

Florida State University Libraries

Electronic Theses, Treatises and Dissertations

The Graduate School

2005

Self-Regulation and Sexual Restraint: Dispositionally and Temporarily Poor Self- Regulatory Abilities Contribute to Failures at Restraining Sexual Behavior

Matthew Thomas Gailliot



THE FLORIDA STATE UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

SELF-REGULATION AND SEXUAL RESTRAINT: DISPOSITIONALLY AND
TEMPORARILY POOR SELF-REGULATORY ABILITIES CONTRIBUTE TO FAILURES
AT RESTRAINING SEXUAL BEHAVIOR

By

MATTHEW THOMAS GAILLIOT

A Thesis submitted to the
Department of Psychology
in partial fulfillment of the
requirements for the degree of
Master of Science

Degree Awarded:
Summer Semester, 2005

The members of the Committee approve the thesis of Matthew T. Gailliot defended on September 17, 2004.

Roy F. Baumeister
Professor Directing Thesis

Dianne M. Tice
Committee Member

Rob Contreras
Committee Member

The Office of Graduate Studies has verified and approved the above named committee members

ACKNOWLEDGEMENTS

I would like to thank Roy Baumeister, an extraordinary adviser and mentor, whose knowledge, encouragement and patience were vital throughout the development of this project. In addition, I thank my committee members Dianne Tice and Rob Contreras for their constructive comments and guidance.

I also extend thanks to the undergraduate students who assisted with data collection and entry on this project. Their dedication and commitment to this experiment were indispensable and it was a pleasure to work with such a talented group of individuals.

Finally, I wish to thank my family and friends whose confidence and support were instrumental to this and other undertakings.

TABLE OF CONTENTS

LIST OF FIGURES.....	v
ABSTRACT	vi
INTRODUCTION	1
PILOT STUDY	6
STUDY 1	8
STUDY 2	15
STUDY 3	25
STUDY 4	28
GENERAL DISCUSSION	35
FOOTNOTES	40
APPENDIX	41
REFERENCES	44
BIOGRAPHICAL SKETCH	49

LIST OF FIGURES

1. Participants' reported likelihood of engaging in sexual infidelity as a function of depletion condition and participant gender (Study 2)	20
2. Participants' reported likelihood of engaging in sexual infidelity as a function of depletion condition and sociosexual orientation (Study 2)	22
3. Participants' reported likelihood of engaging in sexual infidelity as a function of trait self-control and gender (Study 2)	23
4. Extent of sexual behavior during the experiment as a function of depletion condition and couples' prior sexual experience (Study 4)	33

ABSTRACT

The current work tested the hypothesis that failures in sexual restraint are caused by low self-control. Results based on dispositional differences in self-control, experimental manipulations of self-control, and narrative accounts of sexual restraint supported this hypothesis. Low self-control was associated with poor dispositional and episodic sexual restraint in participants' daily lives. In the lab, participants with low (vs. high) self-control were more likely to fail at stifling their sexual thoughts, inhibiting their willingness to engage in sexual infidelity, and restricting the extent of their sexual behavior with their romantic partner. Further, there was some evidence that the effects of self-control were strongest among those with the strongest sexual desires (men and sexually unrestricted individuals). Self-control appears to be crucial in sexual restraint.

INTRODUCTION

Humans are sexual creatures by nature. The strength of the desire for sex and reproduction is probably among the strongest of the human psyche. Yet people are not free to express or act upon all of their sexual desires. All known societies and cultures seek to regulate sexual behavior and therefore put pressure on individuals to curb their impulses and desires so as to bring their behavior into line with societal requirements. Although the nature of these demands and norms varies substantially across cultures, most everyone must exert control over his or her sexual behavior at some point during the lifespan. For example, many cultures restrict or prohibit premarital, extramarital, and homosexual sex. Social regulations prescribe which sexual acts are permitted with whom, where, and under what conditions. Demands that people control their sexuality are both formal (e.g., laws, religious doctrines) and informal (e.g., social norms), and they target both men and women, though not necessarily to the same degree (e.g., Baumeister & Twenge, 2002; DeLamater, 1989).

By what means, however, are people capable of controlling their sexual behavior? We propose that self-control (or self-regulation) is one important means through which individuals modify their sexual behavior. Self-control is the capacity to override one's desires, thoughts, and habitual patterns of behavior and seems especially useful in allowing people to adhere to personal goals and social regulations (Baumeister, 2005; Carver & Scheier, 1981). Sexual desires arise spontaneously and perhaps uncontrollably, and therefore people must self-regulate so as to refrain from expressing those desires in socially inappropriate or other undesirable ways.

Laws, norms, and social pressures have not been universally successful at eliminating sexual misbehavior, however. The costs of such behaviors seem high, potentially resulting in divorce, disease, teenage pregnancy, and crime. Why do people sometimes fail to control their sexual behavior? The current investigation examined the possibility that some sexual activities, especially ones that go against prevailing norms, are caused in part by low self-control. It explored both dispositional and situational forms of low self-control. Some people have dispositionally poorer self-regulatory abilities than others, and it seems plausible that such individuals will be especially unlikely to restrain their sexual behavior when they should. Likewise, people are more capable of self-regulating at some times than at other times, and failures in sexual restraint should be most common when the capacity to self-regulate is

temporarily reduced or impaired.

In particular, the present research focused on how low self-control causes people to violate social norms by indulging their sexual desires and impulses. Most norms, laws, morals, and other rules about sex involve restricting rather than promoting sexual behavior, and so the present research focused on controlling sexual behavior in contexts that required sexual restraint. In these situations, failures to control one's sexual behavior should be marked by increased sexual activity or indulgence. We predicted that dispositionally and temporarily poor self-regulatory abilities would undermine sexual restraint and therefore increase sexual activity or indulgence. The following sections will provide an overview of the research on self-regulation and the rationale for our hypotheses.

Self-Control as a Trait and Limited Resource

Individuals differ in their dispositional ability to exert self-control (trait self-control) and also in their current, momentarily available resources for exerting self-control (state self-control). In terms of trait self-control, some individuals demonstrate a strong ability to self-regulate throughout their lifespan, stable from early childhood through adulthood (e.g., Mischel, Shoda, & Peake, 1988; Shoda, Mischel, & Peake, 1990). High trait self-control appears to foster a broad range of desirable abilities, such as developing and maintaining interpersonal popularity and healthy relationships, excelling in school, coping with stress, eating properly, and avoiding addictive behaviors (Mischel et al., 1988; Shoda et al., 1990; Tangney, Baumeister, & Boone, 2004). The broad range of benefits experienced by people high in trait self-control suggests that self-control is an all-purpose tool that allows individuals to self-regulate in myriad domains. For present purposes, high trait self-control should enable people to regulate their sexual responses more effectively.

There are also state fluctuations in self-control. Research on self-control suggests that self-control functions akin to a muscle or strength (Gailliot & Baumeister, in press; for a review see Muraven & Baumeister, 2000). Engaging in a single act that requires self-control seems to deplete self-control strength, thereby reducing the ability to exert self-control subsequently. To illustrate, participants in one study first engaged in a task that required self-control (i.e., suppressing thoughts of a white bear) or an equally difficult control task that did not require self-control (i.e., solving math problems; Muraven, Tice, & Baumeister, 1998). Next, participants watched a funny film and were asked to refrain from laughing, smiling, or expressing any other

emotions while watching the film (an instruction that clearly required participants to override their natural responses). Compared to participants in the control condition (who solved math problems), participants who had exerted self-control (by suppressing their thoughts) were less able to control their emotional reactions. During the film they laughed, smiled, and expressed more emotions than control participants. Presumably, the initial self-control task depleted their self-control strength, and consequently they became less able to self-regulate (i.e., control their emotions). Thus, after an initial attempt at self-control, an individual's current level of self-control is reduced. Indeed, a growing number of studies support such a pattern (e.g., Finkel & Campbell, 2001; Gordijn, Hindriks, Koomen, Dijksterhuis, & Van Knippenberg, 2004; Richeson & Shelton, 2003; Schmeichel, Vohs, & Baumeister, 2003; Vohs, Baumeister, Ciarocco, in press).¹

Research on self-regulation indicates that dispositional (trait self-control) and situational (depletion) differences in self-regulatory abilities shape the ability to control one's behavior. In the current investigation, we examined whether trait self-control and self-regulatory depletion would influence abilities in sexual restraint.

Self-Control and Sexual Restraint

The fact that a sexual impulse occurs at all may be beyond the individual's conscious control, insofar as sexual thoughts and desires are naturally stimulated by internal or external cues that signal sexual opportunities. Although the occurrence of sexual impulses may not be controllable, however, their expression via behavior is controllable. People may actively refrain from engaging in sexual behaviors despite their sexual impulses. By definition, such behavior modification requires self-regulation.

Several patterns of research findings suggest a link between self-control and sexual restraint. First, an inability to self-regulate is central to the definition of sexual control disorders (see Wiederman, 2004 for a review). People who experience compulsive sexuality or sexual addiction suffer primarily from an inability to control their sexual behavior (e.g., frequent masturbation, sleeping with strangers; Barth & Kinder, 1987, Carnes, 1983; Coleman, 1992; Earle & Crow, 1990; Gold & Heffner, 1998). To control one's behavior is to exert self-control.

Second, certain patterns of sexual misbehavior are correlated with low self-control in other domains. For instance, people unable to control their sexuality are more likely than people with greater control over their sexual behavior to become addicted to drugs and alcohol and to

fail to control their eating behavior (Exner, Meyer-Bahlburg, Ehrhardt, 1992; Koepp, Schildbach, Schmager, & Rohner, 1993; Zannarini et al. 1998). Drug addiction and some eating disorders are associated with low self-control (Tangney et al., 2004) and so it is possible that self-control is one underlying factor that causes the same individuals to be unable to control their drug use, eating, and sexuality. Likewise, repeat sex offenders (who presumably are unable to control their sexual behavior) may be more impulsive in non-sexual behavior than are non-sex offenders and more likely to exhibit other criminal behaviors (e.g., Armentrout & Hauer, 1978; Giotakos, Vaidakis, Markianos, & Chrisodoulou, 2003; Hanson & Bussiere, 1998; McGrath, 1991). It is believed that low self-control is a primary causal factor of impulsive, criminal behavior (Gottfredson & Hirschi, 1990; Pratt & Cullen, 2000) and so it is possible that low self-control causes the same individuals to be impulsive and to commit both sexual and non-sexual offenses.

A third link between self-control and sexual restraint is that measures of trait self-control have been shown to predict some sexual behaviors, such as using birth control or condoms (Wills, Gibbons, Gerrard, Murry, Brody, 2003; Hernandez & DiClemente, 1992; Kalichman et al. 1994). Insofar as one must force to oneself to take birth control or put on a condom, then the failure to take these precautions can be seen as being caused by low self-control.

In sum, this body of evidence suggests that low self-control leads to an inability to restrain one's sexual behavior. Sexual restraint requires self-regulation, and people who are unable to restrain their sexual behavior exhibit others signs of low self-control. In the present work, we tested explicitly the causal relationship between self-control and sexual restraint.

Hypotheses and Overview of the Current Research

In the current research we examined the effect of self-control on sexual behavior in situations that required sexual restraint. In five studies, we either measured and/or manipulated self-control and then assessed the degree of inappropriate or undesirable sexual behavior. To provide converging evidence, we used multiple methods to manipulate self-regulatory strength and to assess sexual behavior.

We predicted that both dispositional and temporary self-regulatory impairments would undermine sexual restraint such that self-regulatory impairments would be associated with increased inappropriate or undesirable sexual activity. Participants lower in trait self-control should be more likely to engage in inappropriate or undesirable sexual behavior than participants higher in trait self-control. Participants who have depleted their self-regulatory strength should

be more likely to engage in inappropriate or undesirable sexual behavior than non-depleted participants. Given that we assessed sexual activity in situations that required sexual restraint, we posited that increased sexual activity was the result of failures in sexual restraint.

Throughout the investigation, we were also sensitive to a competing hypothesis. Self-regulation requires the control of inner impulses via inner restraints. In principle, self-regulation can fail either because an impulse is too strong to restrain or because inner restraints are too weak. Low self-control (trait or depletion) signifies weak restraints, by definition, and so we posit that low self-control will increase inappropriate or undesirable sexual behavior via weakened restraints. An alternative hypothesis is that our operational definitions of low self-control (trait or depletion) increase the strength of sexual impulses and therefore elicit inappropriate or undesirable sexual behavior via increasing the strength of the impulse, rather than weakening the restraints. To examine this alternative hypothesis, throughout the current work we highlight evidence that helps distinguish between weakened restraints versus stronger impulses.

Pilot Study- Trait Self-Control and Sexual Restraint

A pilot study provided a preliminary test of the idea that low self-control is associated with poor sexual restraint. Specifically, we examined the relationship between trait self-control and dispositional abilities to restrain one's sexual behavior. Participants completed an empirically validated measure of trait self-control (Tangney et al., 2004) and a questionnaire designed for the current study that assessed abilities in sexual restraint. If failures in sexual restraint are associated with low self-control, then people lower in trait self-control should possess poorer sexual restraint than people higher in trait self-control.

Method

Participants

Participants were 51 undergraduates (33 women) enrolled in an introductory psychology course who completed a mass testing session at the start of the academic semester. They participated in exchange for partial course credit.

Materials and Procedure

Participants first completed a brief measure of dispositional self-control (Tangney et al., 2004) during a mass testing session at the start of the semester. The short version of the Self-Control Scale (SCS) contains 13 items (e.g., "I have a hard time breaking bad habits." (reverse scored), "I am good at resisting temptation") answered on a scale from 1 (*not at all like me*) to 5 (*very much like me*). None of these items was directly related to sexual behavior. Higher scores indicate higher self-control.

Approximately 7 weeks later, participants completed a questionnaire that assessed their ability to restrain their sexual behavior. Participants responded to 10 items (see Table 1) on a scale from 1 (*not at all like me*) to 5 (*very much like me*). The 10 items demonstrated acceptable internal reliability (Cronbach's Alpha = .87).

Results and Discussion

We predicted that participants scoring lower in trait self-control would report being less able to restrain their sexual behavior than participants scoring higher in trait self-control. This prediction was confirmed. Trait self-control was positively and significantly related to sexual restraint, $r(51) = .53, p < .001$ (and the strength of this relationship did not differ by gender, $p > .59$). Thus, low self-control was associated with being relatively unable to restrain one's sexual behavior.

Table 1. *Items Used to Assess Dispositional Abilities in Sexual Restraint (Pilot Study)*

1. I am very good at controlling my sexual urges.
 2. I often go too far sexually than I want to go. (R)
 3. If I want to engage in a sexual behavior, but I know that I should not, then I do not engage in that behavior.
 4. Sometimes I lose control of my sexuality. (R)
 5. I have willingly engaged in sexual behaviors that I really had not intended to do. (R)
 6. I often end up engaging in sexual acts earlier in a relationship than I had hoped. (R)
 7. I am good at resisting my temptation to engage in sexual behaviors.
 8. When I am with a guy or girl who wants to engage in some sexual behavior and I do not, I still engage in that behavior. (R)
 9. I often give in to my sexual urges. (R)
 10. When I set a limit on my sexual behaviors, I stick to what I had planned.
-

Note. Items that were reversed scored are denoted with an (R).

The relationship between trait self-control and sexual restraint is consistent with the hypothesis that low self-control causes failures in sexual restraint. People with dispositionally poor self-regulatory abilities are the most likely to fail at restraining their sexual behavior. The correlational nature of the data, however, clearly precludes inferring causality or drawing any firm conclusions. Accordingly, the following studies tested the causal nature of the relationship between self-control and sexual restraint by manipulating self-regulatory strength and then examining the effect of the manipulation on sexual restraint.

Study 1- Self-Control and Expressing Sexual Thoughts

Perhaps one of the most frequent examples of sexual restraint is stifling the expression of sexual thoughts. In many situations (e.g., the office), people typically refrain from expressing inappropriate sexual thoughts (e.g., Miracle, Miracle, & Baumeister, 2003). Study 1 examined the effect of low self-control (both low trait self-control and state depletion) on the likelihood of expressing socially inappropriate sexual thoughts, defined as participants' solving word puzzles with socially risqué words related to sex. (We assumed and also confirmed that producing sexually explicit words in response to laboratory word problems is regarded as inappropriate.) We also examined whether any differences in participants' responses might be caused by differences in mood, arousal, or perceptions of self-efficacy rather than self-control.

The manipulation of state self-regulatory strength consisted of participants completing either the Stroop color-word interference task or a control task. For the Stroop-task, participants stated aloud the color ink of printed words while inhibiting the tendency to read the words (e.g., "red," when printed in blue ink). This task required self-control because participants had to override the tendency to read the word and respond instead by stating the color ink. If such acts of self-control consume a limited resource, then participants should be in a depleted condition after completing this task.

Participants who completed the control task were given the same list of words and instructed to read each word aloud. Thus, control participants did not have to exert self-control because they did not have to override any pre-potent response but rather read the word list as they would normally.

After completing their respective tasks, participants solved word puzzles (i.e., anagrams and word stems) that had both sexual and non-sexual solutions (e.g., PENIS, SPINE). The dependent measure was whether a participant solved any word puzzle with a sexual word and thus violated social norms that disapprove of such behavior. To refrain from including a sexual word should require self-regulation insofar as one must override the impulse to respond with a sexual word in order to respond with a non-sexual word instead. If low self-control undermines this ability and thus causes sexual misbehavior, then low self-control should increase the likelihood of responding with a sexual (vs. non-sexual) word. Depleted participants should be more likely to respond with a sexual word than non-depleted participants. Participants lower in trait self-control should be more likely to respond with a sexual word than participants higher in

trait self-control.

Method

Participants

Participants were 32 undergraduates (22 women) enrolled in an introductory psychology course who participated in exchange for partial course credit. Participants were randomly assigned to a self-control depletion or no-depletion condition.

Procedure

Assessment of Trait Self-Control. Participants' trait self-control was assessed at the same mass testing session as the pilot study using the short version of the Self-Control Scale (Tangney et al., 2004). Ten participants did not attend the mass testing session, therefore, their data were excluded from all analyses involving trait self-control.

Manipulation of Self-Regulatory Strength and Assessment of Sexual Restraint. Participants arrived at the lab 3-6 weeks later, were run individually, and were told the study was investigating the structure of language (e.g., how people process different types of verbal information). The first task consisted of the manipulation of self-regulatory strength. Participants assigned to the depletion condition completed the Stroop color-word interference task. For this task, they were given a list of words (i.e., "red", "blue", "green") presented in random order. Each word appeared in one of three colors of ink (i.e., red, blue, green) that diverged from the meaning of the word (e.g., the word "red" appeared in blue ink). Participants in the depletion condition were asked to read through the list and state aloud the color ink of each word while refraining from reading the word. They performed this task for 4 minutes and were asked to proceed as quickly as possible while making the fewest number of mistakes. The experimenter recorded participants' performance (i.e., the number of correct and incorrect responses).

Participants assigned to the no-depletion condition completed a control version of the Stroop task. Rather than state aloud the color ink, non-depleted participants were asked to read aloud the meaning of the word.

Upon finishing their respective tasks, participants completed a manipulation check and an item that asked about feelings of self-efficacy. To assess mood and arousal, participants completed the Brief Mood Introspection Scale (BMIS) which contains 20 items indicative of mood (e.g., happy, sad) and arousal (e.g., peppy, drowsy; Mayer & Gaschke, 1988). Participants were asked to rate each item on the extent to which that item described how they were feeling at

the present moment on a scale from 1 (*definitely do not feel*) to 7 (*definitely feel*).

Next, participants completed a 5-minute filler computer task and a questionnaire that contained 14 word stems and 11 anagrams. Five of the word stems (e.g., S L U _ _ _ , B U _ _) could be solved with either a non-sexual (e.g., S L U S H Y, B U G S) or sexual (e.g., S L U T T Y, B U T T) word. Three of the anagrams (e.g., N I S E P, H S W O E R) could be solved with either a non-sexual (e.g., S P I N E, S H O W E R) or sexual (e.g., PENIS, WHORES) word. Last, participants completed demographic information and were probed for suspicion, thanked, and debriefed.

Results

Validation Study

To make sure that social norms did in fact prohibit responding with sexual words to words puzzles, we had a separate sample of participants ($N = 18$) indicate the extent to which solving word puzzles with non-sexual (e.g., COUCH, CHAIR, TEST) and sexual (e.g., PENIS, BUTT, SLUTTY) words was socially inappropriate (using a scale from 1 (*not at all inappropriate*) to 9 (*very inappropriate*)). Participants indicated that solving the puzzles with sexual words was fairly inappropriate ($M = 5.78$) and that solving the puzzles with non-sexual words was not at all inappropriate ($M = 1.00$). These results support the notion that solving the puzzles with sexual words violated social norms to some degree.

Manipulation Check

Participants rated the difficulty of their respective color-naming tasks upon their completion to serve as a rough check of the self-regulatory demand of the depletion manipulation. Analysis indicated that participants in the depletion condition rated the Stroop task as being significantly more difficult ($M = 5.00$, $SD = .85$) than participants in the no-depletion condition rated the control task ($M = 2.71$, $SD = 1.26$), $t(30) = 5.96$, $p < .001$. This pattern suggests that the depletion and no-depletion conditions required different levels of self-regulatory exertion.

In addition, the suspicion probe indicated that no participants were suspicious or aware of the true purpose of the experiment (i.e., everyone believed the study was examining language and no one realized the word puzzles were a measure of sexual behavior).

Self-Control Depletion and Sexual Words

Few participants (i.e., 16% of the sample) included more than 1 sexual word in their

responses. Therefore we found it appropriate to treat as the dependent measure whether a participant included at least one sexual word in his or her responses (as opposed to none) rather than the total number of sexual words.

We predicted that, compared to non-depleted participants, depleted participants would be more likely to respond with one or more sexual words. Because both the independent (depletion condition, gender) and dependent (one or more sexual words vs. none) variables were dichotomous, the proper statistical analysis was logistic regression (Jaccard, 2001). A logistic regression analysis on the dichotomous classification of responses (one or more sexual words vs. none) confirmed this prediction.² Condition, gender, and their interaction were included in the model. The main effect of depletion condition was significant, $B = 2.73$, Wald statistic = 5.52, $p < .05$. Participants in the depletion condition were more likely than non-depleted participants to include a sexual word. Whereas 67% of the participants in the depletion condition included one or more sexual words in their responses, only 29% of those in the no-depletion condition did so. Presumably, self-regulatory depletion undermined participants' ability to refrain from responding with sexual words, which supports the hypothesis that low self-control causes failures at sexual restraint.

The main effect of gender was also significant such that men were more likely than women to include one or more sexual words in their responses, $B = 2.72$, Wald statistic = 4.86, $p < .05$. The interaction between gender and condition was not significant, $p > .99$.

Trait Self-Control and Sexual Words

Another prediction was that, compared to participants higher in trait self-control, participants lower in trait self-control would be more likely to respond with one or more sexual words. A logistic regression analysis confirmed this prediction. We again treated as the dependent measure the dichotomous classification of responses (one or more sexual words vs. none) due to few participants including more than 1 sexual word in their responses. Trait self-control, gender, and their interaction were included in the model. The main effect of self-control was significant,

As predicted, participants lower in self-control were more likely to include one or more sexual words than participants higher in self-control, as indicated by a significant main effect for trait self-control, $B = -2.66$, Wald statistic = 5.12, $p < .05$. The effect of gender was also significant such that men were more likely than women to include one or more sexual words in

their responses, $B = 3.38$, Wald statistic = 5.59, $p < .05$. The interaction of gender and self-control was not significant, $p > .64$.

In addition, we examined whether trait self-control interacted with depletion condition in predicting participants' sexual responses. A logistic regression analysis indicated that they did not interact. Trait self-control, depletion condition, gender, and all higher-order interactions were included in the model. The simple interaction between trait self-control and depletion condition and their higher-order interaction with gender were not significant, both p 's $> .48$. The non-significant interaction between trait self-control and depletion condition suggests that participants higher and lower in trait self-control were affected equally by depletion. This suggests that high trait self-control does not prevent or attenuate depletion, but rather that people with higher trait self-control have greater self-regulatory strength (both before and after a depleting exercise) than people with lower trait self-control.

Mood, Arousal, and Self-Efficacy

Although the results suggest that low self-control caused participants to respond with one or more sexual words, other explanations remain plausible, such that the results could be due to differences in mood, arousal, or self-efficacy. For instance, it is possible that completing the Stroop task caused depleted participants to be in a more negative mood than non-depleted participants, which subsequently caused them to include one or more sexual words in their responses.

To examine this possibility, we assessed whether the relationship between self-control (depletion and trait self-control) and sexual restraint (responding with sexual words) was mediated by mood or arousal (as assessed by the BMIS), self-efficacy (participants' responses of how well they performed on the Stroop tasks on a scale from 1 (*I did very poorly*) to 7 (*I did very well*)), or task performance (a standardized composite of the number of correct and incorrect responses with incorrect responses reverse scored) which may have influenced perceptions of self-efficacy.

Analyses indicated that mood, arousal, self-efficacy, and task performance did not mediate the relationship between self-control (depletion and trait self-control) and participants' responding with sexual words. Tests of mediation require that a mediator be significantly related to both the independent and dependent variables (Baron & Kenny, 1986). These criteria were not met for mood or arousal (as assessed by the BMIS), self-efficacy, or task performance. Depleted

and non-depleted participants did not differ in mood, $p > .97$, or arousal, $p > .46$, nor did mood or arousal significantly predict whether participants responded with one or more sexual words, both p 's $> .29$. Depleted and non-depleted participants did differ significantly in self-efficacy and actual task performance, both p 's $< .001$, such that depleted participants had lower self-efficacy and worse task performance than non-depleted participants, but neither self-efficacy nor task performance significantly predicted whether participants responded with one or more sexual words, both p 's $> .15$. Further, arousal, self-efficacy, and task performance were not significantly related to trait self-control, all p 's $> .13$, nor were they related to participants' responding with sexual words, all p 's $> .15$. Mood was significantly related to trait self-control, $r(23) = .48$, $p < .05$, but was not related to participants' responding with sexual words, $p > .29$. In sum, these analyses suggest that the relationship between self-control (depletion and trait self-control) and participants' responding with sexual words was not caused by differences in mood, arousal, self-efficacy, or task performance.

Discussion

The ability to refrain from expressing sexual thoughts is socially desirable in many contexts. Study 1 examined whether low self-control would cause participants to fail at refraining from expressing their sexual thoughts such that they would respond with a socially risqué sexual word (e.g., WHORES) while solving word puzzles. We found that both individual differences in self-control (trait self-control) and manipulated self-regulatory strength (depletion) were related to such sexual expressivity. Depleted participants were more likely to respond with sexual words than non-depleted participants and participants lower in trait self-control were more likely to respond with sexual words than participants higher in trait self-control. Furthermore, these effects did not appear to be accounted for by perceptions of mood, arousal, or self-efficacy. These results suggest that low self-control is a powerful factor that causes people to fail to censor their sexuality in situations in which social norms dictate that they should. Presumably, lacking self-regulatory resources undermined participants' ability to restrain their sexual behavior.

An alternative interpretation might be that low self-control increased the strength of the impulse to respond with sexual thoughts, rather than low self-control weakening the ability to refrain from responding with sexual thoughts. Perhaps depleted participants had stronger urges to respond with sexual words compared to non-depleted participants, as did participants lower in trait self-control compared to participants higher in trait self-control. Although this possibility

cannot be ruled out entirely, there are some signs that suggest that participants' sexual responses were caused by weaker restraints (rather than stronger impulses). First, self-control (trait self-control or depletion) was not related to self-reported arousal. If low self-control was associated with relatively stronger sexual impulses, then one might expect such stronger impulses to manifest themselves in self-reported arousal. Secondly, it seems a priori doubtful that saying the names of ink colors (the Stroop task) would increase the strength of sexual impulses. Hence we think that the most likely and reasonable explanation is that low self-control (trait self-control or depletion) weakened restraints, thereby enabling participants to respond with sexual words.

Study 2- Self-Control and Sexual Infidelity

Among social norms that restrict sexual behavior, those against sexual infidelity are among the most salient. Engaging in sexual acts outside of a committed, romantic relationship is strongly discouraged in both Western and non-Western cultures (e.g., Metts, 1994; Sheppard, Nelson, & Andreoli-Mathie, 1995; Weiss & Slosnerick, 1981). To provide converging evidence that low self-control causes sexual misbehavior, Study 2 examined the relationship between self-control (trait self-control and self-control depletion) and willingness to engage in sexual infidelity. The rationale was that individuals in committed romantic relationships may sometimes desire extradyadic sexual involvement, but to abide by the rules of their relationship and social norms they must inhibit those desires and resist their temptation. When self-control is lacking, however, people should be less capable of controlling such desires and therefore become more willing to engage in sexual infidelity.

In Study 2, participants first completed a task that did or did not require self-control, and then they indicated their willingness to engage in sexual infidelity. The self-control manipulation consisted of a task frequently used as a manipulation of self-regulatory resources (e.g., Baumeister, Bratslavsky, Muraven, & Tice, 1998; Vohs & Faber, 2004) in which participants learn to follow a rule (i.e., crossing out letters on a page of text) and then must learn to follow a new rule and override the previously learned rule. Because self-control is required to override a previously established routine, following the new rule is posited to deplete self-regulatory strength. For the control task, participants followed the same rule that they learned initially and thus had to exert little or no self-control because they were not required to override any habit or routine.

After completing this initial task, participants then responded to a series of scenarios in which they imagined that they were in a committed romantic relationship and were presented with the opportunity to engage in a sexual act with someone other than their romantic partner. For each scenario, participants were asked to indicate the likelihood that they would engage in various sexual behaviors (e.g., kissing) based on their current feelings. Participants' responses to these scenarios served as the dependent measure.

We predicted that low self-control would cause participants to be relatively less able to control their sexual desires such that they would indicate a greater willingness to engage in sexual infidelity compared to participants with high self-control. Depleted participants should be

more willing to engage in sexual infidelity than non-depleted participants. Participants lower in trait self-control should be more willing to engage in sexual infidelity than participants higher in trait self-control. More precisely, sexual infidelity should be more likely among people with low trait self-control and among those whose self-regulatory resources had been depleted by the e-crossing task.

Our hypothesis was that willingness to engage in sexual infidelity would stem from poor sexual restraint, rather than stronger sexual impulses. To address the question of differential impulse strength, we assessed individual differences related to the strength of the desire to engage in extradyadic sex. If low self-control undermines sexual restraint (rather than increasing the strength of the impulse), then one might expect that the effects of low self-control (trait self-control or depletion) should be most pronounced among participants with the strongest desire to engage in extradyadic sex. Being unable to restrain their sexual desires, they should be more willing to engage in extradyadic sex. On the other hand, if low self-control increases the strength of the impulse (rather than undermining restraint), then the effects of low self-control (trait self-control or depletion) should be most pronounced among participants with the weakest desire to engage in extradyadic sex, because they have more latitude for increasing the strength of the impulse.

In particular, we assessed for differential effects of self-control based on gender and sociosexual orientation. With respect to gender, abundant findings indicate that men desire extradyadic sex more than women do. Men are more willing and likely than women to engage in extradyadic sex (e.g., Allgeier & Allgeier, 1995; Baumeister, Catanese, & Vohs, 2001; Goettsch, 1994; Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953; Thompson, 1983). Indeed, evolutionary theory contends that men are naturally predisposed to seek secondary or extradyadic sexual relationship so as to increase the likelihood of their reproducing (e.g., Buss & Schmitt, 1993).

If low self-control undermines sexual restraint, thereby releasing strong inner impulses, then the effects of low self-control should be most pronounced among male participants. Male participants already possess the desire to engage in sexual infidelity but must refrain from doing so. Depletion or low trait self-control should therefore increase willingness to engage in sexual infidelity among male more than female participants. If low self-control strengthens sexual impulses, however, then the effects of low self-control should be most pronounced among

female participants. Female participants possess little desire to engage in sexual infidelity, and so depletion or low trait self-control should increase willingness to engage in sexual infidelity among female more than male participants.

Sociosexual orientation is defined as how close emotionally a person must feel to another person before engaging in sexual intercourse (Simpson & Gangestad, 1991a). People with an unrestricted orientation require less emotional closeness before engaging in sexual intercourse than those with a more restricted orientation. (For the present purposes, we wish to point out that the terms *restricted* and *unrestricted* are in reference to personal preferences, and not in reference to sexual restraint. Restricted individuals are less likely to engage in sexual relationships lacking emotional closeness due to personal preferences, not because they refrain from engaging in such relationships (Simpson & Gangestad, 1991a; see also Ostovich & Sabini, 2004)).

With respect to sexual infidelity, sexually unrestricted men and women possess a stronger sex drive in general (Ostovich & Sabini, 2004) and possess a stronger drive to have sex outside of their committed relationships (e.g., Seal, Agostinelli, & Hannett, 1994, Simpson & Gangestad, 1991b). If low self-control undermines sexual restraint, then the effects of low self-control should be most pronounced among unrestricted participants (i.e., those with the strongest desire to engage in sexual infidelity). Depletion or low trait self-control should increase willingness to engage in sexual infidelity among unrestricted more than restricted participants. If low self-control strengthens sexual impulses, however, then the effects of low self-control should be most pronounced among restricted participants (i.e., those with the least desire to engage in sexual infidelity).

Method

Participants

Participants were 115 undergraduates (88 women) enrolled in an introductory psychology course who participated in exchange for partial course credit. Participants were randomly assigned to a self-control depletion or no-depletion condition.

Procedure

Assessment of Trait Self-Control. Participants' trait self-control was assessed at the same mass testing session as the pilot study. Twenty-two participants did not complete the mass testing, therefore, they were excluded from all analyses involving trait self-control.

Experimental session. Participants arrived to the laboratory 3-5 weeks after the mass testing session to complete the main phase of the experiment. Participants were run in a classroom setting and were told the study was investigating the relationship between attitudes, behaviors, and task performance. They were given a packet that contained all materials for the study and worked through the packet at their own pace.

First, participants completed a task that required the crossing out of letters on a page of text which served as the depletion manipulation. Specifically, participants were given two copies of a page of typewritten text taken from a scientific journal article. On the first page, participants were instructed to cross out every occurrence of the letter *e*. The page contained a high number (337) of *e*'s and so participants should have established a well-practiced routine of crossing out *e*'s. For the second page of text, participants assigned to the no-depletion condition were asked to follow the same rule as before by crossing out all occurrences of the letter *e*. This task required a high number of responses and so was somewhat demanding. Participants in the depletion condition, however, were asked to follow a different rule than before by crossing out all occurrences of the letter *e* except for *e*'s that were followed by a vowel or *e*'s that appeared in a word with a vowel appearing two letters before the *e*. As a manipulation check, participants rated the difficulty of the task upon its completion.

The following pages of the packet contained one set of seven scenarios concerning sexual infidelity and two sets of scenarios pertaining to issues unrelated to the current investigation. (The order of the three sets of scenarios was randomized across participants.) For each scenario, participants were to imagine being involved in a committed, heterosexual romantic relationship for an extended period of time (e.g., 2 years). Each scenario provided participants with an opportunity to engage in extradyadic sexual behaviors and they were to base their responses on what they would do at the present moment. In the first three scenarios, participants indicated the likelihood of their engaging in a single sexual behavior (i.e., kissing an opposite-sex friend after watching a movie together, engaging in sexual intercourse with a co-worker after work and with a friend after having drinks) using a scale from 1 (*not at all likely*) to 9 (*very likely*; borrowed from Quatroy, 2004). In the next four scenarios, participants indicated the likelihood of their engaging in the following behaviors: flirting, kissing, groping or caressing, oral sex, and sexual intercourse, in various situations (e.g., while vacationing at the beach, the participant is alone in the hotel room of an attractive acquaintance of the opposite sex). Responses were made using a

scale from -3 (*extremely unlikely*) to 3 (*extremely likely*). These responses were combined for each scenario to create a single measure (all Cronbach's alphas > .87). The final dependent measure was obtained by standardizing (z-scoring) and averaging the measures for each of the seven scenarios (Cronbach's alpha = .92).

Last, participants completed the sociosexual orientation inventory (Simpson & Gangestad, 1991a) and demographic information and were thanked and debriefed. The sociosexual orientation inventory (SOI) assesses sexual behavior (e.g., "With how many different partners have you had sex with in the past year?") and attitudes (e.g., "I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her.") to assess sexual restrictedness. SOI scores are based on a composite of these measures and standardized within each gender. Higher SOI scores indicate an unrestricted sociosexual orientation, whereas lower SOI scores indicate a restricted orientation.

Results

Manipulation checks

The rough check of the self-regulatory demand of the depletion manipulation indicated that the depletion and no-depletion conditions required different levels of self-regulatory exertion. Depleted participants rated the *e*'s task as being significantly more difficult ($M = 5.00$, $SD = 1.40$) than did non-depleted participants ($M = 3.03$, $SD = 1.59$), $t(113) = 7.03$, $p < .001$.

In addition, depleted and non-depleted participants did not differ in their sociosexual orientation, $t < .50$, *n.s.*, which suggests that the depletion manipulation did not influence responses to the SOI. Also, there were no differences in trait self-control as a function of depletion condition or gender, all F 's < 1, *n.s.*

Self-Control Depletion and Sexual Infidelity

We predicted that depletion would increase participants' willingness to engage in sexual infidelity and that this effect might be moderated by gender. Results confirmed these possibilities. First, we examined the effect of condition (Depletion vs. No-depletion) and gender while controlling for SOI (as a covariate) on participants' willingness to engage in sexual infidelity. A 2 (Condition) X 2 (Gender) between-subjects ANCOVA indicated main effects of condition, $F(1, 110) = 8.44$, $p < .005$, and gender, $F(1, 110) = 7.97$, $p < .01$. Depleted participants were more willing to engage in sexual infidelity than non-depleted participants and

male participants were more willing to engage in sexual infidelity than female participants.

The effects of depletion condition and gender were qualified by their interaction, $F(1,110) = 7.82, p < .01$ (see Figure 1). Tests of simple effects indicated that the effect of depletion condition was significant for male, $F(1, 24) = 6.05, p < .05$, but not for female participants, $p > .90$. Thus depletion increased willingness to engage in sexual infidelity among male but not female participants. Further, depleted male participants differed from both depleted and non-depleted female participants, both p 's $< .001$, whereas non-depleted male participants did not differ from female participants in either condition, both p 's $> .84$. Although male participants were more willing to engage in sexual infidelity than female participants, this difference occurred only among *depleted* male participants. Non-depleted male participants were not more willing to engage in sexual infidelity than non-depleted or depleted female participants.

Further, subsequent analyses indicated that the effect of depletion was moderated by sociosexual orientation. A regression analysis was performed by predicting willingness to engage in sexual infidelity from depletion condition, gender, SOI scores, and all higher order interactions. The main effect of condition approached significance, $\beta = .12, t = 1.62, p = .11$, such that depleted participants were somewhat more willing to engage in sexual infidelity than non-depleted participants. The effects of gender and sociosexual orientation were significant.

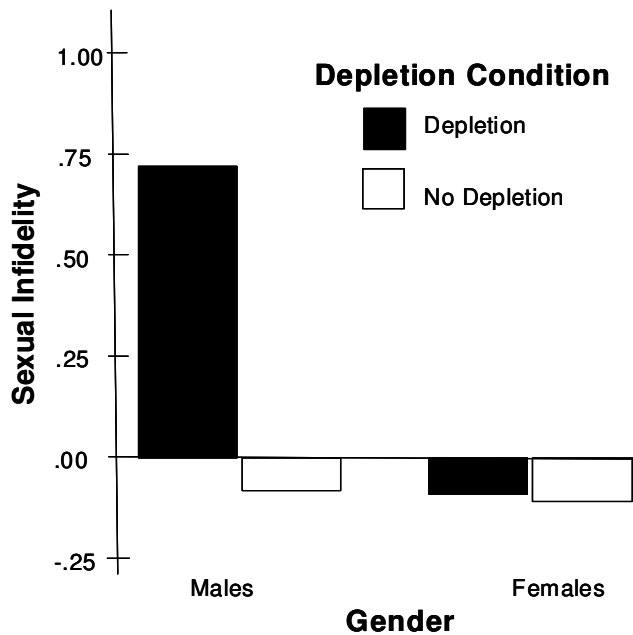


Figure 1. Participants' reported likelihood of engaging in sexual infidelity as a function of depletion condition and participant gender.

Male participants were more willing to engage in sexual infidelity than female participants, $\beta = .23$, $t = 2.95$, $p < .005$, and unrestricted (high SOI) participants were more willing to engage in sexual infidelity than restricted (low SOI) participants, $\beta = .54$, $t = 7.07$, $p < .001$. There was also a significant interaction between depletion condition and gender, $\beta = .37$, $t = 3.16$, $p < .005$, that mirrored the above analysis and a near significant interaction between depletion condition and sociosexual orientation, $\beta = .18$, $t = 1.91$, $p = .06$ (see Figure 2). The three-way interaction between condition, gender, and sociosexual orientation was not significant, $p > .75$.

To interpret the interaction between depletion condition and SOI, we assessed the simple effect of condition among sexually unrestricted (high SOI) versus sexually restricted (low SOI) participants (1 SD above and below the mean on SOI; Aiken & West, 1991) while controlling for gender. Results indicated that among participants with an unrestricted sociosexual orientation, depleted participants were more willing to engage in sexual infidelity than non-depleted participants, $t = 2.23$, $p < .05$. Among restricted participants, there was no difference in willingness to engage in sexual infidelity between conditions, $p > .92$. Thus, depletion increased willingness to engage in sexual infidelity among unrestricted (high SOI) participants but not among restricted (low SOI) participants. Further, the non-significant 3-way interaction (in the full model) indicated that this effect did not depend upon gender. Both male and female unrestricted participants were more willing to engage in sexual infidelity in the depletion than in the no-depletion condition.

Trait Self-Control and Sexual Infidelity

We also predicted that participants lower in trait self-control would be more willing to engage in sexual infidelity than participants higher in trait self-control and that this relationship might be especially pronounced among male participants. Results confirmed these predictions. A regression analysis was performed by predicting willingness to engage in sexual infidelity from trait self-control, gender, SOI, and all higher order interactions. The effect of trait self-control was not significant nor was its interaction with SOI, both p 's $> .23$, and so we performed another regression analysis that excluded SOI from the model.³ Results indicated a significant main effect of trait self-control, $\beta = -.29$, $t = -2.98$, $p < .005$, such that participants lower in self-control were more willing to engage in sexual infidelity than participants higher in self-control. The effect of gender was also significant, $\beta = .24$, $t = 2.43$, $p < .05$, such that male participants were

more willing to engage in sexual infidelity than female participants.

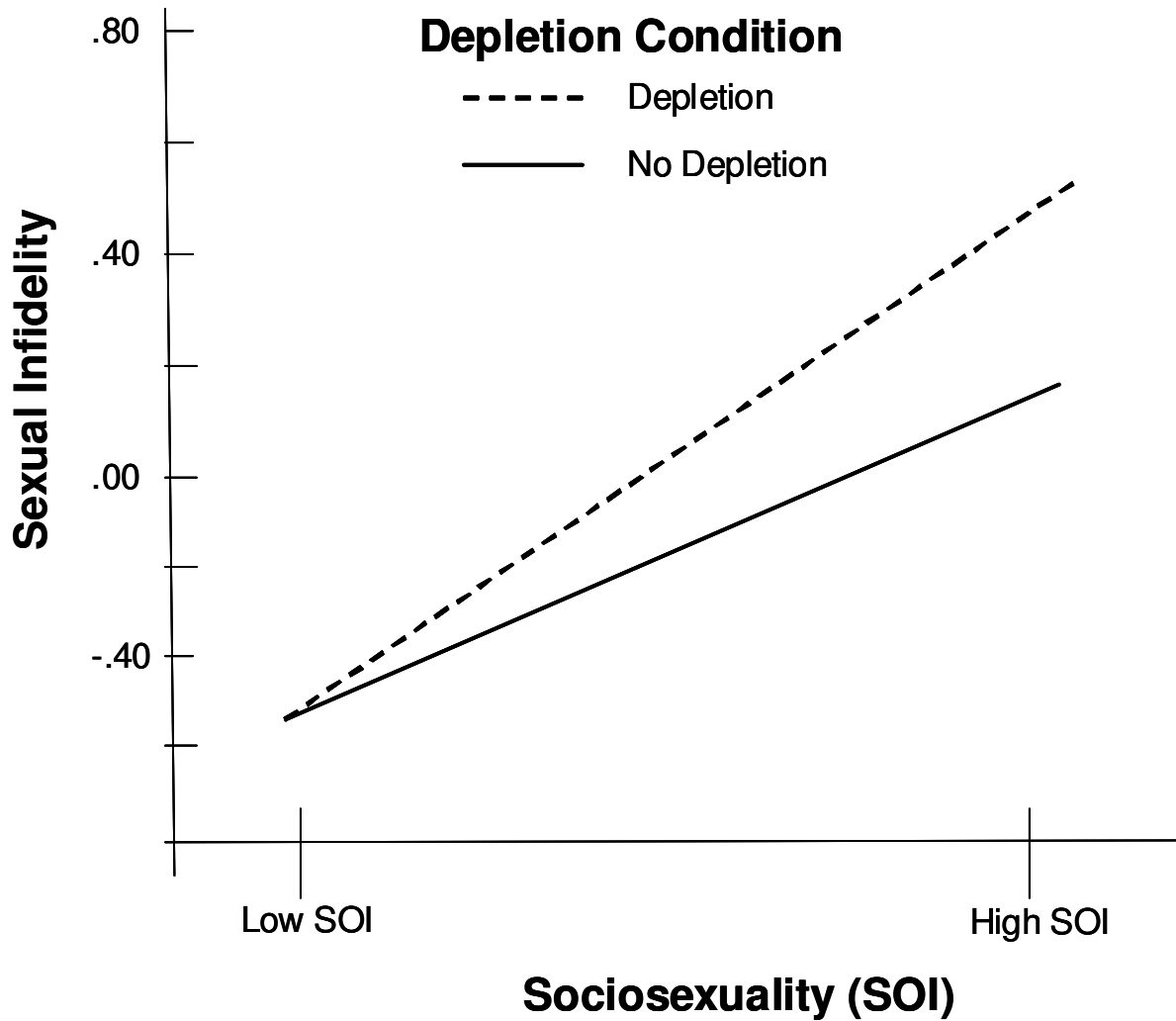


Figure 2. Participants' reported likelihood of engaging in sexual infidelity as a function of depletion condition and sociosexual orientation.

In addition, the main effects of self-control and gender were qualified by their (marginally significant) interaction, $\beta = -1.02$, $t = -1.86$, $p = .07$ (see Figure 3). To interpret the interaction between self-control and gender, we assessed the simple effect of gender among participants who were relatively high versus relatively low in trait self-control (1 SD above and below the mean on the self-control scale; Aiken & West, 1991). Results indicated that the effect

of gender was significant for participants lower in trait self-control, $t = 3.08$, $p < .005$, but was not significant for those higher in trait self-control, $p > .77$. Thus the differences in willingness to engage in sexual infidelity between male and female participants occurred primarily among those lower in trait self-control. For these participants, males were more willing to engage in sexual infidelity than females. For participants higher in self-control, however, males were not more willing to engage in sexual infidelity than females.

Conversely, the strength of the correlation between trait self-control and willingness to engage in sexual infidelity was descriptively (but not significantly, $p > .22$) stronger among male, $r = -.44$, than female, $r = -.25$, participants. This is consistent with the notion that the effect of low self-control should be greatest among those with the strongest urges to engage in sexual infidelity (male participants).

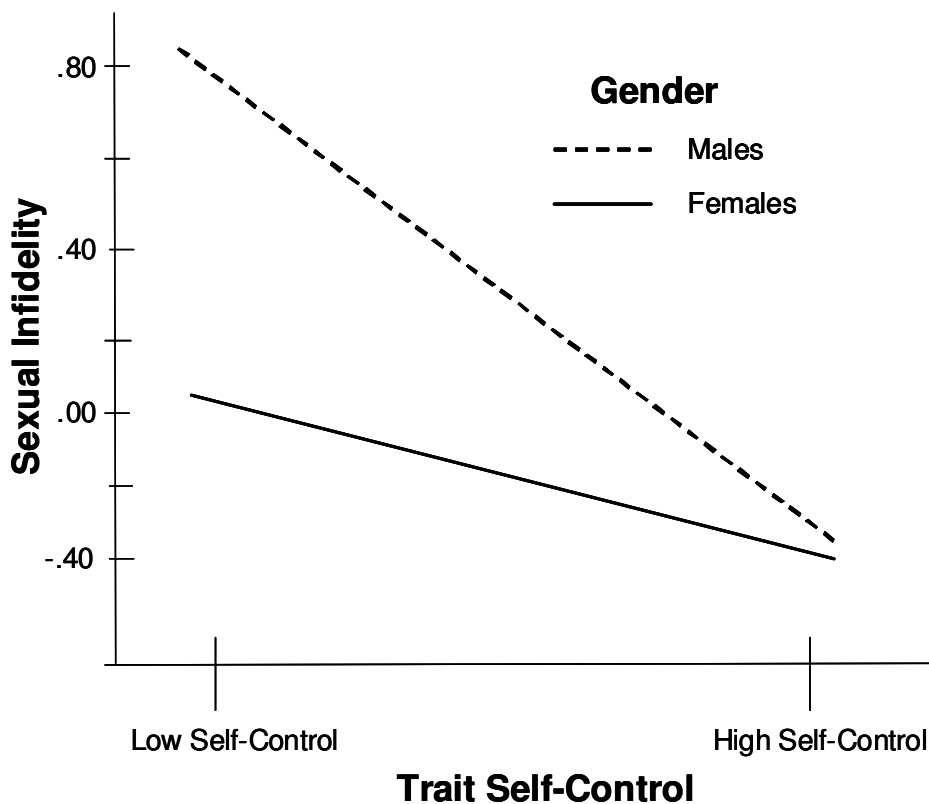


Figure 3. Participants' reported likelihood of engaging in sexual infidelity as a function of trait self-control and participant gender.

Discussion

Individuals may be tempted to engage in sexual infidelity, but in order to adhere to the rules of their romantic relationship and social norms they must refrain from doing so. Study 2 tested the idea that low self-control causes people to fail at resisting the urge to engage in sexual infidelity. The results were consistent with this prediction. Depleted participants were more willing to engage in sexual infidelity than non-depleted participants, as were participants lower (vs. higher) in trait self-control. This finding converges upon the results of Study 1 by supporting the notion that self-regulatory impairments cause sexual misbehavior. Both temporarily depleted and dispositionally low self-regulatory abilities were related to a greater willingness to engage in sexual infidelity.

Further, participants with the strongest desires to engage in sexual infidelity (male participants and unrestricted participants) were the most willing to engage in sexual infidelity when they lacked self-control. Among male participants, those with lower (vs. higher) trait self-control were more willing to engage in sexual infidelity, as were depleted (vs. non-depleted) participants. Among female participants, there was no relationship between depletion and willingness to engage in sexual infidelity. Similarly, depletion was associated with a greater willingness to engage in sexual infidelity among unrestricted, but not restricted, participants. The effects of low self-control being the most pronounced among those with the strongest desires to engage in sexual infidelity suggests that low self-control undermines sexual restraint. If low self-control strengthened sexual impulses, then one might expect that the effects of low self-control would have been the most pronounced among those with weakest desires to engage in sexual infidelity. Likewise, as in Study 1, it is unclear as to how the depletion manipulation (crossing out letters) would have strengthened participants' sexual impulses.

Study 3- Self-Control Depletion and Narrative Accounts of Sexual Restraint

The purpose of Study 3 was to increase external validity by providing evidence from a non-laboratory setting that low self-control is associated with poor sexual restraint. Specifically, participants wrote accounts of episodes in their lives when they were able or unable to restrain their sexual behavior. Following each essay, participants completed items that assessed the extent to which the episode had been preceded by circumstances that would have depleted participants' self-regulatory strength. We predicted that participants would recall the circumstances preceding times when they were *unable* to restrain their sexual behavior as having been more depleting than the circumstances preceding times when they were *able* to restrain their sexual behavior.

Method

Participants

Participants were 49 undergraduates (32 women) enrolled in an introductory psychology course who participated in exchange for partial course credit. Of these participants, 11 (6 women) were excluded from all analyses for not following instructions (see below), leaving a final sample of 38 (26 women).

Materials and Procedure

Participants were told the study was examining the factors that influence sexual restraint and were asked to write two essays. (The order of the essays was counterbalanced across participants.) For one essay, participants were asked to write about a time when they were able to restrain their sexual behavior. Instructions asked that “you write about a time when you successfully controlled your sexual urges, such as a time when you wanted to engage in a sexual act yet you controlled yourself so that you did not. . .” and listed examples of sexual restraint (e.g., resisting the temptation to engage in sexual intercourse). For the other essay, participants were asked to write about a time when they were unable to restrain their sexual behavior. Instructions asked that “you about a time when you felt you could not control your sexual urges, such as a time when you wanted to control your sexual urges but you were not able to. . .” and again listed examples of sexual restraint. To make sure that the loss of sexual restraint was likely caused by depletion rather than alcohol or coercion, participants were asked to write about a time when they were sober and willfully engaged in the sexual behavior. (Responses of participants who failed to follow this instruction were excluded from all analyses, as indicated above.)

Participants were given 10-12 minutes to write each essay in as much detail as possible.

After writing each essay, participants completed a questionnaire (adapted from measures used by Finkel & Campbell, 2001; Twenge, Muraven, & Tice, 2004 shown to reliably predict self-regulatory depletion) to assess the extent to which the circumstances preceding each episode required and therefore should have depleted self-regulatory strength. Participants responded to 10 items (e.g., “I had been on a diet.”, “I had been doing a lot of other things requiring self-control.”) using a scale from 1 (*strongly disagree*) to 11 (*strongly agree*). The 10 items demonstrated acceptable internal reliability for times when participants were able and unable to restrain their sexual behavior (Cronbach’s Alpha = .85 and .83, respectively). Higher scores indicated that the preceding circumstances should have required greater self-control. Last, participants completed demographic information and were thanked and debriefed.

Results and Discussion

We predicted that participants would recall having exerted more self-control prior to times when they were unable (vs. able) to restrain their sexual behavior. This prediction was confirmed. A 2 (Sexual restraint essay: Able vs. Unable) X 2 (Gender) mixed model analysis of variance (ANOVA) indicated that participants had been exerting more self-control when they were unable ($M = 4.48, SD = 1.79$) than when they were able to restrain their sexual behavior ($M = 3.95, SD = 1.63$), $F(1,36) = 4.06, p = .05$. The effect of gender and its interaction with sexual episode were not significant, both p 's $> .47$, which indicates that both men and women had been exerting more self-control during times when they were unable (vs. able) to restrain their sexual behavior.

These results are consistent with the idea that failures in sexual restraint are associated with impaired self-regulation. For times when people failed to restrain their sexual behavior, they recalled that they had been exerting more self-control (e.g., being on a diet) than during times when they successfully restrained their sexual behavior. By implication, then, participants’ self-control should have been more depleted during these times (Muraven & Baumeister, 2000). Based on the experimental evidence from Studies 1 and 2, it seems plausible that participants’ depleted self-regulatory strength caused them to fail at restraining their sexual behavior (although the nature of the data preclude drawing any firm causal conclusions). Study 3 thus provides converging evidence based on behavior outside of a laboratory setting.

An alternative explanation for these results might be that participants sought to justify

their lapses in sexual restraint by recalling circumstances that should have depleted their self-regulatory strength. It is not entirely clear, however, whether participants believed that such circumstances (e.g., being on a diet) would have justified their sexual misbehavior, thus casting doubt that participants were simply trying to justify their lack of sexual restraint. Rather, the results of the previous studies suggest that participants were indeed more depleted during times when they were unable (vs. able) to restrain their sexual behavior.

Study 4- Self-Control and Sexual Behavior in the Laboratory

Study 4 took a step further than the previous studies by measuring actual sexual and romantic behavior in the laboratory. Specifically, Study 4 examined whether self-control depletion would cause participants to be less likely to refrain from engaging in extensive sexual behaviors with their romantic partner in the laboratory. People frequently restrict the extent of their sexual behavior with their dating partners (e.g., during the initial stages of a relationship or to adhere to religious and moral restrictions on premarital sex), and it seemed plausible that self-control depletion would undermine such restraint.

In Study 4, participants arrived at the laboratory with their current romantic partner. For the depletion manipulation, they watched a video of a woman talking during which words appeared on the bottom of the screen. Participants in the depletion condition were asked to focus only on the woman and to ignore the words being presented. Because attention automatically orients toward novel stimuli appearing in the environment (e.g., Shiffrin & Schneider, 1977), the task required that participants exert self-control to override their pre-potent attentional response of looking at the words so as to maintain their attention instead only on the woman. Participants in the no-depletion condition were asked to watch the video as they would normally and hence were not required to control their attention or exert much self-control.

After this initial task, participants were united with their partner and invited to engage in an act of physical intimacy (e.g., holding hands, kissing) with him or her. The dependent measure was the extent of participants' sexual behavior. Although participants were asked explicitly to express physical intimacy, the extent to which they did so was left to their discretion. Social regulations and other rules typically favor sexual restraint (rather than indulgence) and participants would likely need to restrict their sexual behavior to some degree (e.g., they would probably refrain from engaging in sexual intercourse). We predicted that depletion would undermine such sexual restraint, thereby increasing the extent of participants' sexual behavior. Depleted participants should engage in more extensive sexual behaviors than non-depleted participants.

We also assessed differences in the extent to which participants typically engaged in sexual behaviors with their dating partner (i.e., prior sexual experience). It seemed plausible that the effect of depletion on sexual behavior might depend upon this individual difference. Specifically, couples that typically engage in extensive sexual behaviors (i.e., sexually

experienced couples) likely do not restrain themselves sexually in the context of their relationship as evident by their relatively high level of sexual activity. Couples that do not engage in extensive sexual behaviors (i.e., sexually inexperienced couples) likely restrain themselves sexually to some degree, as suggested by their relatively low level of sexual activity (although other factors probably contribute to the couples' level of sexual experience). Self-control depletion impairs sexual restraint and so sexually inexperienced couples, who typically restrain themselves, should be less likely to restrain their sexual behavior when their self-regulatory resources have been depleted. Thus depletion should increase the extent of their sexual behavior. Sexually experienced couples, however, typically do not restrain their sexual behavior and therefore the extent of their sexual behavior might not be influenced by depletion.

We were also sensitive to the alternative hypothesis that sexually experienced (rather than inexperienced) couples might be especially likely to engage in extensive sexual behaviors when depleted. Sexually experienced (vs. inexperienced) couples should have more latitude for increasing the extent of their sexual behavior because they presumably are accustomed to engaging in both high or low degrees of sexual behavior. Depletion therefore might have a stronger effect among experienced couples because of the greater variability in their sexual behavior, whereas among inexperienced couples, the more limited range of their sexual behavior might obscure any effects of the depletion manipulation.

Method

Participants

Undergraduates currently dating someone with whom they would be comfortable engaging in some sort of physical intimacy (e.g., holding hands) were invited to participate. Participants were 21 male-female romantic couples that chose to sign-up for the study. At least one partner in the relationship was enrolled in an introductory psychology course and participated in exchange for partial course credit. Each couple was randomly assigned to a self-control depletion or no-depletion condition.

Procedure

Participants arrived to the study with their current romantic partner and were seated in separate rooms. Participants were told the study was examining the relationship between task performance and intimacy in relationships. The first task served as the manipulation of self-regulatory resources. Specifically, participants watched a 6 minute video (without sound) of a

woman talking. In the bottom corner of the screen, words (e.g., hair, hat, pulse) appeared individually for 10 seconds (modified from Gilbert, Krull, & Pelham, 1988). Participants in the depletion condition were instructed to focus their attention only on the woman's face and to refrain from looking at the words. If they happened to look at the words, they were to re-focus their attention on the woman as quickly as possible. Participants in the no-depletion condition were instructed to watch the video as they would normally (i.e., as if they were sitting at home watching television). Upon finishing their respective tasks, participants completed a manipulation check and the BMIS to assess for differences in mood and arousal (Mayer & Gaschke, 1988).

Next, participants were instructed that they would complete a task to assess how people express physical intimacy in their relationships. Participants were asked to express some sort of physical intimacy (e.g., holding hands, hugging) with their dating partner and that it was entirely up to them as to what they did (provided that both partners consented to the behavior). Participants were told that they would have complete privacy and were given 3 minutes to complete this task.

At the end of the task, participants were taken to separate rooms and were given a questionnaire on physical intimacy to assess the extent of their sexual behavior during the previous task. Participants were reminded that their responses to the questionnaire were completely confidential and were shown a closed box into which they would place their questionnaire when finished. For this questionnaire, participants were to indicate whether (yes or no) and to what extent they engaged in the following five behaviors on a scale from 1 (*not at all passionately/sexually*) to 9 (*very passionately/sexually*): holding hands, hugging, kissing closed and opened mouthed, and caressing. Next, participants wrote an essay that described the behaviors in which they and their partner engaged and how intense or sexual those behaviors were and in what ways. On a following item participants indicated the extent to which they and their partner typically engaged in sexual behaviors on a scale from 1 (*not too far- e.g., only kiss*) to 9 (*very far- e.g., sex*) which served as a measure of prior sexual experience. Last, participants completed demographic information and were probed for suspicion, thanked, and debriefed.

Results

Manipulation Check

Participants rated the difficulty of the video watching task as a rough check of the

demand of the depletion manipulation. The measure used, however, was unclear to participants and thus we were unable to confirm the success of the depletion manipulation. Previous research using the same manipulation, however, has consistently shown that depleted participants rate the video watching task as more difficult than non-depleted participants do (e.g., Schmeichel et al., 2003).

In addition, responses to the suspicion probe indicated that no participants were aware of the true purpose of the depletion manipulation (i.e., to influence the extent of subsequent sexual behavior). Also, depleted and non-depleted participants did not differ in the extent to which they typically engaged in sexual behaviors with their partner (i.e., prior sexual experience), $t < .13$, *n.s.*, which suggests that the depletion manipulation did not influence responses to this item. In support of the notion that sexually experienced couples do not restrict their sexual behavior, responses of couples scoring high on prior sexual experience (.80 SD above the mean) were at the maximum of the scale (9), whereas those for couples scoring low (1 SD below the mean) were below the midpoint of the scale (4.43).

Self-Control Depletion and Sexual Behavior

The extent of participants' sexual behavior during the experiment was assessed by their responses on the physical intimacy questionnaire to the five behavioral items (e.g., holding hands, hugging) and essay. The final dependent measure of sexual behavior during the experiment was created in the following steps: 1) We combined each participants' responses to the five behavior items into a single score ("no" responses were coded as 0's; Cronbach's Alpha = .92), 2) Participants' scores were then combined with the score of their dating partner to create a single score for each couple (Cronbach's Alpha = .88), 3) Participants' essays describing their sexual behavior were rated by two judges (blind to condition) on the extent to which participants engaged in sexual behaviors on a scale from 1 (*not at all passionate/sexual*) to 9 (*very passionate/sexual*), 4) The two judges' ratings for each participant were combined into a single index (Cronbach's Alpha = .88), 5) This score for each participant was combined with the score of his or her dating partner to form a single measure for each couple (Cronbach's Alpha = .76), 6) This measure was then combined with each couple's score for the behavioral items (Cronbach's Alpha = .92) which constituted the final dependent measure of sexual behavior during the last experimental task.

We predicted that depleted participants would engage in more extensive sexual behaviors

than non-depleted participants and were sensitive to the possibility that this effect might be especially pronounced among sexually inexperienced couples. Both of these possibilities were confirmed. A regression analysis was conducted to predict sexual behavior from depletion condition, prior sexual experience, and their interaction. Results indicated a main effect of condition, $\beta = 1.72, p < .05$, such that depleted participants engaged in more sexual behaviors than non-depleted participants. The effect of couples' prior sexual experience approached significance, $\beta = .41, p = .10$, such that sexually experienced couples engaged in more sexual behaviors than sexually inexperienced couples. Both main effects were qualified by their significant interaction, $\beta = -1.70, p < .05$ (see Figure 4).

To interpret the interaction between depletion condition and prior sexual experience, we assessed the simple effect of condition among couples who were relatively sexually inexperienced (1 SD below the mean) versus relatively experienced (.80 SD above the mean at the maximum of the scale; Aiken & West, 1991). Results indicated that the effect of depletion condition was significant for sexually inexperienced couples, $\beta = .70, p = .05$, but was not significant for sexually experienced couples, $p > .25$. Likewise, the main effect of prior sexual experience was driven by the relationship between couples' prior sexual experience and sexual behavior in the no-depletion condition, $r(10) = .59, p = .07$. Thus, depletion caused sexually inexperienced couples to engage in more sexual behaviors, whereas depletion did not seem to significantly affect sexually experienced couples.

Mood and Arousal

We also sought to determine whether the effects of depletion could be attributed to differences in mood or arousal (as assessed by the BMIS) between the two conditions. Analyses indicated that neither mood nor arousal mediated the relationship between depletion and sexual behavior. For female participants, there were no differences in mood or arousal between conditions, both p 's $> .43$, and neither mood nor arousal was significantly related to sexual behavior, both p 's $> .39$. For male participants, there was no difference in arousal between conditions, $p > .31$, and arousal was not significantly related to sexual behavior, $p > .10$. Depleted and non-depleted male participants did differ in mood, $p = .05$, such that depleted males were in a more positive mood, but mood was not related to sexual behavior, $p > .28$. In addition, when controlling for male and female participants' mood and arousal, the results of the primary analyses above remained relatively unchanged. Therefore it does not appear that the effect of depletion was caused by

differences in mood or arousal.

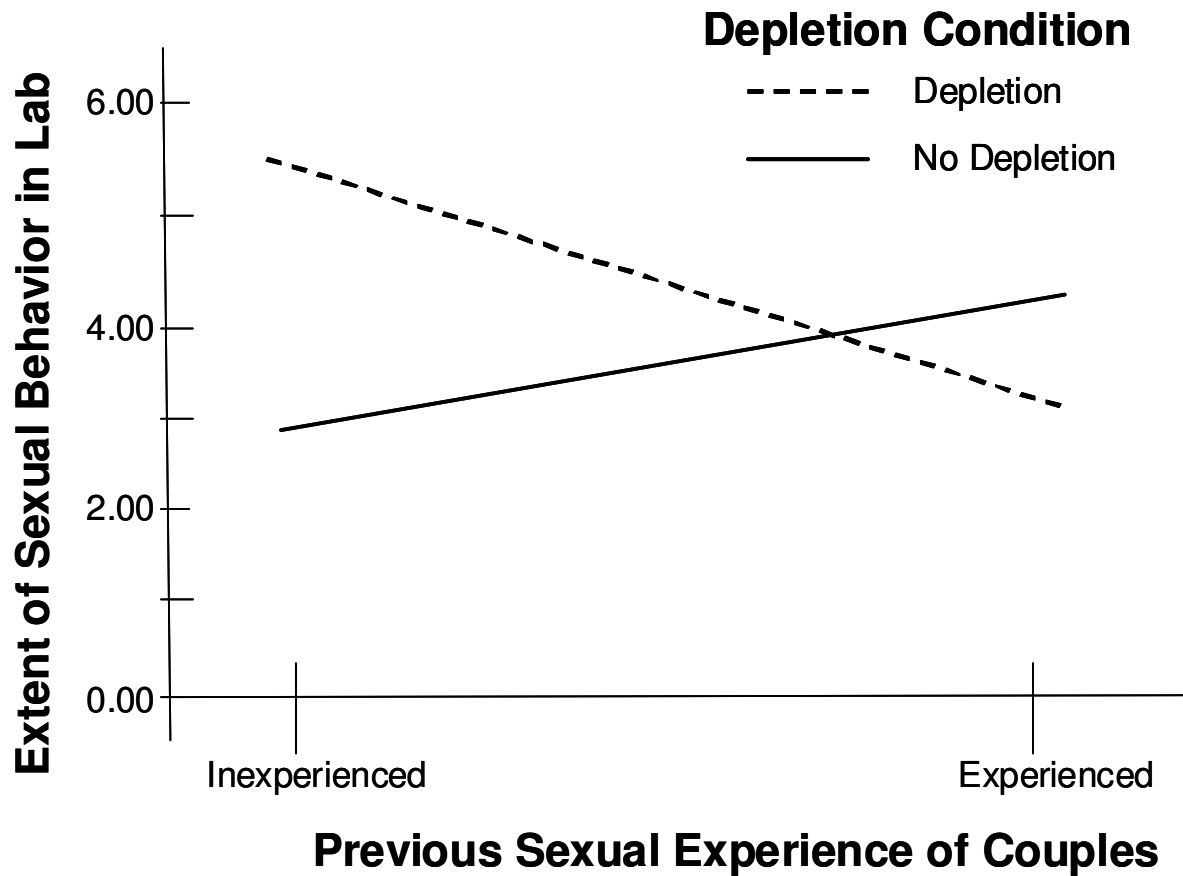


Figure 4. Extent of sexual behavior during the experiment as a function of depletion condition and couples' prior sexual experience.

Discussion

Although romantic partners may wish to engage in various sexual behaviors with one another, for multiple reasons they sometimes refrain from doing so. Study 4 found that self-control depletion caused participants to be less likely to restrain their sexual behavior with their romantic partner, such that they engaged in more extensive sexual behaviors than did non-depleted participants. Indeed, inspection of participants' responses on the final questionnaire

indicated that depleted participants did engage in extensive sexual behaviors: They kissed open-mouthed for prolonged periods of time, groped and caressed each other (e.g., on the buttocks and females' chest), and even removed articles of clothing so as to expose themselves. Presumably, depletion caused participants to be less able to control their sexual urges thereby increasing the extent of their sexual behavior.

In addition, this effect occurred primarily among sexually inexperienced couples (i.e., those who typically had not engaged in extensive sexual behaviors). Sexually experienced couples did not appear to engage in more extensive sexual behaviors when they were depleted. This finding is consistent with the notion that self-regulatory depletion impairs sexual restraint. Sexually experienced romantic partners probably do not restrict their sexual behavior with one another to the same extent as sexually inactive romantic partners. (In support of this, in the no-depletion condition, sexually experienced couples engaged in more extensive sexual behaviors than did inexperienced couples.) When their self-control was depleted, sexually inexperienced couples possibly became less able to restrict their sexual behavior as they would normally. Indeed, depleted inexperienced couples appeared to engage in the most extensive sexual behaviors in the lab (see Figure 4), which was perhaps the result of their no longer being able to restrain their sexual impulses and thus letting loose. These findings converge with the results of the previous studies by suggesting that impaired self-regulatory abilities undermine sexual restraint. Lacking self-control, people exhibit less sexual restraint.

An alternative interpretation would be that depletion strengthened participants' sexual impulses (rather than weakening sexual restraint), thereby increasing the extent of their sexual behavior. Sexually inexperienced couples perhaps possess less sexual desire than do sexually experienced couples, and so the effect of depletion therefore occurred primarily among them. Contrary to this possibility, however, there were no differences in self-reported arousal between depleted and non-depleted participants, which suggests that they did not differ in their levels of sexual arousal or strength of their sexual impulses. Likewise, it seems highly implausible that the depletion manipulation (watching a video while shifting attention away from words such as "picnic") would have stimulated sexual desire. Rather, the more reasonable and parsimonious conclusion seems to be that depletion impaired sexual restraint.

General Discussion

The current work examined whether dispositional and temporary impairments in self-regulation would cause people to fail at restraining their sexual behavior. The results of one pilot and four studies supported this possibility. Both dispositionally low and temporarily depleted self-regulatory strength were associated with poor sexual restraint. Specifically, participants who had completed an initial task that depleted their self-regulatory strength were less likely to stifle their sexual thoughts while solving word puzzles (Study 1), inhibit their willingness to engage in sexual infidelity (as assessed by hypothetical scenarios; Study 2), and restrict the extent of their sexual behavior with their romantic partner (Study 4), compared to participants who had not depleted their self-regulatory strength. Narrative accounts of failures in sexual restraint in everyday life depicted a similar pattern (Study 3). Participants recalled the circumstances preceding times when they were unable to restrain their sexual behavior as having been more depleting (i.e., they required more self-control) than the circumstances preceding times when they were able to restrain their sexual behavior. Thus, both experimental manipulations of self-control and self-report data converge upon the hypothesis that low self-control causes failures in sexual restraint.

The relationship between trait self-control and sexual restraint provided additional support that low self-control is associated with failures in sexual restraint. Specifically, participants with low trait self-control reported having poor dispositional sexual restraint (Pilot Study). They were also less likely to stifle their sexual thoughts while solving word puzzles (Study 1) and less likely to inhibit their willingness to engage in sexual infidelity (as assessed by hypothetical scenarios; Study 2), compared to participants with higher trait self-control.

Further, there was some evidence that participants most likely to rely on self-regulation to restrain their sexual urges were the most likely to fail at restraining their sexual urges when self-regulation was impaired. Specifically, men and sexually unrestricted individuals have the strongest desires to engage in sexual infidelity (e.g., Buss & Schmitt, 1993; Seal et al., 1994) and therefore might be especially likely to self-regulate so as to refrain from committing such acts. Consistent with this, male participants seemed especially willing to engage in sexual infidelity when they were depleted or possessed low trait self-control and sexually unrestricted participants seemed especially willing to engage in sexual infidelity when they were depleted. In addition, sexually inexperienced couples, who appear to restrain their sexual behavior, were less likely to

restrain themselves sexually in the laboratory when they were depleted, compared to their non-depleted counterparts.

Altogether, these results provide converging multi-method evidence that low self-control causes people to fail at restraining their sexual behavior. Results based on dispositional differences in self-control, experimental manipulations of self-control, and narrative accounts of sexual restraint all converge upon the hypothesis that low self-control causes failures in sexual restraint. Presumably, people must self-regulate so as to restrict their sexual behavior and therefore fail to do so when they are less able to self-regulate.

An alternative interpretation of these results, however, might be that impaired self-regulation increases the strength of people's sexual desires, thereby increasing the extent of their sexual behavior. This explanation seems unlikely for several reasons. First, it is highly implausible that the initial self-control tasks we used (e.g., the Stroop task) would have been sexually arousing, especially in comparison to the tasks used in the control conditions (e.g., congruent ink-word trials on the Stroop task). Second, we found no evidence that self-control was associated with self-reported arousal or that arousal was associated with sexual behavior. Third, Study 2 showed that the effects of impaired self-regulation (low trait self-control and depletion) increased willingness to engage in sexual infidelity primarily among participants with the strongest desires to engage in sexual infidelity (male participants and unrestricted participants). Had self-regulatory impairments increased the strength of sexual impulses, one might have expected such impairments to influence primarily participants with the least amount of desire to engage in sexual infidelity because they had more latitude for increasing the strength of their impulses. Rather, the most parsimonious and logical conclusion seems to be that self-regulatory impairments undermine sexual restraint (rather than strengthen sexual impulses).

Limitations

The current work is not without its limitations, however. First, all of our participants were university students. Insofar as university students differ from the more general population in their sexual desires or behavior, then one might expect that our conclusions may not generalize to other populations. For instance, university students possibly possess stronger sexual desires than other populations and for them self-control may be especially important in restricting their sexual behavior. Then again, one might argue that university students exhibit the least sexual restraint and so the relationship between self-control and sexual restraint may be less evident

among university students. Perhaps even stronger results would emerge from a less restricted range.

Second, we did not examine all forms of sexual behavior. In particular, we did not examine situations that require increased sexual activity. Individuals who believe that the extent of their sexual behaviors are below what is normative may self-regulate to try to behave more sexually (e.g., someone in a close relationship whose sexual interest in the partner has waned problematically, or a gay person who must feign sexual interest in a heterosexual relationship). Impaired self-control should undermine such sexual regulation in these contexts as well, although the current results are limited in drawing such a conclusion. Likewise, the current results would not apply to situations in which there is no conflict between what the individual wants to do and what the individual should or ought to do. For instance, American values and norms have supported marital sex for at least the past century (e.g., D'Emilio & Freedman, 1997) and we would not expect impaired self-control to influence sexual behavior between two spouses when both spouses desire sexual activity. Indeed, we found that couples with fairly advanced sexual lives (Study 4) were not affected by self-regulatory depletion, consistent with the idea that self-regulation does not influence sexual behavior in the absence of conflicting demands.

Implications

The current work has potentially important implications concerning mental health and criminal behavior. Compulsive sexuality or sexual addiction is marked by unsuccessful attempts to regulate sexual behaviors (e.g., Carnes, 1983; Coleman, 1992; Gold & Heffner, 1998; Earle & Crow, 1990) and so self-control may be especially important in restraining sexual behavior among people with sexual control disorders (see Wiederman, 2004). Low self-control may be an important causal factor of sexual control disorders. If such individuals had greater self-control strength, then they should be more capable of restraining their sexual behavior. Likewise, lapses in sexual restraint among such individuals may occur primarily when they have been exerting self-control in other domains of their lives (i.e., when they are depleted). Similarly, sexual offenders may also be more likely to commit illegal sexual acts when they lack self-control, insofar as they attempt to refrain from committing such acts. Thus, life circumstances that make extra demands on self-control may be considered risk factors for increasing sexually inappropriate, pathological, or criminal behavior.

In terms of social behavior, the current findings suggest another domain in which self-regulation fosters the ability to follow social norms and other rules. What an individual wants to do can oftentimes differ from what social regulations prescribe that the individual should do and thus the individual must then control his or her behavior to abide by such regulations. Consistent with this possibility, when people possess high self-control they are less likely to behave violently or in other ways harmful to relationships (e.g., Finkel & Campbell, 2001; Tangney et al., 2004), commit criminal acts (e.g., Gottfredson & Hirschi, 1990), and express stereotypes and prejudice (Gordijn et al., 2004; Richeson & Shelton, 2003). The current research indicates that self-control allows people to control their sexual behavior and thus abide by social regulations that require sexual restraint.

A final implication concerns the relationship between trait self-control and temporary self-control depletion. We found no evidence that trait self-control interacted with depletion in predicting sexual restraint (Studies 2 & 3). Rather, we found two main effects for both trait self-control and depletion. This implies that individuals high in trait self-control possess greater self-control strength than those low in self-control, but that individuals high in self-control become depleted to the same extent as do those low in self-control. Therefore, high trait self-control does not appear to attenuate the rate at which self-regulatory resources become depleted. Nonetheless, even when depleted, people high in trait self-control appear more capable of regulating than do people with low trait self-control, which perhaps is one cause of the numerous benefits experienced by those with high trait self-control (e.g., Mischel et al., 1988; Tangney et al., 2004).

Concluding Remarks

The arrival of modern society placed even greater demands upon the individual than were present in pre-historic times (e.g., Baumeister, 2005). Society insists that behavior cannot be guided uncontrollably by any desire or impulse that may arise, but instead must be controlled and modified in accordance with established social regulations. In this way, people can aspire to live moral, lawful, healthy lives and strive toward interpersonal harmony and intrapersonal success. By exerting self-control, people are able to resist being “slaves to their passions” when they seek to resist doing what their passions tell them to do.

Perhaps one of the largest discrepancies between people’s natural desires and the social demands that restrict those desires lies within human sexuality. People are not free to express or act upon every sexual impulse that may arise, even though society is becoming progressively less

sexually restrictive. The current research indicates that through the ability to self-regulate, people can hope to restrain their sexual behavior, even despite the strength of their sexual desires. As a result, individuals can avoid engaging in sexual behaviors that may be harmful to themselves or others, and instead aspire toward maintaining a healthy and manageable sexual lifestyle.

FOOTNOTES

¹ Some may wonder whether the self-regulatory depletion framework differs from models of limited attention proposed some years earlier (e.g., Broadbent, 1958). The depletion framework does differ from such models. Whereas attentional models often posit that attention is limited when there exist multiple current attentional demands, the depletion framework posits that self-regulation is limited following previous self-regulatory demands. In addition, given the increasing support for domain specific processes, some may wonder whether a domain general model of self-regulation is valid. Research indicates that such a model is valid such that, across numerous domains, self-regulatory behavior appears to rely upon a single resource or strength (see Muraven & Baumeister, 2000 for a review).

² Logistic regression is conceptually similar to a chi-square analysis except that it allows for multiple independent variables, whereas chi-square analyses allow for only a single independent variable.

³ In predicting willingness to engage in sexual infidelity, the simple interaction between trait self-control and depletion condition and their higher-order interaction with gender were not significant, both p 's $> .47$. The non-significant interaction between trait self-control and depletion condition is consistent with the results of Study 1 and again suggests that participants higher in trait self-control have greater self-regulatory strength than participants with lower trait self-control, rather than the possibility that high trait self-control prevents depletion.

APPENDIX – MATERIALS

Word fragments and anagrams used in Study 1:

CH _ _ _

WIN _ _ _

BRE _ _ _

CO _ _

FRO _ _

SLU _ _ _

BU _ _

F _ _

MU _ _ _

PA _ _ _

BOO _ _

COL _ _

SKA _ _

S _ _

ETER = _____

SYK = _____

NISEP = _____

CHFIE = _____

STLOO = _____

BRIKC = _____

HSWOER = _____

TLAL = _____

ILGHT = _____

UTRN = _____

EOSH = _____

Example scenarios from Study 2:

You and your girlfriend have been dating for six months. You consider the relationship to be good and potentially plan to remain together long-term. Although you have a mutual agreement to remain monogamous to one another, you are tempted to slip up one night. You go to see a movie with a female friend who tries to give you a goodbye kiss at the end of the night.

You and your girlfriend have been together for over one year and you really believe that you are in love. You have discussed marriage, but no serious plans have been agreed upon. So far, you have both been completely monogamous. By month 15, you become restless and decide to go on a date with one of the people who you work with. You do not plan to become intimate with her, but after the date is over, you are invited back to your co-worker's house. As the night progresses, it becomes apparent that your co-worker would like to sleep with you.

You and your girlfriend have been in a relationship for two years and both of you have seriously agreed to be monogamous. Both of you have cheated in the past, but not on each other. One day, you meet another girl at the mall and you engage in some casual conversation. You find out her name and are offered her phone number. You take it with the intention to talk to her as a friend. One night, this person wants to meet up with you and have a few drinks. You agree, but tell your girlfriend that you are going out with friends. You are having a good time with her, but feel guilty for lying to your girlfriend. Later that evening, though, the girl initiates sex.

Imagine that you are at a sorority party. You've been drinking and having a really good time. Your girlfriend couldn't make it to the party, though. That's ok, because you've been talking to an extremely attractive girl. At this point, you're feeling really comfortable with her. The girl is really hot and you find yourself very attracted to her. Later in the night, you are alone with her in her bedroom.

Imagine that you have been working on a school project with one of your close friends of the opposite sex. While working together, the two of you have been having a lot of fun. You've always thought your friend to be attractive, but today she looks especially sexy. She is in great shape and is wearing a really hot outfit. Your girlfriend is out of town for the weekend and you're considering cheating on her.

For spring break, you go to Panama City with a bunch of your friends. Meanwhile, your girlfriend goes back to visit relatives in another state. You're pretty upset with her because you were hoping to have fun with her at the beach. Nonetheless, you are having a good time at the beach, hanging out with your friends and swimming. One day, you meet a very attractive girl on the beach. She is wearing her swimsuit and looks irresistibly hot. The two of you strike up a conversation and get along pretty well. Later at night, the two of you run into each other again. You find yourself very aroused to see her. The two of you find yourselves in your hotel room, alone.

Imagine that you're at a football game with several of your friends. You're a big fan, so you're really enjoying yourself. Unfortunately, your girlfriend doesn't like football, so she is staying at home for the day. After the game, you and everyone head over to Kris' house, who is one of your female friends. Throughout most of the day, you've been speaking with Kris. As the night winds down, all of your friends leave until only you and Kris are in the house. You've always been very attracted to her, and she tells you that night that it's too bad you have a girlfriend, because she has always found you very attractive. You can tell by Kris' looks that she really wants to be more than just friends.

REFERENCES

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park: Sage.
- Allgeier, A. R., & Allgeier, E. R. (1995). *Sexual interactions* (4th ed.). Lexington, MA: D. C. Heath.
- Armentrout, J. A., & Hauer, A. L. (1978). MMPIs of rapists of adults, rapists of children, and non-rapist sex offenders. *Journal of Clinical Psychology, 34*, 330-332.
- 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.
- Barth, R. J., & Kinder, B. N. (1987). The mislabeling of sexual impulsivity. *Journal of Sex and Marital Therapy, 13*, 15-23.
- Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. (1998). Self-control depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology, 74*, 1252-1265.
- Baumeister, R.F. (2005). *The cultural animal: Human nature, meaning, and social life*. New York: Oxford University Press.
- Baumeister, R.F., & Twenge, J.M. (2002). Cultural suppression of female sexuality. *Review of General Psychology, 6*, 166-203.
- Baumeister, R.F., Catanese, K.R., & Vohs, K.D. (2001). Is there a gender difference in strength of sex drive? Theoretical views, conceptual distinctions, and a review of relevant evidence. *Personality and Social Psychology Review, 5*, 242-273.
- D'Emilio, J. D., & Freedman, E. B. (1997). *Intimate matters: A history of sexuality in America*. Chicago: University of Chicago Press.
- DeLamater, J. (1989). The social control of human sexuality. In K. McKinney & S. Sprecher (Eds.), *Human sexuality: The societal and interpersonal context* (pp. 30-62). Norwood, NJ: Ablex.
- Earle, R. H., & Crow, G. M. (1990). Sexual addiction: Understanding the phenomenon. *Contemporary Family Therapy, 12*, 89-104.
- Exner, T. M., Meyer-Bahlburg, H. F. L., & Ehrhardt, A. A. (1992). Sexual self-control as a mediator of high risk sexual behavior in a New York City cohort of HIV+ and HIV- gay men. *Journal of Sex Research, 29*, 389-406.

- Finkel, E. J., & Campbell, W. K. (2001). Self-control and accommodation in close relationships: An interdependence analysis. *Journal of Personality and Social Psychology, 81*, 263-277.
- Gailliot, M. T., & Baumeister, R. F. (in press). Self-control and business ethics: How strengthening the self benefits the corporation and the individual. In R. A. Giacalone, C. L. Jurkiewicz, & C. Dunn (Eds.), *Positive Psychology, Ethics, and Social Responsibility in Organizational Life*. Greenwich, CT: Information Age.
- Gilbert, D. T., Krull, D. S., & Pelham, B. W. (1988). Of thoughts unspoken: Social inference and the self-regulation of behavior. *Journal of Personality and Social Psychology, 55*, 685-694.
- Giotakos, O., Vaidakis, N., Markianos, M., & Chrisodoulou, G. N. (2003). Personality characteristics of sexual offenders. *Psychiatriki, 14*, 189-190.
- Goettsch, S. L. (1994). Extramarital sex. In V. L. Bullough & B. Bullough (Eds.), *Human sexuality: An encyclopedia* (pp. 194-199). New York: Garland.
- Gold, S. N., & Heffner, C. L. (1998). Sexual addiction: Many conceptions, minimal data. *Clinical Psychology Review, 18*, 367-381.
- Gordijn, E. H., Hindriks, I., Koomen, W., Dijksterhuis, A., & Van Knippenber, A. (2004). Consequences of stereotype suppression and internal suppression motivation: A self-regulation approach. *Personality and Social Psychology Bulletin, 30*, 212-224.
- Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.
- Hanson, R. K., & Bussiere, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology, 66*, 348-362.
- Hernandez, J. T., & DiClemente, R. J. (1992). Self-control and ego identity development as predictors of unprotected sex in late adolescent males. *Journal of Adolescence, 15*, 437-447.
- Jaccard, J. (2001). *Interaction effects in logistic regression*. Thousand Oaks, Calif.: Sage Publications.
- Kalichman, S. C., Johnson, J. R., Adair, V., Rompa, D., Multhauf, K., & Kelly, J. A. (1994). Sexual sensation seeking: Scale development and predicting AIDS-risk behavior among homosexually active men. *Journal of Personality Assessment, 62*, 385-397.
- Kinsey, A. C., Pomeroy, W. B., & Martin, C. E. (1948). *Sexual behavior in the human male*. Philadelphia: W. B. Saunders.

- Kinsey, A. C., Pomeroy, W. B., Martin, C. E., & Gebhard, R. H. (1953). *Sexual behavior in the human female*. Philadelphia: W. B. Saunders.
- Koepp, W., Schildbach, S., Schmager, C., & Rohner, R. (1993). Borderline diagnosis and substance abuse in female patients with eating disorders. *International Journal of Eating Disorders*, *14*, 107-110.
- Mayer, J. D., & Gaschke, Y. N. (1988). The experience and meta-experience of mood. *Journal of Personality and Social Psychology*, *55*, 102-111.
- McGrath, R. J. (1991). Sex-offender risk assessment and disposition planning: A review of empirical and clinical findings. *International Journal of Offender Therapy & Comparative Criminology*, *35*, 328-350.
- Metts, S. (1994). Relational transgressions. In D. J. Canary & L. Stafford (Eds.), *Communication and relational maintenance* (pp. 217-239). San Diego: Academic Press.
- Miracle, A., Miracle, T., & Baumeister, R.F. (2002). *Human Sexuality: Meeting Your Basic Needs*. Upper Saddle River, NJ: Prentice-Hall/Pearson.
- Mischel, W., Shoda, Y., & Peake, P. K. (1988). The nature of adolescent competencies predicted by preschool delay of gratification. *Journal of Personality and Social Psychology*, *54*, 687-696.
- Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin*, *126*, 247-259.
- Muraven, M., & Slessareva, E. (2003). Mechanisms of self-control failure: Motivation and Limited Resources. *Personality and Social Psychology Bulletin*, *29*, 894-906.
- Muraven, M., Tice, D. M., & Baumeister, R. F. (1998). Self-control as a limited resource: Regulatory depletion patterns. *Journal of Personality and Social Psychology*, *74*, 774-789.
- Ostovich, J. M., & Sabini, J. (2004). How are sociosexuality, sex drive, and lifetime number of sexual partners related? *Personality and Social Psychology Bulletin*, *30*, 1255-1266.
- Pratt, T. C., & Cullen, F. T. (2000). The empirical status of Gottfredson and Hirschi's general theory of crime: A meta-analysis. *Criminology*, *38*, 931-964.
- Quatroy, K. A. (2004). The relationship between experience of infidelity and perception of infidelity. Retrieved 10/22/2004 from <http://clearinghouse.mwsc.edu/manuscripts/190.asp>.
- Richeson, J. A., & Shelton, J. N. (2003). When prejudice does not pay: Effects of interracial contact on executive function. *Psychological Science*, *14*, 287-290.

- Schmeichel, B. J., Vohs, K. D., & Baumeister, R. F. (2003). Intellectual performance and self-control depletion: Role of the self in logical reasoning and other information processing. *Journal of Personality and Social Psychology*, *85*, 33-46.
- Seal, D. W., Agostinelli, G., & Hannett, C. A. (1994). Extradynamic involvement: Moderating effects of sociosexuality and gender. *Sex Roles*, *31*, 1-22.
- Sheppard, V. J., Nelson, E. S., & Andreoli-Mathie, V. (1995). Dating relationships and infidelity: Attitudes and behaviors. *Journal of Sex and Marital Therapy*, *21*, 202-212.
- Shiffrin, R. M., & Schneider, W. (1977). Controlled and automatic human information processing: I. Detection, search, and attention. *Psychological Review*, *84*, 1-66.
- Shoda, Y., Mischel, W., & Peake, P. K. (1990). Predicting adolescent cognitive and self-regulatory competencies from preschool delay of gratification: Identifying diagnostic conditions. *Developmental Psychology*, *26*, 978-986.
- Simpson, J. A., & Gangestad, S. W. (1991a). Individual differences in sociosexuality: Evidence for convergent and discriminant validity. *Journal of Personality and Social Psychology*, *60*, 870-883.
- Simpson, J. A., & Gangestad, S. W. (1991b). Personality and sexuality: Empirical relations and an integrative theoretical model. In K. McKinney, & S. Sprecher (Eds.), *Sexuality in close relationships* (pp. 71-92). New Jersey: Erlbaum.
- Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, *72*, 271-322.
- Tannahill, R. (1980). *Sex in history*. New York: Stein & Day/Scarborough.
- Thompson, A. R. (1983). Extramarital sex: A review of the research literature. *The Journal of Sex Research*, *19*, 1-22.
- Twenge, J. M., Muraven, M., & Tice, D. M. (2004). Measuring state self-control: Reliability, validity, and correlations with physical and psychological stress. Unpublished manuscript. San Diego State University.
- Vohs, K. D., & Faber, R. (2004). To buy or not to buy?: Self-control and self-regulatory failure in purchase behavior. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications*. New York, NY: Guilford Press.
- Vohs, K. D., Baumeister, R. F., & Ciarocco, N. J. (in press). Self-regulation and self-presentation: Regulatory resource depletion impairs impression management and effortful

- self-presentation depletes regulatory resources. *Journal of Personality and Social Psychology*.
- Weiss, D. L., & Slosnerick, M. (1981). Attitudes toward sexual and nonsexual extramarital involvement among a sample of college students. *Journal of Marriage and the Family*, *43*, 349–358.
- Wiederman, M. W. (2004). Self-control and sexual behavior. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications*. New York, NY: Guilford Press.
- Wills, T. A., Gibbons, F. X., Gerrard, M., Murry, V. M., & Brody, G. H. (2003). Family communication and religiosity related to substance use and sexual behavior in early adolescence: A test for pathways through self-control and prototype perceptions. *Psychology of Addictive Behaviors*, *17*, 312-323.
- Zanarini, M. C., Frankenburg, F. R., Dubo, E. D., Sickel, A. E., Trikha, A., Levin, A., & Reynolds, V. (1998). Axis I comorbidity of borderline personality disorder. *American Journal of Psychiatry*, *155*, 1733-1739.

BIOGRAPHICAL SKETCH

Matthew Thomas Gailliot was born in Toledo, Ohio. He earned a B.A. in Psychology, with Honors, from Kennesaw State University in 2003.

Matt has presented his work at several national and regional psychological conferences and has published several articles appearing in psychological journals.