Yu et al., 2008). Although people may mistakenly think they solved a problem when they did not, it is difficult to understand the interaction between depletion and accountability cues without assuming some level of dishonest behavior. That is, even if one assumes depletion somehow makes people more likely to mistakenly think they solved a problem, it is unclear why this should be true only when the experimenter is not going to check on their work. Similarly, the finding that depleted individuals are more likely to work after time is called could reflect some level of confusion associated with depletion (although the theoretical rationale for this is not clear) rather than more deceitful motives. However, the fact that a similar pattern exists for trait self-control suggests low self-control is a better explanation.

Cheating and lying are two examples of the violation of ethical and socially demanded rules. Put another way, the prescriptive norms against cheating are very explicit and well defined, and people are frequently reminded of them. Many other social norms are more descriptive, however. In descriptive norms, the expected behavior is less clear, less externally sanctioned, and often implicit (Cialdini & Trost, 1998). That is not to say that descriptive norms are less

important to societal functioning or personal adjustment but that they differ in significant ways from prescriptive norms. The second study was designed to examine whether self-control (and hence depletion of self-control strength) would affect adherence to more descriptive norms the same way it affects prescriptive social behavior.

Experiment 2: Descriptive Norms

Overall, people are typically polite (Brown & Levinson, 1987). The norms for politeness, however, are not prescriptive but rather descriptive as anyone who has watched people failing to hold doors open for the next person can attest, but there are wide variations in adherence to such norms. The broader question is whether the mere act of following descriptive norms requires self-control.

In the present study, we examined the descriptive norm of saying "thank you." There is a clear and universal expectation for saying thank you when someone has done a favor or helped someone else (Samuel & Vetter, 2006). At the same time, there is considerable variation in that people often fail to appreciate others' help. Such ingratitude, although unpleasant and potentially socially harmful in the long run, is rather implicit. Hence, saying "thank you" is a good example of a descriptive norm.

In the current study, the experimenter held open doors for each participant while surreptitiously recording whether he or she was thanked. We predicted that individuals depleted of their self-control strength would say thank you less often than nondepleted individuals, which would suggest that following descriptive norms also requires self-control. Because violating descriptive norms and being impolite rarely result in significant punishment, accountability cues should be a relatively weak motivator of behavior. That is, unlike prescriptive norms, we did not think accountability cues would moderate the relationship between depletion and politeness, and hence we did not include it as a factor in this experiment.

Method

Participants. A total of 36 undergraduates (19 males and 17 females) from the University at Albany participated in this experiment. Our sample was 58% Caucasian, 19% Asian, and 8% African American, and 15% reported "other" or preferred not to report their race. The experimenter was blind to the participants' condition because assignment to conditions was done online by a computer program that presented all instructions to participants.

Procedure. Participants completed a typing task similar to the one utilized in Experiment 1. Everyone typed two neutral paragraphs about behavior and cognitions. In the nondepletion condition, people typed both paragraphs normally, whereas people assigned to the depleted condition were not allowed to type the letter *e* or use the space bar. Although both typing tasks were rather difficult, only the depleted people had to resist the automatic impulse to press the prohibited keys. After completing the typing task, participants answered some questions about the manipulation. Along with questions about how much self-control the task required, we included questions about how annoying, frustrating, and unpleasant the typing task was. These questions, rated on a 12-point scale, were designed to examine other potential causes of impolite behavior.

Next, we measured participants' politeness by verbally demonstrating recognition of a favor during a door-opening procedure. The experimenter told the participant that the experiment would continue in another room, and the participant followed the experimenter outside the lab and past eight doors, which the experimenter politely held for the trailing participant. While passing through the doors, the experimenter secretly counted how many times the participant said "thank you" or "thanks."

Upon returning to the lab, each participant answered the Agreeableness portion of the Big Five Mini-Markers questionnaire (Saucier, 1994), which has demonstrated excellent reliability and validity. This measure was included because we predicted that politeness in response to having a door held open may be positively correlated with this personality trait. Participants also responded to questions about how polite and rude they believed they were during the experiment. Also, the experimenter (again, who was blind to condition) rated how polite the participant was. We predicted that these three measures should be positively correlated with the amount of thank yous during the door opening procedure.

Results

Manipulation checks. Before testing the hypotheses, we needed to establish that depleted participants used more self-control resources and that depletion did not affect negative feelings such as frustration or annoyance. As displayed in Table 5, depleted participants reported that the typing task required more self-control than nondepleted participants, $t(34) = 2.98$, $p < .01$. Depleted participants did not report that the typing task was significantly more annoying, $t(34) = 0.43$, $p = .67$, or frustrating, $t(34) = 0.25$, $p = .85$, than those who were not depleted. This provides some evidence that any difference in politeness was probably not driven by any frustration or annoyance produced by typing task. Also, there were no significant differences regarding the unpleasantness of the typing task, $t(34) = –0.12$, $p = .91$. Because the depleted participants did not report that the typing task was any more unpleasant, it is unlikely that depleted participants would be less polite than nondepleted participants simply because they previously completed a more unpleasant task.

Although saying "thank you" or "thanks" when someone else opens a door should be a measure of polite behavior, this behavioral measure should be related to various self-reported measures of politeness, including agreeableness. Indeed, the number of thank yous stated during the door task was positively

Table 5. Experiment 2: Outcome Variables, Based on Typing Instructions and Experimenter Oversight

	Type All		No Es	
	M	*SD*	*M*	*SD*
Self-control	7.06	2.13	9.39	2.55
Annoying	8.22	2.67	8.61	2.75
Frustrating	5.94	3.08	5.67	3.71
Unpleasant	8.39	2.52	8.28	3.16
Agreeableness	35.11	5.40	33.28	5.33
Thank yous	3.56	2.15	1.28	1.71
Self-reported politeness	4.50	0.51	4.44	0.86
Experimenter-reported politeness	4.83	0.92	4.50	0.99

correlated with agreeableness, $r(36) = .27$, $p = .05$. Overall, more agreeable participants said thank you more often and the less agreeable (classified as disagreeable and rude) said thank you less often. At the end of the experiment, we also assessed how participants rated themselves on their own politeness during the experiment. Participants who said thank you more often during the door task reported that they were more polite to the experimenter, but this finding did not reach conventional significance levels, $r(36) = .22$, $p = .10$. Although this finding is not technically significant, this trend indicates that participants were aware that they were not entirely polite to the experimenter. Furthermore, the experimenter's ratings about the participants' politeness after the typing task were positively associated with how many times the participant said thank you, $r(36) = .33$, $p = .03$. The experimenter's and participants' ratings of the participants' politeness were positively correlated, $r(36) = .33$, $p = .05$. Means and standard deviations for all reported variables are listed in Table 5.

Depletion and politeness. To determine if depletion decreased politeness, we conducted a *t* test, which revealed that depleted participants said thank you less often than nondepleted participants, $t(34) = 3.52$, $p < .01$. This finding yields further evidence that fewer self-control resources can lead to more norm violations. Also, this finding was significant even when controlling for any annoyance, frustration, and unpleasantness resulting from the typing task, $B = 2.42$, $SE = 0.66$, $t(34) = 3.67$, $p = .001$. A regression analysis indicated that participants' self-reports about how much self-control the typing task required also predicted less politeness, $B = –0.33$, $SE = 0.14$, $t(34) = –2.44$, $p = .02$. Like the depletion analyses, the amount of self-control expended predicted less politeness even when controlling for any annoyance, frustration, and unpleasantness resulting from the typing task, $B = 0.34$, $SE = 0.15$, $t(34) = 2.32$, $p = .03$. Thus, depletion was able to account for polite behavior, whereas negative aspects of the typing task were unable to predict politeness.

Perhaps participants believed that saying thank you once counted for all subsequent doors. To test this possibility, we dichotomized the dependent variable so that never saying thank you was coded as 0 and saying thank you at least once was coded as 1. Again, we found similar results. As revealed in a chi-square test, nondepleted participants were more likely to say thank you at least once (out of the eight opportunities) than depleted participants (50% vs. 6%), $\chi^2(1) = 8.86$, $p < .01$. A log linear regression also indicated that participants who said the typing task required more self-control were more likely to never say thank you to the experimenter, $B = 0.25$, $SE = 0.16$, Wald = 2.31, $p = .04$. Overall, our results seem to indicate that depleting self-control resources leads to less polite behavior.[1]

Discussion

The results of this experiment indicate that self-control depletion led to counternormative behavior as measured by not adhering to politeness norms. Individuals whose self-control was depleted were less likely to say thank you when someone opened the door for them as compared to individuals whose self-control was not depleted. These findings suggest that self-control is needed to follow norms, regardless of if those norms are prescriptive or descriptive. When factors that could potentially affect politeness, such as annoyance, frustration, and unpleasantness, were controlled for, only self-control depletion was found to predict impolite behavior. This study provided evidence that self-control resources are needed to abide by social and conventional norms.

General Discussion

Across two experiments, we found that self-control is critical for following social norms. Using a depletion paradigm (Muraven & Baumeister, 2000; Muraven et al., 1998), individuals whose self-control strength was depleted were less likely to adhere to both prescriptive and descriptive norms. Depleted individuals were more likely to lie and cheat as well as to be rude as compared to nondepleted individuals.

These findings are perhaps less surprising for prescriptive norms than for descriptive norms. There is extensive literature linking low self-control to criminal behavior (e.g., Pratt & Cullen, 2000), although most of that research focuses on the trait of self-control using correlation methods. The present findings, using experimental methods, imply a causal relationship—low self-control is a direct and proximal cause of antisocial behavior.

Previous research linking adherence to descriptive norms to self-control was much more circumspect. For instance, low levels of trait self-control have been associated with less trait agreeableness (Tangney, Baumeister, & Boone, 2004). Likewise, research on emotional work has found that being polite, well-mannered, and agreeable depletes self-control strength (Goldberg & Grandey, 2007). Hence, this research provides additional evidence suggesting that normative behavior requires self-control.

These findings need to be integrated with Aarts and Dijksterhuis's (2003) conclusion that normative behavior is often unconscious, effortless, and unintended. At the very least, Aarts and Dijksterhuis's findings indicate that people need to be primed with social cues to follow norms (Cialdini & Goldstein, 2004). Showing that unconscious (or conscious) reminders of situational expectations lead to an increase in normative behavior does not necessarily disallow the fact that people must exert self-control to follow those norms. Instead, these primes might operate like the accountability cues in Experiment 1—they increase individuals' motivation to exert self-control.

Clearly, politeness and other descriptive norms must be taught and internalized. Although some have argued that these patterns of acting are automatized so that no effort or self-control is required, we suggest that, at least for some, these behaviors are less automatic than many (including us) wish. That is not to say that there are not some behaviors that are so automatic or so prohibited that they are not affected by the depletion of self-control. Indeed, it is likely that some thoughts never even cross people's mind, so no self-control is required at all. For instance, most Americans do not have to think about driving on the right side of the road or smiling at friends. These behaviors are so overlearned, they are truly automatic (Bargh, 1994), and no conscious control is required at all. Indeed, participants in our studies kept their clothes on and did not swear at the experimenter. A fruitful line of research may be to catalogue which behaviors are automatic and which are not; the present depletion paradigm may be useful in that regard. However, the results suggest that for a broad class of both prescriptive and descriptive norms, behavior is not fully automatized and self-control is required.

There are several other noteworthy findings as well. In Experiment 1, both state and trait self-control were significant predictors of lying and cheating. The effects of exerting self-control on deviance were above and beyond the effects of trait self-control alone. Even a person high in trait self-control is at risk for deviance if he or she had to exert self-control recently. Individuals can fluctuate around their trait levels of self-control, based on their recent behavior. This may help to explain some of the variance in deviant behavior.

We also examined how motivation, as operationalized by fear of getting caught, affected cheating and lying. Some participants were led to believe that the experimenter could easily verify their answers; others were led to believe that verification would be difficult. This is important because theorists (Gottfredson & Hirschi, 1990) have suggested that individuals low in self-control are especially likely to engage in criminal behavior when the certainty of getting caught is low. Consistent with that hypothesis, we found that individuals low in self-control (both trait and state) were more likely to lie about their performance when verification of the truth was unlikely. The fear of getting caught was motivating, causing individuals to overcome their state of depletion (Muraven & Slessareva, 2003). Participants' perception of getting caught working after time was called was always low, thus explaining the differences between outcome variables.

Our approach strongly suggests that following social norms (both prescriptive and descriptive) requires self-control. As with all experiments, there are always questions about alternative explanations, however. We did our best to rule out as many of these as possible. In particular, individuals who exerted self-control were in the same mood as individuals who did not exert self-control. Likewise, they did not differ in how aroused or how aversive they found the experiment. These factors also did not correlate with the outcome of antisocial behavior in either experiment, further reinforcing the conclusion that they are not viable explanations for the results. The only difference between the two groups was the amount of inhibition (self-control) required by the initial typing task. This did correlate with the outcome and thus strongly suggests that inhibition on the first task is predictive of who will cheat, lie, or be rude.

Beside questions of internal validity, one may question these experiments' external validity. Obviously, the sort of antisocial behavior in the present experiments is not the sort of behavior that lands one in prison. However, it does closely model the sort of everyday deviant behavior that occurs on college campuses regularly. One could also argue that the experience of cheating and lying in an experiment is not phenomenologically all that different from cheating on a term paper or fudging numbers in an accounting program. That is, in both cases, one is violating the rules impulsively, the odds of getting caught may be low, one should know better than to lie and cheat, and the behavior may be regretted later. This is a classic case of an experiment low in mundane realism but high in experimental realism.

To conclude, it appears that low self-control is important to following social norms. The idea that self-control can affect antisocial behavior may also have several significant implications. For example, dealing with stress appears to deplete self-control capacity (Muraven & Baumeister, 2000). Thus, stress is likely to be associated with a loss of control. This may help explain why certain risk factors are associated with greater deviance as well as when deviance is likely to occur. Conversely, the results also imply that just going through day-to-day life and trying to fit in and act appropriate may be depleting. This depletion might result in poorer self-control on other important behaviors, such as dieting, controlling addictions, or anger management. In short, simply being nice may be harmful to self-control.

Authors' Note

Amber DeBono and Dikla Shmueli contributed equally to this article.

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Note

1. Depletion, however, did not account for experimenters' and participants' ratings of the participants' politeness, *ps* > .30. We did not hypothesize that depletion would reduce judgments of politeness. Instead, we predicted that the norm to be polite—by saying thank you—would be followed less often in the depletion condition. It is possible that depletion made people unaware of the need to be polite, instead of interfering with their ability to follow social norms.

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