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The Effect of Romantic Jealousy on Self-Control: An Examination of Trait Constructs and Sex  
Differences Based on Survey and Experimental Data

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A dissertation  
presented to  
the faculty of the Department of Psychology  
East Tennessee State University

In partial fulfillment  
of the requirements for the degree  
Doctor of Philosophy in Psychology

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by  
Lyndsay Ann Nelson  
August 2014

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Ginette Blackhart, Ph.D., Chair  
Matt McBee, Ph.D.  
Eric Sellers, Ph.D.  
Jon Webb, Ph.D.  
Stacey Williams, Ph.D.

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## ABSTRACT

The Effect of Romantic Jealousy on Self-Control: An Examination of Trait Constructs and Sex Differences Based on Survey and Experimental Data

by

Lyndsay Ann Nelson

A large body of research has demonstrated that the experience of romantic jealousy is often associated with a variety of negative outcomes. However, evolutionary psychologists have provided evidence that jealousy is an adaptive emotion that can aid with mate retention. Together these lines of research suggest that jealousy may at times work to protect and enhance one's relationship, whereas in other cases it could lead to harmful consequences. Considering the varying outcomes of jealousy, it is critical that research explore more specifically how this complex state operates and how it affects individuals' functioning. In the present research I conducted 2 separate studies in order to examine how jealousy is related to self-control. In Study 1 I used an online survey to examine how individuals' trait self-control was related to their levels of chronic jealousy. Results showed that trait self-control was negatively associated with cognitive and behavioral jealousy but was not associated with emotional jealousy. Additionally, all 3 components of jealousy explained variance in self-control above and beyond the effects of self-esteem and rejection sensitivity. In Study 2 I used hypothetical scenarios in order to experimentally examine how imagined infidelity would impact individuals' state self-control. Furthermore, based on research demonstrating sex differences in distress based on different types of infidelity, I examined how imagined sexual and emotional infidelity would differentially impact males' and females' state self-control. Using a 3 x 2 between-subjects design, participants from a primarily young adult sample were randomly assigned to 1 of 3 conditions: emotional

infidelity, sexual infidelity, and a control. Afterward, state self-control was assessed through a behavioral task. Results showed no differences in state self-control based on condition and no difference between males and females based on type of infidelity. There was a main effect for sex, such that males generally showed higher self-control than females across all 3 conditions. Although the results demonstrate that chronic jealousy and trait self-control are associated constructs, the findings from Study 2 suggest that the experience of jealousy not does impact state self-control. Methodological concerns are addressed and future avenues are presented for researching how jealousy and self-control may be related.

## DEDICATION

This work is dedicated to my grandparents. I am fortunate enough to have received a great deal of support and encouragement from both my maternal and paternal grandparents throughout my education. I could not have asked for more thoughtful and loving individuals to help guide me through this journey. Thank you from the bottom of my heart: Grandma Joan, Grandma Shirley, Grandpa Don, and Grandpa Bill.

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## CHAPTER 1

### INTRODUCTION

Many of us can probably relate to the distressful feeling that accompanies the idea of a romantic partner becoming intimate with someone else. In fact, jealousy is a very common occurrence among most people. Past survey research has revealed that nearly all men and women have experienced at least one episode of intense jealousy (Buss, 2000) and that jealousy is experienced at some point in most romances (Harris, 2009). This high prevalence should not necessarily come as a surprise considering evidence that suggests jealousy is actually an adaptive emotion (Buss & Schmitt, 2000; Daly & Wilson, 1988). For example, expressing jealousy can facilitate mate retention by warding off potential rivals and deterring partners from leaving the relationship (Buss, Larsen, Westen, & Semmelroth, 1992; Dijkstra, Barelds, & Buunk, 2010; Kaighobadi, Shackelford, & Goetz, 2009). Although this research suggests that jealousy should aid in survival and reproduction, other research shows that excessive jealousy can be maladaptive. Over the past several decades studies have elucidated the negative consequences that often stem from this emotion. Male sexual jealousy, specifically, is frequently cited as a cause of both lethal and nonlethal violence in romantic relationships (e.g., Daly & Wilson, 1988; Daly, Wilson, & Weghorst, 1982; Dutton, van Ginkel, & Landolt, 1996). Females too have been shown to act more aggressively when jealous (e.g., Leisring, 2011). Taking both perspectives together, jealousy can best be viewed as a paradoxical emotion. At moderate levels it should aid in mate retention, but when reaching an extreme the results may be detrimental.

Although a great deal of research has examined specific emotions and behaviors associated with jealousy, less is understood about *how* jealousy may impact a wide variety of these outcomes. As research has demonstrated the impulsive and damaging effects of jealousy,

there is significant value in exploring whether jealousy impacts self-control. No research has previously examined this link. If the experience of jealousy does indeed lead to impaired self-control, there are not only implications for both intrapersonal and interpersonal functioning but also a possible explanation for why jealousy often leads to reckless behavior. Additionally, there is reason to believe that jealousy may differentially affect males' and females' self-control depending on the type of jealousy encountered. Based on evolutionary theories, past research has consistently demonstrated that males, relative to females, are more upset by a partner's sexual infidelity, whereas females, relative to males, are more upset by a partner's emotional infidelity (see Sagarin et al., 2012 for a review). Therefore, although we might expect generally for jealousy to negatively affect self-control, these sex differences in distress imply that type of jealousy could also produce sex differences in self-control. In the present research I sought to 1) examine generally the association between chronic jealousy and trait self-control, 2) determine whether perceived infidelity leads to self-control depletion, and 3) examine sex differences in state self-control following either perceived sexual or emotional infidelity.

### **Romantic Jealousy**

Over the past several years romantic jealousy has received increased attention in social psychological research because of its critical role in the experience of relationships and many relationship problems. In regards to defining this construct, there is general consensus among researchers that jealousy involves a complex interplay of emotions, cognitions, and behaviors that are experienced by individuals who perceive that a potential third party is threatening their relationship (e.g., Guerrero, Spitzberg, & Yoshimura, 2004; Pfeiffer & Wong, 1989). The term "perceive" is key in this conceptualization because the existence of an actual threat is not

necessary in order for one to experience jealousy. In fact, the onset of jealousy can be triggered by loss of affection, suspiciousness, insecurity, and anxiety (Peretti & Pudowski, 1997).

As mentioned above, jealousy is often viewed as harmful to relationships. In support of this claim, research has shown that jealousy leads to negative emotions including anger, fear, and sadness (Guerrero & Anderson, 1998; Sharpsteen & Kirkpatrick, 1997). Furthermore, studies examining jealousy have demonstrated that it is positively associated with relational dissatisfaction (Guerrero & Eloy, 1992) and both verbal and physical abuse (e.g., Barnett, Martinez, & Bluestein, 1995). Although the link between jealousy and abuse may be perceived as pertaining only to men, O'Leary, Smith Slep, and O'Leary (2007) found that jealousy was a strong predictor of partner aggression for both men and women. Females, for example, have been shown to use indirect aggression when mating motives are salient (Campbell, 1999; Griskevicius et al., 2009). Additionally, de Weerth and Kalma (1993) had participants report their reactions to infidelity and found that females were more likely than males to declare that they would use violence against their partner. In another study college women reported that one of their most common motives for perpetration of minor physical violence against their partner was jealousy (Leisring, 2011). However, it is important to note that although males and females have been shown to possess similar levels of jealousy (Hansen, 1982; Pines & Friedman, 1998), the consequences of severe male jealousy (compared to severe female jealousy) tend to be much worse. In fact, jealousy is one of the most common reasons that men commit homicide against women cross-culturally (Daly & Wilson, 1988; Daly et al., 1982).

Although research has provided evidence that jealousy can often lead to negative outcomes, in order to understand this construct more thoroughly, it is important to consider explanations for why jealousy exists in the first place. That is, why do humans experience this

specific negative emotional reaction when they believe their relationship is threatened by a rival? Is there perhaps some adaptive purpose that jealousy may serve? Evolutionary psychologists have proposed that jealousy may have actually evolved to enhance humans' fitness and chances of survival (e.g., Buss & Shackelford, 1997). Based on this perspective, although jealousy can lead to negative emotions and behaviors, it is viewed as an adaptive emotion that ultimately works to increase mate retention and provide benefits. When an individual experiences jealousy, it should alert him or her to take action and protect his or her relationship; by doing so, it will improve relationship maintenance that will ultimately work to provide benefits and increase the chance of survival of both that individual and the couple's offspring.

In support of this theory research has demonstrated that individuals' decisions to evoke jealousy in their partner are motivated by relationship goals (Sheets, Fredendall, & Claypool, 1997; White, 1980). Rydell, McConnell, and Bringle (2004) found that individuals in committed relationships were more likely to react jealously to threatening information than individuals in less committed relationships. Similarly, other research has found jealousy to be positively correlated with romantic love (Mathes & Severa, 1981). Mathes (1986) conducted a longitudinal study showing that individuals who remained in their relationship after 7 years had higher levels of jealousy (measured at Time 1) than those who had broken up during that period of time. In a different study Sheets et al. (1997) revealed that it was not necessarily jealousy that predicted relationship stability, but actually the partners' verbal and behavioral reassurances that they were "faithful" led to greater stability. In this respect jealousy was still effective in achieving relationship goals because it exposed partners' commitment, which contributed to a stronger relationship.

## **Sex Differences in Jealousy**

Research has demonstrated that not only will males and females exhibit different behaviors when jealous, but also that each sex will become more or less jealous depending on whether they perceive emotional or sexual infidelity in their relationship. Evolutionary psychologists have proposed and provided evidence that because men and women evolved to possess different mating strategies and concerns, women will show more jealousy in response to emotional infidelity and men will become more jealous in response to sexual infidelity (e.g., Buss et al., 1992; Daly et al., 1982; Sagarin et al., 2012).

Research examining mate selection strategies has demonstrated that, in general, women are more likely to adopt long-term mating strategies and men are more likely to adopt short-term mating strategies (Fletcher, Simpson, Campbell, & Overall, 2013). Specifically, men desire many more sexual partners than women do and are much more interested in sexual variety and casual sex than are women (Clark & Hatfield, 1989; Schmitt, 2003). Such differences have been consistently reported cross-culturally and in large, diverse U.S. samples (Buss, 1989). Evolutionary psychologists have proposed theories such as parental investment theory (Trivers, 1996) to help explain these sex differences. Essentially this theory draws attention to the adaptive problems that men and women faced during our ancestral history to show why either sex evolved to possess different mating strategies.

Parental investment theory (Trivers, 1996) points specifically to the substantially higher investment that women must make in order to reproduce relative to men. When a woman becomes pregnant it requires a great deal of both time and effort just to produce a single child. Because of their higher parental investment, women would benefit much more by seeking committed, long-term partners who would also be willing to invest in their offspring. Based on

this theory, those ancestral women who enacted such long-term mating strategies would have increased the chances of survival for both her and her offspring compared to those who did not. Indeed, research supports that it is women, rather than men, who tend to be choosier in their mate selection and seek partners who possess status and resources (Feingold, 1992). Men, on the other hand, need only to exert minimal effort in order to produce the same child. Therefore, based on these evolutionary theories, a strategy that consisted of casual mating would prove to be more reproductively successful for men than for women. Those men who mated with many women out-reproduced those who mated with fewer women. Generally, then, men should have evolved a desire to have sex with a variety of women.

Considering differences in mating strategies and concerns, researchers have explored whether men and women may react more strongly to perceived infidelity depending on whether it is emotional or sexual in nature. For clarification purposes, sexual infidelity refers to a partner having sexual intercourse with someone else. Emotional infidelity refers to a partner having strong feelings for, and perhaps loving, someone else. Based on paternal investment theory, women would be expected to experience more jealousy in response to possible emotional infidelity than sexual infidelity. Again, because women tend to engage more long-term mating strategies and are focused on attaining a partner who will support her and her offspring, the possibility of emotional infidelity should be perceived as most threatening. Such infidelity suggests not only that one's partner has feelings for someone else, but that he is also likely to invest his time, resources, and commitment in this other person. Men, on the other hand, were hypothesized to react more strongly to sexual than to emotional infidelity. While women have the primary concern of finding a mate who will invest in their offspring, men face a different challenge with propagating their genes. Namely, men encounter the dilemma of paternal

uncertainty (Fletcher et al., 2013). Essentially, this evolutionary psychology term is used to refer to the fact that across evolutionary history men could never be 100% certain that they were the biological father of their mate's children. Women of course know they are the genetic mother of their children and therefore never encounter such a concern. In order for a man to ensure that his investments in his mate and offspring will propagate his own genes, he may become especially jealous to the prospect of sexual infidelity. Such negative emotional reactions should serve to guard his mate, punish interlopers, and ward off potential rivals; all of which would increase the chances of paternal certainty (Fletcher et al., 2013).

Numerous studies have tested the hypotheses that men will be more upset in response to sexual infidelity and that women will be more upset in response to emotional infidelity. Buss et al. (1992) designed one of the first studies that asked participants to choose which of two scenarios would upset them more: Imagining their partner had formed a deep emotional attachment to another person or imagining their partner enjoying passionate sexual intercourse with another person. Results yielded a large and significant sex difference such that more males reported greater distress to sexual infidelity and more females reported greater distress to a partner's emotional infidelity. Moreover, this pattern was replicated when asking participants to choose between scenarios contrasting sex and love (Buss et al.). In a different study within this same paper, the researchers measured participants' physiological responses when imagining sexual and emotional infidelity. The findings revealed that males experienced greater autonomic arousal (based on electrodermal activity) in response to sexual imagery relative to emotional imagery, whereas woman showed the opposite pattern (Buss et al.).

Since the emergence of these studies, which were some of the first to demonstrate sex differences in jealousy, research has continued to provide evidence that males and females react



differently to sexual and emotional infidelity (e.g., Buss et al., 1999; Edlund & Sagarin, 2009; Zengel, Edlund, & Sagarin, 2013). Importantly, these findings have been challenged in the past. Two main criticisms of this jealousy research were that they often rely on hypothetical scenarios and employ forced choice measures (Harris, 2002, 2003). Indeed, several studies that have used continuous measures to assess jealousy have failed to replicate the sex difference (e.g., DeSteno, Bartlett, Braverman, & Salovey, 2002; Green & Sabini, 2006). In this research, females and males both report greater jealousy to sexual than to emotional infidelity. However, other studies have since responded to these criticisms by assessing reactions to actual infidelity using continuous measures. Edlund, Heider, Scherer, Farc, and Sagarin (2006) asked participants who had been victims of infidelity to indicate how jealous they were by the emotional and sexual aspects of the infidelity. Using continuous and traditional forced choice measures, men and women showed the previously observed sex differences in jealousy (Edlund et al., 2006). Given that the available research has produced conflicting results, Sagarin et al. (2012) recently conducted two random-effects meta-analyses that measured sex differences in jealousy using continuous measures and found a significant sex difference for reactions to both hypothetical and actual infidelities.

### **Multidimensional Jealousy and Individual Differences**

As described earlier, jealousy is often conceptualized as a complex emotion in that individuals who experience it will typically react with various negative feelings. However, some researchers have advocated moving beyond viewing jealousy as consisting of only emotions and instead regarding it as a multidimensional construct. White (1981, a, b, 1984), for example, conducted conceptual analyses from which he concluded that jealousy consists of three separate components: thoughts, feelings, and coping behaviors. Pheiffer and Wong (1989) similarly agree

that jealousy is comprised of these three components, but rather than viewing them as occurring sequentially as White does, they argue that cognitions, emotions, and behaviors can occur simultaneously and interact with one another. A slightly different view of jealousy as multidimensional has been employed by Buunk (1997); in his conceptualization there exists reactive, preventative, and anxious jealousy (which map onto emotions, behaviors, and cognitions, respectively). In general, though, research has supported the operationalization of jealousy as separate elements. Indeed, many studies that include jealousy as a variable of interest employ a multidimensional scale (e.g., Brewer & Riley, 2009; Elphinston & Noller, 2011; Scheinkman & Werneck, 2010; Stieger, Preyss, & Voracek, 2012).

Another important consideration for jealousy research is to take into account individual differences related to the jealousy construct. Given that jealousy is aroused when one perceives that a rival is threatening his or her relationship, those who place low value on themselves may experience jealousy more often than those who view themselves as having higher worth. Indeed, past research has demonstrated a direct link between self-esteem and jealousy such that those with lower levels of self-esteem tend to have higher levels of jealousy (Mullen & Martin, 1994; Rydell & Bringle, 2007). Moreover, DeSteno, Valdesolo, and Bartlett (2006) found that self-esteem mediates the relation between jealousy and negative emotions. Similar to self-esteem, rejection sensitivity has important implications for the experience of jealousy and satisfaction of intimate relationships. Downey and Feldman (1996) revealed that those high in rejection sensitivity perceive intentional rejection in their partners' ambiguous behaviors and respond to the perceived rejection with hostility and jealousy. Ultimately, the sensitivity to rejection and ensuing behaviors undermined romantic relationships. Not surprisingly, self-esteem and rejection sensitivity are closely related such that those with higher self-esteem tend to be lower in their

sensitivity to rejection (Downey & Feldman, 1996; Watson & Nesdale, 2012). The findings that demonstrate how either of these constructs relates to jealousy fit well with the sociometer account of self-esteem (Leary, Tambor, Terdal, & Downs, 1995). This theory generally states that self-esteem acts as a gauge for how much an individual perceives being accepted or rejected by others. If experiencing jealousy, one's perceived relational value would most likely decrease, which would then lead to negative emotions.

### **An Overview of Self-Control**

Many theories have been proposed for conceptualizing self-control. One critical problem with understanding the construct of self-control is its varied usage within the literature. In fact, self-regulation and self-control are often used interchangeably (Baumeister, Schmeichel, & Vohs, 2007; Muraven & Baumeister, 2000), which can contribute to confusion with defining either. Generally, self-regulation refers to the processes by which people alter their behavior in order to attain goals (Baumeister et al., 2007; Finkel & Fitzsimons, 2011). Self-control can be thought of more specifically as that part of self-regulation that involves inhibition of urges, desires, and temptations (Fujita, 2011; vanDellen, Hoyle, & Miller, 2012). Another similar but more descriptive approach for conceptualizing self-control refers to it as the ability to resolve conflict between two competing motives or goals; most often, these goals are distal and proximate in nature (Magen & Gross, 2010). As an example, imagine an individual who is currently trying to lose weight but attending a party where he or she is faced with the temptation of eating unhealthy food. In this case the dual conflict is reflected in the desire to lose weight (the distal goal) and the desire to eat the tasty "junk" food (the proximate goal). Considering the competing motives at work, self-control would become engaged; successful self-control would be characterized by acting in line with the more distal goal (i.e., inhibiting the urge to eat the

unhealthy food).

One of the most popular frameworks currently used to understand the strength of self-control is Baumeister and Heatherton's (1996) limited resource model. According to the model self-control is managed by a limited resource that is required by all forms of self-regulation. Any time people exert self-control they draw upon or expend this resource. As a result self-control weakens or becomes depleted with continued exertion. This has otherwise been referred to as ego depletion (Baumeister, Bratslavsky, Muraven, & Tice, 1998). When depleted our self-control can become severely impaired; an individual will need to take time to rest and regain this self-regulatory strength in order to exercise successful self-control. A plethora of studies have supported the limited resource model, or strength model, of self-control (e.g., Muraven & Baumeister, 2000; see also Mead, Alquist, & Baumeister, 2010; Muraven, Tice, & Baumeister, 1998). These studies employ a dual-task paradigm to show that when one exerts self-control on an initial task, that individual will have fewer resources available for a subsequent, different task requiring self-control. In other words, those with more resources available will perform better on self-control tasks than those with fewer resources. According to the limited resource model, in the example used above, a person who has exerted self-control prior to attending the party will have fewer resources available and is therefore more likely to eat the junk food compared to a person who has more self-control resources available. In addition to numerous individual studies that have replicated this effect, the results of a meta-analysis by Hagger, Wood, Stiff, and Chatzisarantis (2010) provided strong support for the strength model.

Overall, there is a great deal of support for this model of self-control as a cognitive muscle that becomes weaker with continued exertion. Important to note is that in their conceptualization, Baumeister and Heatherton (1996) reference self-regulation generally and

although self-control fits into their model, so do the broader scope of self-regulatory processes. More specifically, if one engages in an initial task requiring any form of self-regulation, performance on a subsequent task requiring any form of self-regulation will be impaired (self-control included). Although the limited resource model is currently one of the most common models for explaining weakened self-control, it describes the depletion of resources in a primarily metaphorical manner and therefore does not provide a detailed account of how such resources become expended. This has recently spurred a rise in research designed to identify specific mechanisms by which impaired self-control performance is observed in the dual-task paradigm.

Inzlicht and Schmeichel (2012) proposed a process model of ego depletion that attempts to explain more precisely why self-control becomes impaired after completing an initial self-control task. That is, rather than explaining ego depletion as a vague expenditure of self-control resources, the authors point more specifically to cognitive, affective, and motivational changes that may account for undermined self-control performance. Their process model includes a shift in both motivational orientation and attentional focus. According to the model exerting self-control will afterwards make people feel less motivated to inhibit temptation (i.e., people convince themselves that they have worked hard enough and justify slacking off) and more motivated to engage in activities that provide immediate reward (i.e., people experience increases in approach motivated impulse strength). Additionally, the process model explains depletion by both reduced attention to situations that require self-control (because exerting self-control dulls the monitoring system) and a heightened attention to cues signaling reward (Inzlicht & Schmeichel).

Past research strongly supports components of the process model. For example, Muraven and Slessareva (2003) showed that participants did not exhibit depletion from an initial self-control task when offered an incentive (motivation appeared to moderate the effect). Similarly, compared to participants who were depleted and given no source of motivation, depleted participants told that completion of a task could benefit them or others performed significantly better on a subsequent self-control task (Muraven & Slessareva). Studies have also shown that promoting an individual's autonomy on an initial self-control task led to improved subsequent self-control relative to those who were pressured to exert self-control on the first task (Muraven, 2008; Muraven, Gagné, & Rosman, 2008). In general, motivation appears to play an important role in ego depletion. Additionally, in reference to attention Schmeichel, Harmon-Jones, and Harmon-Jones (2010; Study 3) found that compared to participants who had not previously exercised self-control, those who had exerted self-control were more accurate in perceiving and detecting dollar signs but not percent signs in a task that required quick identification of symbols; in other words, depletion appeared to heighten attention to rewards.

One of the strongest contributions of the process model is that it explains findings from studies that cannot be accounted for by the resource model. One series of studies conducted by Job, Dweck, and Walton (2010) revealed that subjective impressions of whether willpower is limited versus unlimited moderated the ego depletion effect. Namely, when participants believed that willpower was unlimited, they did not show as large of decrements in their self-control on the dual-task paradigm. This research suggests that self-control is not comprised of a limited resource and may instead reflect differences in motivation. Although there is evidence in support of the process model, the authors acknowledge that future research needs to measure process

variables and use an individual differences approach to mediation in order for this support to be strengthened (Inzlicht & Schmeichel, 2012).

Another important feature of self-control is that, similar to self-esteem, this construct can be referenced at both trait and state levels. An individual's trait or dispositional self-control is his or her baseline self-control as typically measured by a self-report self-control scale (Gottfredson & Hirschi, 1990; Tangney, Baumeister, & Boone, 2004). Trait self-control, like most personality traits, is considered relatively stable and measures the degree to which individuals can exert control over their impulses across time and situations (de Ridder, Lensvelt-Mulders, Finkenauer, Stok, & Baumeister, 2012; Gottfredson & Hirschi, 1990). When referencing one's state-level self-control, this is typically measured through manipulations of self-control resources (e.g., tests of the limited resource model described above; Muraven & Baumeister, 2000). That is, after completing an initial self-regulation task, one's state self-control (or current ability to exert control over impulses) can be assessed on a subsequent self-control task. Importantly, the extent to which individuals exert self-control in a certain situation depends on their trait and state self-control (Imhoff, Schmidt, & Gerstenberg, 2013; Rawn & Vohs, 2006).

### **Self-Control Applied**

Research has shown that self-control affects both intrapersonal and interpersonal processes. In either domain we see wide-ranging consequences of having both high and low self-control. In regard to intrapersonal effects, self-control failure has been linked to overeating, gambling, and alcohol and drug abuse (Baumeister, Heatheron, & Tice, 1994), whereas higher self-control is associated with several positive outcomes such as higher grades, better adjustment, and less binge eating (Tangney et al., 2004). Additionally, when examining the realm of relationships, research has shown generally that across a variety of social contexts, higher self-

control will result in improved interpersonal functioning and lower self-control will lead to problematic relationship behaviors. For instance, Finkel and Campbell (2001) concluded that both low trait self-control and experimentally depleting state self-control led to a lesser likelihood that one would accommodate in response to his or her partner's bad behavior. As for more destructive behaviors, research has revealed that intimate partner violence is predicted by self-control failure (Finkel, DeWall, Slotter, Oaten, & Foshee, 2009). Furthermore, research suggests that for those involved in romantic relationships, having more self-control resources available will lead to an improved ability to inhibit attraction toward alternative others (Ritter, Karremans, & van Schie, 2010; Vohs, 2003). Taken as a whole, it appears that the extent to which one has successful social interactions depends partially on whether that individual has sufficient self-control resources available.

The alternative way to study the relation between self-control and social processes is to reverse the directional influence and explore how interpersonal processes affect self-control (see Fitzsimons & Finkel, 2010). Interestingly, the findings from this area of research demonstrate that certain types of social influences will deplete self-control whereas other forms may improve self-control. Nelson and Blackhart (2013) conducted a review of this literature in order to understand more thoroughly how and when social processes affect self-control resources. One general conclusion of this review was that interactions that are especially effortful or inefficient in nature will typically lead to self-control failure. That is, after a person has engaged in such a social process, he or she will have reduced self-control resources and performance on any task requiring self-control will be hindered. In the standard dual-task paradigm as demonstrated by the limited resource model, participants complete a self-regulation task (which typically depletes resources) and then performance on a subsequent, unrelated self-regulation task is measured. The



main idea here is that some social influences appear to be tapping self-regulatory resources similar to if one were completing a depleting task.

One line of research closely related to jealousy has investigated how social exclusion affects self-control resources. Humans have an innate need to belong that includes forming stable relationships with others (Baumeister & Leary, 1995). When this need is threatened, it can lead to a variety of adverse consequences on a person's health and well-being (e.g., Blackhart, Baumeister, & Twenge, 2006). Baumeister, DeWall, Ciarocco, and Twenge (2005) conducted a series of studies to specifically examine how being rejected would impact various self-control behaviors. The researchers discovered that informing participants of bogus feedback that they would probably end up alone in life resulted in those individuals drinking less of an unpleasant but healthy drink compared to both those who were told they would most likely spend their life surrounded by caring people and those told they were likely to live an injury-prone life (the latter condition was used to control for general anticipation of an unpleasant future). In a similar study Baumeister et al. found that this same manipulation led the lonely future participants to persist for less time on unsolvable anagrams relative to the other two comparison groups and also another group that received no feedback. Results showed that arousal, mood, belief in feedback, and state self-esteem did not mediate the effect. Furthermore, a different study revealed that participants told that no one wanted to work with them on a group task ate twice as many cookies as participants who were told that everyone wanted to work with them. Although mood was significantly different between the two groups, it did not mediate the effect between rejection and eating (Baumeister et al.)

Generally, it is clear that self-control has a variety of implications for individuals in their everyday lives. Not only is self-control critical for achieving effective functioning for the self,

but it also plays a key role in how we maintain relationships with others. Being aware of how different processes impact our ability to exert self-control is extremely important for understanding our behaviors in a variety of contexts. In essence this area of research helps shed light on why individuals may act in ways that do and do not correspond with their long-term goals.

### **Jealousy and Self-Control**

As mentioned above, jealousy is generally experienced as a negative emotional reaction. Past research has shown that it is associated with attachment anxiety (e.g., Guerrero, 1998), neuroticism (Buunk, 1997; Mathes, Roter, & Joerger, 1982; Melamed, 1991), and rumination (e.g., Carson & Cupach, 2000). Additionally, Shackelford, LeBlanc, and Drass (2000) used a principal-components analysis on participants' nominated emotional reactions to partners' hypothetical infidelity and found that Undesirable/Insecure and Hostile/Vengeful emerged as the top two components accounting for the largest percentage of inter-item variance. Together these findings suggest that jealousy is an effortful process and is likely taxing on one's cognitive resources. That is, because these thoughts and emotions associated with jealousy are undesired, it would require self-regulation in order to change or alter them. Moreover, studies that have revealed the aggressive behaviors that often stem from jealousy suggest that individuals may experience impulsivity and/or lowered inhibition when in this emotional state.

As additional support, Maner, Miller, Rouby, and Gailliot (2009) designed several studies in order to examine how concerns about infidelity may elicit specific cognitive processes. The results of their research showed that when participants high in chronic jealousy were primed with thoughts of infidelity, they afterward preferentially encoded and remembered attractive same-sex targets. Moreover, infidelity priming led these same participants to form implicit negative

evaluations of attractive same-sex targets. Such findings strongly suggest that when individuals (particularly those who tend to be chronically jealous) are concerned with infidelity, they experience intrasexual vigilance (Maner et al.). In relation to the present research, it is possible that this increased vigilance may have an impact on individuals' self-regulation. Specifically, being attuned to attractive members of the same sex may require self-regulatory resources that could afterward negatively affect self-control ability based on the limited resource model. Indeed, past research has shown that vigilance and similar tasks that involve controlling one's focus of attention will deplete self-control capacity (Muraven & Baumeister, 2000). If jealousy does in fact require self-regulation, there are serious implications for not only intrapersonal functioning, but also for interpersonal functioning. However, no research has examined the relation between jealousy and self-control.

### **The Present Research**

Jealousy is considered a unique form of rejection in that it occurs when one perceives that a rival is threatening his or her romantic relationship and that one's interpersonal loss is another's gain (Parrott, 2001; Salovey & Rothman, 1991). Additionally, similar to rejection, the experience of jealousy often leads to an array of negative emotions (Guerrero & Anderson, 1998; Sharpsteen & Kirkpatrick, 1997). Based on past research supporting the view of jealousy as a paradoxical emotion, it seems that these negative emotions may at times work to enhance relationship quality, whereas in other cases it can become detrimental and ultimately damage a relationship. Examining how jealousy affects self-control could lead to a stronger understanding of how jealousy impacts individuals' functioning and leads to various outcomes. Studies based on the limited resource model that use the dual-task paradigm have shown that because an initial task or process is demanding and frustrating, it can elicit negative affect and impair performance

on a subsequent self-control task (Tice, Bratslavsky, & Baumeister, 2001). Because jealousy is associated with negative emotions, it should prompt individuals to regulate or attempt to repair this aversive feeling. Thus, the experience of jealousy and coupled self-control exertion should lead to diminished self-control ability.

Furthermore, although research based on the limited resource model supports the prediction that jealousy will deplete self-control, we can also look to the process model (Inzlicht & Schmeichel, 2012) for additional support of this claim. As mentioned previously, the process model has recently been proposed for providing a more specific account of the mechanisms underlying self-control depletion. Namely, this model suggests that shifts in motivation and attention can explain the observed impaired performance from an initial to a subsequent self-control task (Inzlicht & Schmeichel). Given that jealousy works similarly to rejection in that it thwarts one's need to belong, individuals may afterward feel less inclined to engage successful self-control. That is, when feeling accepted, individuals are more motivated to exert self-control considering the benefits that ensue from acting socially appropriate, resisting temptation, and following rules. However, when one is feeling excluded and these rewards are therefore not imminent, the desire to engage in this effortful process most likely wanes.

Considering that jealousy is a complex emotion often experienced in romantic relationships and the critical role that self-control plays in both our intrapersonal and interpersonal functioning, there is significant value in understanding how jealousy is related to our ability to exert self-control. Most relevant to the literature on behavioral outcomes is that if jealousy does in fact lead to decreased self-control, it may help explain why jealous individuals often become aggressive and violent toward their partners. As mentioned above, jealousy has been found to be a strong predictor of partner aggression for both men and women (O'Leary et

al., 2007). Future research would test whether self-control mediates the link between jealousy and aggression; this set of studies is a first step in that process.

In order to examine the relation between jealousy and self-control, I conducted two separate studies. In Study 1, I administered an online survey assessing individuals' trait self-control, chronic jealousy (i.e., cognitive, behavioral, emotional), and other related measures. Based on research showing correlations between jealousy and thoughts, emotions, and behaviors indicative of low self-control (i.e., aggression, hostility, anxiety), I predicted that jealousy would be negatively associated with self-control. That is, I expected that participants who have low levels of trait self-control would have high levels of jealousy for all three components. Additionally, I hypothesized that jealousy would predict a significant amount of the variance in self-control, after controlling for both self-esteem and rejection sensitivity.

In Study 2, I experimentally examined the effects of jealousy on state self-control in a laboratory setting. Specifically, I was interested in how state self-control would be impacted following an imagined infidelity. For this study participants came to the lab and were randomly assigned to one of three conditions: sexual infidelity, emotional infidelity, or a control condition. After the manipulation, all participants completed a behavioral self-control task. I predicted that those in either of the infidelity conditions would subsequently show lowered self-control relative to the control condition. That is, I predicted that there would be a significant F test based on the postestimation joint test of condition following the regression, such that the mean level of state self-control for each infidelity condition would be lower than the mean level of state self-control for the control condition. In addition to assessing this general difference between the infidelity conditions and the control condition, I also examined sex differences in self-control based on the type of infidelity imagined. Research based on differences in evolved mating challenges has

demonstrated that females report more distress in response to emotional infidelity and males report more distress to sexual infidelity (Sagarin et al., 2012). Self-control predicts significant variance in psychological distress (Bowlin & Baer, 2012) and experiencing negative emotions can diminish self-control ability (e.g., Baumeister et al., 2005). As a whole, this research suggests not only that jealousy may impact one's ability to choose between distal and proximate goals, but also that males and females may show differences in their self-control depending on which type of infidelity they encounter. For Study 2, I predicted that females would experience greater decrements in self-control after imagining emotional infidelity (than sexual infidelity and the control) and males would experience greater decrements in self-control after imagining sexual infidelity (than emotional infidelity and the control). In reference to the statistical test, I predicted that there would be a significant F test based on the postestimation joint test of the sex by condition interaction; such that the mean state self-control for females in the emotional infidelity condition would be lower than the mean state self-control for females in the sexual infidelity condition, and that the mean state self-control for males in the sexual infidelity condition would be lower than the mean state self-control for males in the emotional infidelity condition.

## CHAPTER 2

### STUDY 1

The main purpose of Study 1 was to examine whether jealousy and self-control are in fact related. To my knowledge, no prior research has examined this association. In order to achieve this objective, I examined the correlations between the variables using an online survey. Furthermore, in order to understand how jealousy predicts self-control, these variables were included in a regression model along with constructs closely related to jealousy (i.e., self-esteem, rejection sensitivity).

#### **Method**

##### **Participants and Procedure**

Participants were recruited through both an online advertisement and a psychology subject pool at a southeastern university. Students who participated through the subject pool received course credit in exchange for their participation. The only restriction was that participants were at least 18 years of age. Institutional Review Board (IRB) approval for this study was obtained from East Tennessee State University on June 16, 2013.

A statistical power analysis indicated that a sample of at least 116 would be required to detect a medium effect size for a hierarchical regression with five predictor variables ( $f^2 = .15$ ,  $\alpha = .05$ ,  $\beta = .10$ ). The final sample consisted of 128 participants (81 females and 47 males; mean age = 29.14 years,  $SD = 10.03$ ). The majority of participants were Caucasian (85.2%) and identified as heterosexual (90.6%). Twenty-nine participants began but did not complete the survey (19 females and 10 males; mean age = 31.00 years,  $SD = 12.54$ ).

An online survey was created using Qualtrics survey software. All participants read a short description of the study before participating, including that the purpose of the study was to

investigate the links between various personality factors and relationship qualities. Additionally, they were informed that they needed to be at least 18 years of age in order to participate, that their participation was voluntary, and that their responses were anonymous. After reading this information, participants proceeded with the survey and provided responses to the various measures (see Appendix A). After the survey was complete, participants were thanked for their participation.

## **Measures**

**Self-Control.** Trait self-control was assessed using the Self-Control Scale-Brief Version (Tangney et al., 2004). The scale includes 13 items and uses a 5-point Likert scale that ranges from *not at all like me* to *very much like me*. This measure assesses people's general ability to override or change inner responses and to interrupt/refrain from undesired behavioral tendencies. The responses to each item are summed (using reverse coding where appropriate) for a total self-control score. Higher scores are indicative of greater self-control. In two studies Tangney et al. (2004) found Cronbach's alphas of .83 and .85 for this scale. Additionally, Tangney et al. demonstrated concurrent validity of the scale through its negative association with impulse control problems such as alcohol abuse ( $r = -.32$ ) and binge eating ( $r = -.32$ ) and positive association with academic performance ( $r = -.32$ ). In the current study the scale showed high reliability ( $\alpha = .84$ ).

**Jealousy.** To measure the participants' jealousy, I used Pfeiffer and Wong's (1989) Multidimensional Jealousy Scale (MJS). As mentioned earlier, most researchers agree that jealousy is a complex emotion that is comprised of several components. Additionally, studies using unidimensional measures of jealousy have often produced inconsistent findings (e.g., Mathes et al., 1982; Mathes & Severa, 1981). Based on these observations, there is strong



rationale for the adoption of measures that assess different types of jealousy (Buunk, 1997). The MJS, specifically, includes subscales for cognitive, emotional, and behavioral jealousy. It has been validated using several populations and is used frequently in jealousy research (Elphinston & Noller, 2011; Maner et al., 2009; Pfeiffer & Wong, Steiger et al., 2012). The directions instruct participants to think of a person with whom they “are having or have had a strong romantic/love relationship” (Pfeiffer & Wong). Each subscale consists of eight items and uses a 7-point Likert scale.

For the cognitive subscale participants are asked how often they have different suspicions concerning their partner and a rival (*all the time to never*); this specific subscale uses a reversed rating scale to control for the response-acquiescence bias. The emotional subscale asks participants how they would emotionally react to a variety of situations involving their partner and a rival (*very pleased to very upset*). Finally, the behavioral subscale asks how often participants engage in different detective and protective types of behaviors regarding their relationship (*never to all the time*). Responses to items are summed for separate subscale totals. Higher scores are indicative of greater jealousy. The scale has been validated and is often used in jealousy research (Elphinston & Noller, 2011; Maner et al., 2009; Pfeiffer & Wong, 1989, Steiger et al., 2012). Pfeiffer and Wong (1989, Study 1) found that the cognitive, emotional, and behavioral scales had Cronbach’s alphas of 0.92, 0.85, and 0.89 respectively. Furthermore, all three subscales were significantly correlated with White’s Relationship Jealousy Scale (White, 1981c), providing evidence of concurrent validity, yet were differentially related to love, liking, and happiness, demonstrating discriminant validity (Pfeiffer & Wong). In the current study the cognitive, emotional, and behavioral subscales reached alphas of 0.93, 0.79, and 0.88,

respectively. Additionally, a total jealousy measure was calculated by averaging responses to all items ( $\alpha = 0.91$ ).

**Self-Esteem.** Global self-esteem was assessed using the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965). The scale measures one's global self-worth by addressing both positive and negative feelings about the self. The scale consists of 10 items and uses a 4-point Likert scale that ranges from *strongly agree* to *strongly disagree*. Scores are summed (using reverse coding where appropriate) such that higher scores reflect higher self-esteem. Robins, Hendin, and Trzesniewski (2001) found Cronbach's alphas ranging from 0.88 to 0.90 across six assessments for the RSES and also demonstrated concurrent validity of the scale based on significant correlations with domain specific self-evaluations. The current study found high reliability for this scale ( $\alpha = 0.89$ ).

**Rejection Sensitivity.** I used the Rejection Sensitivity Adult Questionnaire (A-RSQ) (Berenson et al., 2009) to assess participants' sensitivity to rejection. Participants were asked to imagine nine hypothetical scenarios and for each scenario to indicate both their level of rejection concern (*very unconcerned* to *very concerned*) and level of acceptance expectancy (*very unlikely* to *very likely*) using a 6-point Likert scale. Scores are calculated by multiplying the level of rejection concern by the reverse of the level of acceptance expectancy. The mean of the resulting nine scores was used to obtain an overall rejection sensitivity score. Higher scores reflect higher sensitivity to rejection. Berenson et al. (2009) found a Cronbach's alpha of .70 for the A-RSQ and demonstrated both strong concurrent and discriminant validity. The scale correlated in expected directions with neuroticism ( $r = .32$ ), self-esteem ( $r = -.46$ ), and social avoidance/distress ( $r = .34$ ) (Berenson et al., 2009). The current study found a Cronbach's alpha of 0.78 for this scale.

## Results and Discussion

Descriptive statistics for each of the variables of interest are listed in Table 1. Bivariate correlations were used to examine the associations between trait self-control and the separate subscales of jealousy. Results showed that self-control was negatively correlated with cognitive jealousy ( $r = -.34, n = 116, p < .001$ ) and behavioral jealousy ( $r = -.36, n = 116, p < .001$ ). Interestingly, self-control was not associated with emotional jealousy ( $r = -.03, n = 116, p = .71$ ). When combining the separate subscales into a total jealousy scale, there was a significant, negative correlation between self-control and total jealousy ( $r = -.35, n = 124, p < .001$ ). Correlations between the other variables assessed are also reported in Table 1.

Table 1

*Summary of Means, Standard Deviations, and Correlations for Measures in Study 1*

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Self-Control Brief Version	42.28	7.94	--					
2. MJS – Cognitive	2.34	1.35	-0.34**	--				
3. MJS – Behavioral	2.07	1.07	-0.36**	0.54**	--			
4. MJS – Emotional	5.12	0.76	-0.03	0.22*	0.32**	--		
5. MJS – Total	3.18	0.82	-0.35**	0.84**	0.83**	0.57**	--	
6. RSES	31.79	5.10	0.42**	-0.36**	-0.40**	0.18	-0.42**	--
7. ARSQ	8.58	4.11	-0.27**	0.27**	0.28**	0.15	0.31**	-0.58**

*Note.*  $N = 116$ . MJS = Multidimensional Jealousy Scale; *M* = Mean; *SD* = Standard Deviation. \* $p < .05$ , \*\* $p < .01$

To determine whether jealousy predicted self-control above the effects of self-esteem and rejection sensitivity, these variables were entered into a hierarchical multiple regression (see Table 2). Self-esteem and rejection sensitivity were entered in Step 1, explaining 18.0% of the variance in trait self-control. After entry of the three components of jealousy at Step 2 the total variance explained by the model was 25.1%,  $F(5, 110) = 7.36, p < .001$ . The three subscales of jealousy explained an additional 7.0% of the variance in self-control, after controlling for self-esteem and rejection sensitivity,  $R$  squared change = .07,  $F$  change (3, 110) = 3.47,  $p = .019$ . In the final model, only self-esteem was statistically significant ( $b = .48, p < .01$ ).

Table 2

*Results of Hierarchical Multiple Regression for Independent Variables Predicting Trait Self-Control*

Variable	<i>b</i>	SE <i>b</i>	$\beta$	<i>F</i>	$\Delta R^2$	$R^2_{adj}$
Step 1				12.39**	.18	.17
Self-Esteem	0.65	0.17	0.40			
Rejection Sensitivity	-0.07	0.21	-0.03			
Step 2				7.36*	.07	.22
Cognitive Jealousy	-0.96	0.63	-0.15			
Behavioral Jealousy	-1.49	0.81	-0.19			
Emotional Jealousy	1.29	0.94	0.12			

*Note.* Total  $R^2 = .25.1$  ( $N = 116$ )

\* $p < .05$ , \*\* $p < .001$

These results are the first to demonstrate an association between chronic jealousy and dispositional self-control. Based on the findings individuals who have higher levels of chronic jealousy tend to have lower levels of trait self-control. When examining the bivariate correlations, cognitive jealousy and behavioral jealousy showed the expected relation with self-control, but emotional jealousy was not significantly associated. It is possible that the emotional reactions associated with jealousy do not relate to self-control in the same manner that cognitions and behaviors do. This possibility is elaborated on further in the general discussion. Additionally, based on the results of the regression, jealousy accounted for a significant amount of the variance in self-control, after controlling for similar constructs. This demonstrates that jealousy as a whole explains unique variance in self-control.

## CHAPTER 3

### STUDY 2

Study 1 demonstrated that chronic jealousy and trait self-control are negatively associated and that a significant amount of the variance in self-control can be explained by jealousy. In Study 2, I sought to extend these findings and experimentally examine how the experience of jealousy may impact individuals' state level of self-control. Based on the results from Study 1, I predicted that those who imagined a partner's infidelity would afterward show less self-control compared to those who did not. In addition, this study integrated past research demonstrating sex differences in distress based on type of infidelity encountered. I examined whether men and women would show differences in their self-control strength depending on whether they imagined sexual or emotional infidelity. Based on evolutionary theories and past research showing that men respond more strongly to sexual infidelity and women respond more strongly to emotional infidelity, I expected that men would show greater decrements in self-control when imagining sexual infidelity (relative to emotional) and women would show the opposite pattern. Both infidelity conditions were expected to be somewhat depleting for all participants (just more or less depending on the type of infidelity and sex of participant); thus, a neutral control condition was included to allow for general comparisons.

The remaining analyses were exploratory. Imhoff et al. (2013) demonstrated that ego depletion is dependent on one's level of trait self-control (Imhoff et al., 2013). Additionally, recent research has highlighted the role of chronic jealousy in reactions to infidelity (Maner et al., 2009; Miller & Maner, 2009). Based on these findings, I chose to test both trait self-control and chronic jealousy as possible moderators of the relation between jealousy and behavioral self-control. That is, I examined whether the effect of condition on state self-control depended on

level of state self-control or chronic jealousy. Additionally, I tested two 3-way interactions: I tested how sex, condition, and trait self-control interacted to affect state self-control and also how sex, condition, and chronic jealousy interacted to affect state self-control.

## **Method**

### **Participants**

Participants were recruited through a psychology subject pool at a southeastern university and received course credit in exchange for their participation. The only restrictions were that participants were at least 18 years of age and heterosexual. Because the hypothesis predicting sex differences in self-control is based on evolutionary theories in mating challenges, such findings would only apply to heterosexual individuals; therefore, nonheterosexual participants were not included as part of the study. Institutional Review Board (IRB) approval for this study was obtained from East Tennessee State University on October 3, 2013.

A statistical power analysis indicated that a sample of at least 90 would be required to detect a medium effect size for the main effects and interaction ( $f = .30$ ,  $\alpha = .05$ ,  $\beta = .20$ ). The final sample consisted of 141 participants (88 females and 53 males; mean age = 22.16 years,  $SD = 6.85$ ). Six participants were excluded from the analyses because they identified as either homosexual or bisexual. The majority of the participants were Caucasian (73%).

### **Design and Procedure**

The study consisted of a 3 (type of scenario: emotional infidelity vs. sexual infidelity vs. control) x 2 (sex: male vs. female) between-subjects factorial design, with participants being randomly assigned to one of the three hypothetical scenarios (see below).

When participants arrived at the lab, they were first asked to provide informed consent. Next, participants completed demographic questions and a subset of measures from Study 1

including the Self-Control – Brief Version ( $\alpha = 0.83$ ) and the MJS, which included the subscales for emotional ( $\alpha = 0.84$ ), behavioral ( $\alpha = 0.92$ ), and cognitive ( $\alpha = .92$ ) jealousy; additionally, a composite total jealousy score was calculated ( $\alpha = 0.91$ ). After completing these measures, participants were told they would begin the first part of the study. As part of the cover story, we explained to participants in both infidelity conditions that the purpose of the study was to examine individuals' responses to different types of events that could occur in romantic relationships. Participants in the control condition were told that the purpose of the study was to examine students' responses to different types of events that could occur at the university. Participants were presented with one of three hypothetical scenarios (described below) and then asked to write a letter regarding the situation. Specifically, we gave them 5 minutes to write their letter and asked that they please use the entire time. Once the 5 minutes had elapsed, participants completed a brief mood measure (see below).

Next, participants were told that they would complete a separate choice task. In reality this was the self-control task. The study used a modified version of a task used in previous research (i.e., Baumeister et al., 2005; Muraven 1998). Prior to the participants arriving, the experimenter prepared two beverages. One beverage was labeled "H" and contained flavored drink mix, 8 ounces of water, and 4 ounces of vinegar, whereas the other beverage labeled "N" contained only flavored drink mix and 12 ounces of water. The experimenter placed the two cups in front of the participant and explained each beverage. The experimenter first pointed to the drink labeled "H" and told the participant, "This is a drink that does not taste good to most people. However, it is not harmful. In fact, it is good for you. It has been shown to benefit the digestive system, improving the absorption and utilization of several essential nutrients." Then the experimenter pointed to the drink labeled "N" and told the participant, "This is a drink that



provides no benefits to your health and has no nutritional value. However, it is a drink that tastes good to most people and is typically rated as very enjoyable.” Participants were asked to choose which beverage they would like to drink. After participants made their choice, the experimenter informed them that how much they wanted to drink of their beverage was completely up to them. The experimenter then removed the unchosen beverage and told the participant she would return to the room in 5 minutes.

After the 5 minutes had elapsed, the experimenter returned to the room and asked the participants to fill out a one-item, 10-point scale assessing the drink’s taste (*really good* to *really bad*). We then had participants complete a postexperimental inquiry and fully debriefed them on the true nature of the study. Participants were thanked for their participation and escorted out of the lab. After participants left the lab, the experimenter measured the ounces remaining of the chosen beverage to the closest quarter ounce and subtracted this amount from 12 to record the total ounces drank.

**Validation of Measure.** The healthy beverage (“H”) was meant to be distasteful, whereas the nonhealthy beverage (“N”) was meant to be enjoyable. After consuming it, participants were asked to rate the drink’s taste on a scale ranging from 1 (*tastes really good*) to 10 (*tastes really bad*). Participants who chose the healthy beverage ( $N = 100$ ) provided an average taste rating of 7.43 ( $SD = 2.13$ ), with 70% rating the drink a 7 or higher. Those who chose the nonhealthy beverage ( $N = 37$ ) gave an average taste rating of 4.27 ( $SD = 2.74$ ), with 58% rating the drink a 4 or lower. An independent samples *t*-test was conducted to compare the drink’s rating for those chose the healthy versus nonhealthy beverage. Inspection of the data revealed that there was heterogeneity of variance as assessed by the Levene’s Test for Equality of Variances ( $F = 5.77, p = .02$ ); therefore, degrees of freedom were adjusted from 135 to

53.045. Results showed a significant difference in ratings between healthy beverage drinkers and nonhealthy beverage drinkers,  $t(53.05) = 6.35, p < .001$ . The magnitude of the differences in the means (mean difference = 3.16, 95% *CI*: 2.16, 4.16) was large in effect size ( $d = 1.29$ ). Thus, the healthy beverage was regarded as significantly more unpleasant than the nonhealthy beverage or, contrastingly, the nonhealthy beverage was regarded as significantly more enjoyable than the healthy beverage.

### **Manipulations**

For those assigned to either of the infidelity scenarios, participants first read the following passage adapted from Buss et al. (1992): “Please think of a serious committed romantic relationship that you have had in the past, that you currently have, or that you would like to have. Imagine that you discover that the person you’ve been seriously involved with has become interested in someone else.” Participants in the emotional infidelity condition then read: “Specifically, you find out that your partner has formed a deeply emotional attachment to this other person. They have shared many personal secrets that they haven't shared with anyone else, have many things in common, truly care for each other, and may possibly be falling in love.” Participants in the sexual infidelity condition read the following: “Specifically, you find out that your partner has been engaging in sexual intercourse with this other person. You discover that they have slept together on numerous occasions and have experimented with many different sexual positions.” After reading one of the two infidelity scenarios, participants in these conditions were asked to write a letter to their partner describing how their partner's infidelity made them feel.

Those in the control condition read the following: "The Student Government Association at your university is interested in the variety of students' experiences. Please write a letter to this association explaining different types of experiences you have had so far at the university."

## **Measures**

**State Self-Control.** State self-control was assessed by which beverage the participant chose (either "H" or "N") and the number of ounces drunk of the chosen beverage. First, I added 1 to the amount drunk for all participants so that self-control would still be represented in those cases where no beverage was drunk. Next, in order to create one continuous self-control variable, I multiplied the amount drunk by 1 for participants who chose the healthy beverage and multiplied the amount drunk by -1 for those who chose the nonhealthy beverage. Higher numbers are indicative of higher state self-control.

This is a very fitting measure of self-control because participants were given a choice between something that was healthy but unpleasant and something that is nonhealthy but enjoyable. In everyday life individuals are faced with similar situations in which they must choose between tasks that are clearly beneficial to their health but may not be enjoyable (e.g., exercising, eating vegetables) and tasks that are pleasing but not necessarily conducive to health (e.g., watching television, eating junk food). In reference to the definition of self-control, the conflict between dual motives in this task is first represented in the choice between the two beverages. Subsequently, if choosing the healthy beverage, the conflict is represented between the desire to reap the benefits of drinking the beverage and to avoid the unpleasant taste; if choosing the nonhealthy beverage, the conflict is between the desire to enjoy the beverage and to refrain from drinking something that is not beneficial to health.

**Brief Mood Measure.** This mood measure assessed jealousy, sadness, anxiety, anger,

happiness, and acceptance. Each type of mood was assessed using a single item and used a seven-point Likert scale that ranged from *not at all* to *extremely* (see Appendix B).

## Results

Descriptives for the variables of interest and correlations between the measures are listed in Table 3. Trait self-control was negatively correlated with all three components of jealousy (cognitive, behavioral, and emotional), and also the composite measure of total jealousy. State self-control only showed a significant association with emotional jealousy such that participants with higher levels of emotional jealousy showed less state self-control.

Table 3

*Summary of Means, Standard Deviations, and Correlations for Measures in Study 2*

Measure	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Self-Control Brief Version	44.15	8.78					
2. MJS – Cognitive	2.80	1.53	-0.32**				
3. MJS – Behavioral	2.32	1.36	-0.29**	0.41**			
4. MJS – Emotional	5.21	1.01	-0.22**	0.18*	0.34**		
5. MJS – Total	3.44	0.97	-0.38**	0.78**	0.81**	0.60**	
6. State Self-Control	2.09	5.81	0.15	0.06	-0.10	-0.19*	-0.08

*Note.* *N* = 137. MJS = Multidimensional Jealousy Scale; *M* = Mean; *SD* = Standard Deviation. \**p* < .05, \*\**p* < .01

As a manipulation check, I calculated effect sizes for the differences between the conditions' mean jealousy scores in order to determine to what extent participants in either of the infidelity conditions reported feeling more jealous following the writing exercise than participants in the control condition. The difference between the emotional infidelity condition ( $M = 3.44, SD = 1.97$ ) and the control condition ( $M = 2.36, SD = 1.92$ ) was medium in effect size ( $d = 0.56$ ), and the difference between the sexual infidelity condition ( $M = 3.24, SD = 2.24$ ) and the control was medium in effect size ( $d = 0.42$ ). When comparing the difference between the jealousy scores for the emotional and sexual infidelity conditions, the effect size was small ( $d = 0.09$ ). Additionally, I calculated effect sizes for the differences between males' and female' mean jealousy scores for each condition. For emotional infidelity the difference between females' ( $M = 3.59, SD = 2.06$ ) and males' ( $M = 3.12, SD = 1.78$ ) jealousy was small in effect size ( $d = 0.24$ ). For the sexual infidelity condition the difference between the females' ( $M = 3.81, SD = 2.34$ ) and males' ( $M = 2.07, SD = 1.49$ ) jealousy was large in effect size ( $d = 0.89$ ). Finally, in the control condition the difference between the females' ( $M = 2.65, SD = 2.33$ ) and males' ( $M = 2.05, SD = 1.36$ ) jealousy was small to medium in effect size ( $d = 0.31$ ).

The mean scores for the additional moods are reported in Table 4 and corresponding effect sizes between conditions are reported in Table 5. For feelings of anger, acceptance, sadness, and happiness the difference between the emotional infidelity and control condition and difference between the sexual infidelity and control condition were all medium to large in effect size. The differences between the groups in feelings of anxiety were small to medium in effect size.

Table 4

*Means Scores on Mood Measure and Trait Self-control for Each Condition*

Mood	Experimental Condition		
	EI	SI	Control
Jealousy	3.44 (1.97)	3.24 (3.24)	2.36 (1.92)
Anger	3.54 (2.00)	3.46 (2.34)	2.58 (1.93)
Accepted	3.68 (1.90)	3.48 (1.79)	4.73 (1.96)
Sadness	3.92 (1.91)	3.70 (2.15)	2.82 (2.03)
Happiness	3.78 (2.02)	3.89 (2.06)	5.18 (1.97)
Anxiety	4.00 (2.04)	3.48 (1.87)	3.40 (1.75)
Trait Self-Control	44.71 (8.67)	43.50 (9.45)	43.76 (8.32)

*Note.* Standard deviations appear in parentheses next to means.  
EI = Emotional Infidelity, SI = Sexual Infidelity

Table 5

*Effect Sizes (Cohen's d) for Differences in Means on Mood Measure Scores*

Mood	Experimental Conditions		
	EI - C	SI - C	EI - SI
Jealousy	0.56	0.42	0.09
Anger	0.49	0.41	0.04
Accepted	0.54	0.67	0.11
Sadness	0.56	0.42	0.11
Happiness	0.70	0.64	0.05
Anxiety	0.32	0.04	0.27
Trait Self-Control	0.11	0.03	0.13

*Note.* EI = Emotional Infidelity; SI = Sexual Infidelity, C = Condition

Next, I compared the differences in state self-control among the groups (Table 6 displays the mean scores by each group). In order to compare the differences in state self-control, I conducted a standard multiple linear regression in which I created effect coded indicators for the two independent variables (condition and sex). Based on the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, the data violated the assumption of equal variance ( $\chi^2(1) = 8.19, p = .004$ ); therefore, I applied robust standard errors in order to increase the robustness with respect to this heterogeneity. Otherwise referred to as Huber/White estimators or sandwich estimators of variance, these robust variances give accurate assessments of the sample-to-sample variability of the parameter estimates when the model is misspecified (Huber, 1967; White, 1980). The

estimators are derived from an estimate of the variance-covariance matrix of the regression coefficients that does not assume homoscedasticity of the errors (Hayes & Cai, 2007).

In the regression I tested for a main effect of condition on self-control and also for a main effect of sex on self-control. Additionally, I tested for an interaction between condition and sex on self-control (see Table 7). Condition, sex, and the interaction were entered into the model simultaneously, explaining 5% of the variance in self-control,  $F(5, 132) = 1.01, p = .42, R^2_{adj} = .01$ . The first hypothesis was not supported; a postestimation joint test of condition,  $F(2, 132) = .30, p = .74, R^2_{adj} = -.01$ , did not reach statistical significance. For clarification, any negative  $R^2$  values are overcorrected and an artifact of the adjustment. Additionally, the second hypothesis was not supported; a postestimation joint test of the interaction between condition and sex was not statistically significant,  $F(2, 132) = .49, p = .62, R^2_{adj} = .01$ . A postestimation test did show a statistically significant effect for sex,  $F(1, 132) = 4.19, p = .043, R^2_{adj} = .02$ , such that the mean level of women's self-control ( $M = 1.38, SD = 0.58, 95\% CI: 0.31$  to  $2.34$ ) was significantly lower than the mean level of self-control for men ( $M = 3.70, SD = 0.57, 95\%, CI: 1.61$  to  $5.54$ ).



Table 6

## State Self-Control Scores by Condition and Sex

Condition	Males		Females		Total	
	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>	<i>n</i>	<i>M (SD)</i>
Emotional Infidelity	15	4.80 (7.97)	34	1.59 (5.09)	49	2.57 (6.21)
Sexual Infidelity	15	3.53 (6.88)	31	0.65 (5.39)	46	1.59 (6.00)
Control	22	2.77 (7.02)	21	1.90 (2.98)	43	2.35 (5.39)
Total	52	3.58 (7.17)	86	1.33 (4.76)	138	2.17 (5.87)

*Note.* *M* = Mean. *SD* = Standard Deviation.

Table 7

*Summary of Regression Analysis for Condition, Sex, and Interaction Predicting State Self-Control Using Effect Coded Variables*

Variable	<i>b</i>	<i>Robust SE b</i>	<i>t</i>	95% <i>CI</i>
Constant	2.54	0.57	4.48	(1.42, 3.66)
Emotional Infidelity	0.65	0.85	0.76	(-1.04, 2.34)
Sexual Infidelity	-0.45	0.81	-0.56	(-2.05, 1.15)
Males	1.16	0.57	2.05*	(0.04, 2.28)
Emotional Infidelity x Males	0.44	0.81	0.52	(-1.25, 2.13)
Sexual Infidelity x Males	0.28	0.57	0.35	(-1.32, 1.89)

*Note.* *N* = 138

$R^2 = 0.05$

\* $p < .05$

**Exploratory Analyses.** As exploratory analyses I also examined whether the effect of condition on state self-control differed based on level of chronic jealousy and trait self-control. That is, it is possible that imagined infidelity impacts state self-control only for those who are high in chronic jealousy or only for those low in trait self-control. I first centered both continuous variables and again, using effect-coded indicators for the conditions, I ran two multiple linear regressions. For the first regression I examined the main effects of condition and chronic jealousy on state self-control and also an interaction between condition and chronic jealousy on state self-control. The data did not violate the assumption of equal variance ( $\chi^2(1) = 0.13, p = .72$ ). The overall model was not significant,  $F(5, 132) = .72, p = .61, R^2 = .03, R^2_{adj} = -.01$ . Postestimation tests revealed that neither the main effect for condition,  $F(2, 132) = .46, p = .63, R^2_{adj} = -.01$ , nor the main effect of chronic jealousy,  $F(1, 132) = .12, p = .73, R^2_{adj} = -.01$ , were statistically significant. In addition, the interaction between condition and chronic jealousy was not statistically significant,  $F(2, 132) = 1.30, p = .28, R^2_{adj} = -.01$ . For the second multiple regression I examined the main effects of condition and trait self-control and the interaction between these variables on state self-control. The data did not violate the assumption of equal variance ( $\chi^2(1) = 1.48, p = .22$ ). The overall model was not significant,  $F(5, 131) = .78, p = .57, R^2 = .03, R^2_{adj} = -.01$ . When examining the main effects using postestimation tests, neither condition,  $F(2, 131) = 0.22, p = .81, R^2_{adj} = -.01$ , nor trait self-control,  $F(1, 131) = 1.36, p = .25, R^2_{adj} = -.01$ , were statistically significant. Furthermore, the interaction between condition and trait self-control was not significant,  $F(2, 131) = 0.82, p = .44, R^2_{adj} = -.01$ .

Finally, I tested two exploratory 3-way interactions in order to determine whether chronic jealousy and trait self-control interacted with sex and condition to impact state self-control.

Using the previously centered continuous variables and effect coded indicators for condition and

sex, the variables were entered into two multiple regressions. A prospective power analysis indicated that the total sample for examining a 3-way interaction should be at least 190; therefore, the following analyses using the current sample size of 141 may have been underpowered. For the first regression, I tested for the main effect of condition, sex, and chronic jealousy on state self-control in addition to an interaction between condition, sex, and chronic jealousy. Based on the Breusch-Pagan/Cook-Weisberg test for heteroskedasticity, the data violated the assumption of equal variance ( $\chi^2(1) = 7.17, p = .007$ ); therefore, I applied robust standard errors to the analysis. All three main effects, all possible 2-way interactions, and the proposed 3-way interaction were entered in the model simultaneously. The overall model was not significant,  $F(11, 126) = 1.18, p = .31, R^2 = .11, R^2_{adj} = .04$ . Postestimation tests revealed that the main effect for condition,  $F(2, 126) = 0.48, p = .62, R^2_{adj} = -.01$ , and the main effect for chronic jealousy,  $F(1, 126) = 0.00, p = .98, R^2_{adj} = -.01$ , were not significant. Although there was again a main effect for sex,  $F(1, 126) = 5.23, p = .02, R^2_{adj} = .01$ , the interaction between condition, sex, and chronic jealousy was not significant,  $F(2, 126) = 1.82, p = .17, R^2_{adj} = .04$ .

In the second regression I tested for a main effect of condition, sex, and trait self-control on state self-control and also an interaction between condition, sex, and trait-control. Once again, all three main effects, all possible 2-way interactions, and the 3-way interaction were entered into the model simultaneously (see Table 8). Robust standard errors were applied to the analysis to account for the observed heteroskedasticity ( $\chi^2(1) = 4.21, p = .040$ ). The overall model was not significant,  $F(11, 125) = 1.52, p = .131, R^2 = .11, R^2_{adj} = .03$ . Based on postestimation tests, neither the main effect for condition,  $F(2, 125) = 0.13, p = .879, R^2_{adj} = -.01$ , nor the main effect for trait self-control,  $F(1, 125) = 0.01, p = .933, R^2_{adj} = -.01$ , was significant. There was, however, a significant main effect for sex,  $F(1, 125) = 4.64, p = .033, R^2_{adj} = .01$ , and a

significant 3-way interaction between condition, sex, and trait self-control,  $F(2, 125) = 3.12, p = .048, R^2_{adj} = .03$ .

Table 8

*Summary of Regression Analysis for Main Effects and 3-way Interaction with Trait Self-Control Predicting State Self-Control Using Effect Coded Variables*

Variable	<i>b</i>	<i>Robust SE b</i>	<i>t</i>	95% <i>CI</i>
Constant	2.80	0.62	4.55	(1.58, 4.02)
EI	0.44	0.89	0.50	(-1.32, 2.20)
SI	-0.17	0.81	-0.21	(-1.76, 1.43)
Males	1.28	0.60	2.15*	(0.10, 2.46)
Trait Self-Control	0.01	0.06	0.08	(-0.12, 0.13)
EI x Males	0.29	0.89	0.33	(-1.48, 2.06)
SI x Males	0.26	0.82	0.32	(-1.36, 1.88)
EI x Trait Self-Control	-0.03	0.09	-0.36	(-0.21, 0.14)
SI x Trait Self-Control	0.12	0.08	1.57	(-0.03, 0.27)
Males x Trait Self-Control	-0.02	0.07	-0.28	(-0.16, 0.12)
EI x Males x Trait Self-Control	-0.22	0.09	-2.49*	(-0.40, -0.05)
SI x Males x Trait Self-Control	0.07	0.07	0.91	(-0.08, 0.21)

*Note.*  $N = 137$ . SI = Sexual infidelity; EI = Emotional infidelity.  
 $R^2 = 0.11$   
 \* $p < .05$

In order to decompose the significant interaction, separate regression equations were computed for different combinations of condition, sex, and trait self-control (i.e., individuals one standard deviation below the mean on trait self-control and individuals one standard deviation above the mean on trait self-control) to examine differences in state self-control. These calculations revealed that for males in the emotional infidelity condition, those with low trait self-control had higher state self-control than those with high trait self-control. The opposite pattern was found for females: Females in the emotional infidelity condition with low trait self-control had lower state self-control than those with high trait self-control.

## **Discussion**

Although the manipulation consisting of the hypothetical scenarios appeared to be effective for inducing jealousy, this did not lead to differences in participants' ensuing state self-control. Results showed no differences in participants' state self-control based on the condition to which they were exposed and there was not a difference between males' and females' self-control based on condition. The only significant effect was that males and females generally showed a difference in their self-control across all three conditions. That is, males exhibited higher self-control than females regardless of condition. Specifically, in regards to the behavioral task, males more often chose the healthy beverage and drank more of the healthy beverage than females.

As part of the exploratory analyses, the findings revealed that the relation between condition and state self-control did not depend on either chronic jealousy or trait self-control. Furthermore, chronic jealousy did not interact with sex and condition to produce differences in state self-control. However, the significant 3-way interaction between trait self-control, sex, and condition did reveal differences in state self-control for those in the emotional condition. That is,

females with high trait self-control showed higher state self-control than females with low trait self-control, whereas males with high trait self-control showed lower state self-control than males with low trait self-control. The results suggest that when experiencing emotional jealousy high trait self-control may buffer against ego depletion for females, but low trait self-control may actually counteract ego depletion for males. Very little literature has explored the role of trait self-control in this context, but recent research suggests that despite the typically positive outcomes associated with high dispositional self-control, it may actually worsen self-control depletion compared to low trait self-control (Imhoff et al., 2013). In an effort to explain this ironic effect, Imhoff et al. (2013) provided evidence that those with high trait self-control less frequently use impulse inhibition; therefore, if they have already exerted self-control, these individuals may show worse performance on a subsequent self-control task than those with low trait self-control simply because they have less experience with resisting temptation. The reason why there was a sex difference in how trait self-control affected state self-control in the current study is unclear. It may be that perceived emotional infidelity is a situation in which low trait self-control is more beneficial for males (than high trait self-control) and high trait self-control is more beneficial to females (than low trait self-control) in respect to ego depletion effects. However, it is also important to acknowledge that because several statistical tests were conducted that this increased the alpha level and thus resulted in a false positive, significant 3-way interaction.

Although not part of the hypotheses, an unexpected result of Study 2 was that emotional jealousy was negatively correlated with trait self-control. In Study 1, these two constructs showed no association. The most likely explanation for this difference is the different sample characteristics between the two studies. The data for Study 1 were collected through both a

psychology subject pool and an online advertisement; participants ranged in age from 18 to 65 years ( $M = 29.14$ ,  $SD = 10.03$ ). Participants in Study 2 were recruited solely through a psychology subject pool at a university; although ages ranged from 18 to 55 years, the average age was much lower and there was less variance in age ( $M = 21.82$ ,  $SD = 5.53$ ) compared to Study 2. It is possible that although young adults with low trait self-control tend to have higher levels of emotional jealousy, this association dissipates as individuals become older. Potential explanations for the lack of an association between self-control and emotional jealousy in older age are presented in the general discussion.

## CHAPTER 4

### GENERAL DISCUSSION

The results of Study 1 demonstrate that jealousy and self-control are related constructs such that those who are higher in chronic jealousy tend to have lower levels of trait self-control. Although this association was shown for total level of chronic jealousy and also for the subcomponents of behavioral and cognitive jealousy, there was not an association between self-control and emotional jealousy. Together, the three subscales of jealousy accounted for incremental variance in trait self-control after controlling for self-esteem and rejection sensitivity. The findings from Study 1 supported the hypotheses that jealousy would be negatively associated with self-control (with the exception of emotional jealousy), and that jealousy would predict significant variance in self-control. Jealousy is generally a distressing experience (Bowlin & Baer, 2012) that leads to a variety of negative emotions (Guerrero & Anderson, 1998; Sharpsteen & Kirkpatrick, 1997). Additionally, low self-control is associated with a variety of negative outcomes including poor adjustment and interpersonal problems (Tangney et al., 2004). Study 1 is one of the first studies to demonstrate a link between chronic jealousy and trait self-control that may be helpful for understanding individuals' functioning given further exploration.

The reason why there was not an association between emotional jealousy and trait self-control in Study 1, but that there was an association in Study 2, may be related to changes between these constructs as individuals age. For example, as older adults, dispositional self-control may still be related to how often people engage in detective and protective behaviors regarding their relationship (behavioral jealousy) and have different suspicions regarding their partner and a rival (cognitive jealousy); however, their typical self-control ability may no longer



be associated to how they emotionally react to jealousy. All three jealousy components were strongly correlated in both Study 1 and 2 and the average score on the emotional jealousy measure was very similar in either sample. This suggests that there is something unique about how emotional jealousy and its association with trait self-control varies across time. Because the constructs were measured at one time point, nonexperimentally, it is not possible to draw causal inferences. Future research should assess these constructs longitudinally in order to better understand their changing relation.

Study 2 examined how the experience of jealousy would impact individuals' state level of self-control. The first hypothesis was not supported; results showed that there were no differences in state self-control among those who imagined a partner's sexual infidelity, those who imagined a partner's emotional infidelity, and those in the control condition. Moreover, when exploring whether relevant trait constructs might moderate this relation, neither trait jealousy nor trait self-control interacted with condition to reveal differences in state self-control. The second hypothesis was also not supported; there was not a significant interaction between condition and sex on subsequent self-control. Interestingly, when exploring a 3-way interaction, results showed differences in state self-control based on condition, sex, and trait self-control. Finally, the results did show a significant difference in self-control between males and females such that generally males showed higher levels of self-control relative to females across all three conditions.

There may be various explanations for the findings from Study 2. Based on the results from the manipulation check, the experimental manipulation consisting of the hypothetical scenarios appeared to be effective. Those who imagined either emotional infidelity or sexual infidelity reported afterward feeling more jealous than those in the control condition. It is

possible that jealousy does not in fact affect state self-control and, thus, this is why there were no differences among the groups. Although chronic jealousy explained significant variance in trait self-control in Study 1, these constructs were measured nonexperimentally at a dispositional level and may operate differently at a state level. Thus, it may hold true that those who tend to be jealous tend to have low self-control; however, in regards to Study 2, when testing the momentary experience of jealousy on individuals' state level of self-control, there is no such effect.

A more precise explanation references how jealousy may affect self-control differently for people with certain personality traits. Based on its definition, self-control involves a conflict between dual motives, or one's distal and proximate goals (Magen & Gross, 2010). It may be that although individuals engage self-control in situations involving conflicts with their behaviors and thoughts, the process does not apply similarly in all situations involving their emotions. Emotion regulation refers to the ways that we alter or influence our emotions (Gross, 1998) and, given that it involves regulating the self, has been studied in relation to self-control. In research using the dual task paradigm, researchers have shown that having participants suppress their emotions leads to decreases in their subsequent self-control performance relative to controls (Baumeister et al., 1998; Muraven et al., 1998). However, until recently no research had examined whether this finding may differ based on one's personality and specific types of emotions. In 2013 Chow, Berenbaum, and Flores revealed that participants higher in independence exerted more self-control (as evidenced on a hand-grip task) when they suppressed anger compared to those lower in independence. In other words, those higher in independence did not show the typical ego depletion effect when suppressing anger. After imagining a partner's infidelity, this may have tapped participants' emotion regulation. Specifically, if

participants were attempting to regulate emotions related to anger, then based on the results from Chow et al. (2013) this jealousy experience would only deplete self-control for participants low in independence. Based on my knowledge, Chow et al. is the only study that has assessed how differences in personality and specific emotions may impact self-control depletion; therefore, it is possible that other individual differences may also account for this null effect.

An alternative explanation for the results of Study 2, if reversing the bidirectional influence, is that low self-control leads people to become more jealous. Furthermore, this could theoretically hold true at both the trait and state level. At a trait level having lower self-control may lead individuals to experience higher levels of jealousy. That is, these people may be less able to regulate their thoughts and behaviors generally and therefore they become jealous more easily than those who tend to have stronger self-control. At a situational level those whose self-control is momentarily depleted may exhibit more jealousy compared to those who have sufficient self-control resources available. In order to explore this possibility, future research should involve a design that essentially reverses the ordering of the tasks included in Study 2. First, participants would be randomly assigned to either a self-control depletion condition (e.g., working on unsolvable anagrams) or a control condition; afterward, all participants would read a hypothetical scenario describing their partner's infidelity (perhaps involving both emotional and sexual elements) and then write a letter describing their feelings. Next, in order to assess state jealousy, participants would complete a one-item measure of how jealous the exercise made them feel (see Slotter, Lucas, Jakubiak, & Lasslett, 2013). If those in the self-control depletion condition report higher feelings of jealousy than the control, this supports the prediction that low state self-control impacts jealousy.

Important to address, however, is that despite demonstrating this causal link, the reverse pattern could still exist considering the bidirectional influence between social process and self-control. For example, if in the current study induced jealousy had led to reduced self-control, it could still be possible that low self-control also leads to more jealousy. In other words, both may influence each other in a cyclical manner. Past research has revealed how social processes and self-control operate in such a way. Finkel et al. (2006) demonstrated across five different studies that a high-maintenance interaction led to self-control impairment. Studies have also shown, though, that decreased self-control will lead to poor interpersonal functioning (Finkel & Campbell, 2001; Finkel et al., 2009) that could potentially give rise to a high-maintenance interaction. Although studying either directional influence is useful and informative, this does create a muddled picture when trying to determine where effects are originated. At the very least, researchers need to acknowledge this bidirectional influence in their studies.

Another possible explanation for the null findings in Study 2 is that the beverage task did not accurately measure state self-control. As mentioned previously, we used a modified version of a task used in previous research. In these past studies participants were presented with 20 small paper cups that each contained 1 oz of a premixed vinegar beverage. Similar to the current study, participants were told, “This is a drink that does not taste good to most people. However, it is not harmful. In fact, it is good for you.” Additionally, they were offered a nickel for every ounce they drank to increase the incentive of drinking the unpleasant beverage and were told how much they drank was up to them (Baumeister et al., 2005; Muraven, 1998). In the Baumeister et al. study specifically, which was studying the effects of rejection on self-control, participants informed of bogus feedback that they would probably end up alone in life resulted in those individuals drinking less of this unpleasant but healthy drink compared to those who were

told they would most likely spend their life surrounded by caring people. In the current study we chose to take this task one step further by first offering the participant a choice between the healthy beverage and a nonhealthy beverage. With this slight modification the task captures the definition of self-control as a conflict between dual motives in two respects: first, the choice of beverage and second, the amount of beverage consumed. Based on our validation of the task, participants rated the healthy drink as worse tasting than the nonhealthy drink (and comparatively, the nonhealthy drink was rated as better tasting than the healthy drink). Despite including this measure, we did not assess whether participants believed that the bad tasting beverage was, in fact, healthy and that the good tasting beverage was nonhealthy. In order to ensure that the task was assessing self-control, asking this question may have provided a more thorough validation.

When reflecting on the findings, it is important to point out that 70% of participants chose the healthy drink. Although the experimenters were instructed to use a neutral-sounding tone of voice and to act nonjudgmental when presenting the choice, it is possible that if participants believed that the drinks were healthy and nonhealthy, they felt pressured to choose the healthy beverage when being faced with this decision. After explaining either option, the experimenter stood next to the desk and waited for the participant to make his or her choice. Therefore, the task may have reflected the participant's impression management or desire to act like a "good" participant more than his or her self-control. If, for example, participants made their selection while not in the presence of the experimenter, the results may have been different. This possibility may similarly explain the observed sex difference in self-control. Research studying self-control depletion does not often report sex differences. It could be that there are rarely differences between males or females in their self-control, or that this difference is simply

not assessed in these studies. Research studying children from toddler age to early school years has consistently documented a sex difference in self-regulation, such that females tend to have better self-regulation than their male counterparts (e.g., Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006; Kochanska, Murray, & Coy, 1997; Matthews, Ponitz, & Morrison, 2009). Although self-control is a type of self-regulation, it cannot be assumed that this sex difference generalizes to self-control nor can we determine whether this difference persists in young adulthood.

Nonetheless, the results of the current study revealed the opposite pattern. It is important to point out, however, that all four experimenters in Study 2 were females. If participants felt pressured to choose the healthy beverage generally, it is very likely that males felt additional pressure based on the fact that they were in the presence of a female experimenter. Indeed, all males were heterosexual and may have been trying to impress the female experimenter in front of them.

It is also important to acknowledge how the ordering of the tasks in the current study may have impacted the results. Participants read the hypothetical scenario, wrote a letter regarding the scenario, completed the brief mood measure, and then completed the self-control task. Although writing the letter was meant to further induce feelings of jealousy for those in the infidelity conditions, it is possible that this exercise actually allowed participants time to reflect upon and perhaps even relieve the negative emotions associated with jealousy. As mentioned earlier, although studies have demonstrated how social processes can deplete self-control, other research has shown how social processes can improve self-control. In many of these studies participants who think about close others, either through priming or consciously reflecting, will afterward show increased self-control ability (Kumashiro & Sedikides, 2005, Shah, 2003). It has been hypothesized that such processes increase feelings of belongingness, which increases motivation to engage self-control (Nelson & Blackhart, 2013). In the current study although participants

were reflecting on a close other, the situation was a type of rejection; thus, it is difficult to compare the findings. However, it is still possible that simply thinking about a close other as part of the writing exercise was enough to increase self-control to a level that was comparable to controls. Additionally, even if the writing task did not directly affect self-control, it could have allowed time for self-control to replenish. Past research has demonstrated reduced ego depletion for individuals given recovery time after an initial task (e.g., Oaten et al., 2008); however, the minimum duration to rest in order to not experience self-control impairment is still unclear in the current research.

The significant 3-way exploratory interaction between condition, sex, and trait self-control supports the continued assessment of trait self-control in ego depletion research. As mentioned earlier, trait self-control is not often mentioned in such studies, but considering its relevance has potential for revealing important information regarding self-control depletion. Although Imhoff et al. (2013) demonstrated how high trait self-control could work to a disadvantage for those whose self-control is depleted, future research needs to continue and explore this relation. In reference to the current study, it is possible that level of trait self-control affects males' and females' state self-control differently, or in respect to the other null findings, could have represented a Type I error.

Another consideration with any task assessing self-control through consumption of a food or beverage is individual differences in participants' concerns with health. That is, a task that either presents participants with a good tasting, unhealthy food (that they must try to resist) or a healthy, bad tasting food (unpleasantness they must try to withstand) is indicative of self-control only to the extent that the participant aims to be healthy. Although most people recognize the value in being health conscious, it is important to recognize that not everyone is concerned with

limiting intake of harmful foods or increasing intake of healthy foods. Alternatively, in the case of the current study's specific task, those individuals who are exceptionally concerned with their health would have been more inclined to choose the healthy beverage on that respect alone. Therefore, in studies assessing self-control with such measures of eating or drinking it is important to take these differences into account.

### **Implications and Conclusions**

Considering the pivotal role that self-control plays in our daily lives, it is extremely important to be aware of how social processes can affect this ability. Jealousy, specifically, is commonly experienced in romantic relationships and although it may be adaptive, it is possible that when individuals encounter this state, it affects their ability to effectively self-regulate. Although it may seem counterintuitive that jealousy is adaptive yet could lead to diminished self-control, it is important to recognize that behaviors stemming from jealousy that are indicative of low self-control may actually be adaptive in this relationship context. Indeed, the anger and aggression associated with jealousy can serve to procure one's mate and protect the relationship from interlopers. The consequences of jealousy can, however, become dangerous when these behaviors reach extreme levels and involve violence. In the current set of studies despite demonstrating an association between high chronic jealousy and low trait self-control, experimentally inducing jealousy did not lead to differences in a behavioral measure of state self-control.

Given the research findings, it is still important to consider the possibility that the behavioral measure in Study 2 may have introduced Type II error and jealousy does in fact lead to self-control depletion. In future research it may be more effective to offer the choice between beverages while the participant is not in the presence of the experimenter, or it may be best to



only present a healthy, bad tasting beverage and measure the amount drunk of the single beverage. Additionally, if using this type of task, it may be helpful to assess whether participants believe that the beverages are healthy and nonhealthy. As mentioned earlier, it is also important to assess individual differences in health concerns as a possible factor that may influence the results in studies employing a beverage or food self-control task. Furthermore, future studies may consider trying a different measure of self-control such as persistence on a difficult task or performance on the Stroop task. Individual differences in how the specific emotions associated with jealousy affect self-control also deserves further attention. Although it is clear that frustrating and distressing experiences generally deplete self-control (see Nelson & Blackhart, 2013), new research suggests that because negative emotions ensue from jealousy, we may only observe diminished self-control for individuals with certain personality traits (Chow et al., 2013).

Overall, the results of the current studies highlight the need for future research to further explore the relation between jealousy and self-control. The findings from Study 2 suggest several possible avenues for different study designs that will help elucidate how these constructs operate. Research should continue and be designed to uncover how jealousy impacts self-control given implications for individuals' behavior, both in their self-functioning and in their relationships.

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7. I think that X is secretly developing an intimate relationship with someone of the opposite sex.
8. I suspect that X is crazy about members of the opposite sex.

**How would you emotionally react to the following situations?**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<b>Very Pleased</b>						<b>Very Upset</b>	

1. X comments to you on how great looking a particular member of the opposite sex is.
2. X shows a great deal of interest or excitement in talking to someone of the opposite sex.
3. X smiles in a very friendly manner to someone of the opposite sex.
4. A member of the opposite sex is trying to get close to X all the time.
5. X is flirting with someone of the opposite sex.
6. Someone of the opposite sex is dating X.
7. X hugs and kisses someone of the opposite sex.
8. X works very closely with a member of the opposite sex (in school or office).

**How often do you engage in the following behaviors?**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	
<b>Never</b>						<b>All the time</b>	

1. I look through X's drawers, handbag, or pockets.
2. I call unexpectedly, just to see if s/he is there.
3. I question X about previous or present romantic relationships.
4. I say something nasty about someone of the opposite sex if X shows an interest in that person.
5. I question X about his/her telephone calls.
6. I question X about his/her whereabouts.
7. I join in whenever I see X talking to a member of the opposite sex.
8. I pay X a surprise visit just to see who is with him/her.

\*\*\*For homosexual participants, "opposite sex" was changed to "same sex"

**Rosenberg Self-Esteem Scale (Rosenberg, 1965)**

*Instructions: Below is a list of statements dealing with your general feeling about yourself. Using the scale provided, please indicate whether you strongly agree, agree, disagree, or strongly disagree with each statement.*

1. On the whole, I am satisfied with myself.

2. At times, I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I certainly feel useless at times.
7. I feel that I am a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself.
9. All in all, I am inclined to feel that I am a failure.
10. I take a positive attitude toward myself.

**Rejection Sensitivity Questionnaire (RSQ) (Berenson et al., 2009)**

*The items below describe situations in which people sometimes ask things of others. For each item, imagine that you are in the situation, and then answer the questions that follow it.*

**1. You ask your parents or another family member for a loan to help you through a difficult financial time.**

How concerned or anxious would you be over whether or not your family would want to help you?	very unconcerned					very concerned
	1	2	3	4	5	6
I would expect that they would agree to help as much as they can.	very unlikely					very likely
	1	2	3	4	5	6

**2. You approach a close friend to talk after doing or saying something that seriously upset him/her.**

How concerned or anxious would you be over whether or not your friend would want to talk with you?	very unconcerned					very concerned
	1	2	3	4	5	6
I would expect that he/she would want to talk with me to try to work things out.	very unlikely					very likely
	1	2	3	4	5	6

**3. You bring up the issue of sexual protection with your significant other and tell him/her how important you think it is.**

How concerned or anxious would you be over his/her reaction?	very unconcerned					very concerned
	1	2	3	4	5	6
I would expect that he/she would be willing to discuss our possible options without getting defensive.	very unlikely					very likely
	1	2	3	4	5	6

**4. You ask your supervisor for help with a problem you have been having at work.**

How concerned or anxious would you be over whether or not the person would want to help you?	very unconcerned					very concerned
	1	2	3	4	5	6
I would expect that he/she would want to try to help me out.	very unlikely					very likely
	1	2	3	4	5	6

**5. After a bitter argument, you call or approach your significant other because you want to make up.**

How concerned or anxious would you be over whether or not your significant other would want to make up with you?	very unconcerned	very concerned
	1 2 3 4 5 6	
I would expect that he/she would be at least as eager to make up as I would be.	very unlikely	very likely
	1 2 3 4 5 6	

**6. You ask your parents or other family members to come to an occasion important to you.**

How concerned or anxious would you be over whether or not they would want to come?	very unconcerned	very concerned
	1 2 3 4 5 6	
I would expect that they would want to come.	very unlikely	very likely
	1 2 3 4 5 6	

**7. At a party, you notice someone on the other side of the room that you'd like to get to know, and you approach him or her to try to start a conversation.**

How concerned or anxious would you be over whether or not the person would want to talk with you?	very unconcerned	very concerned
	1 2 3 4 5 6	
I would expect that he/she would want to talk with me.	very unlikely	very likely
	1 2 3 4 5 6	

**8. Lately you've been noticing some distance between yourself and your significant other, and you ask him/her if there is something wrong.**

How concerned or anxious would you be over whether or not he/she still loves you and wants to be with you?	very unconcerned	very concerned
	1 2 3 4 5 6	
I would expect that he/she will show sincere love and commitment to our relationship no matter what else may be going on.	very unlikely	very likely
	1 2 3 4 5 6	

**9. You call a friend when there is something on your mind that you feel you really need to talk about.**

How concerned or anxious would you be over whether or not your friend would want to listen?	very unconcerned	very concerned
	1 2 3 4 5 6	
I would expect that he/she would listen and support me.	very unlikely	very likely
	1 2 3 4 5 6	

Appendix B: Study 2 Brief Mood Measure

**Brief Mood Measure**

*Please use the following scale to indicate the extent to which you feel each mood.*

	Not at all				Extremely				
1. Jealous	1	—	2	—	3	—	4	—	5
2. Sad	1	—	2	—	3	—	4	—	5
3. Anxious	1	—	2	—	3	—	4	—	5
4. Angry	1	—	2	—	3	—	4	—	5
5. Happy	1	—	2	—	3	—	4	—	5
6. Accepted	1	—	2	—	3	—	4	—	5

## VITA

### LYNDSAY A. NELSON

- Education: Our Lady of the Lake Catholic School, Ashland, Wisconsin  
Ashland High School, Ashland, Wisconsin  
B.S. Psychology, University of Wisconsin – Eau Claire, Eau Claire, Wisconsin, May 2009  
M.A. Psychology, Experimental Psychology Concentration, Appalachian State University, Boone, North Carolina, May 2011  
Ph.D. Psychology, Experimental Psychology Concentration, East Tennessee State University, Johnson City, Tennessee, August 2014
- Professional Experience: Graduate Instructor, Department of Psychology, Appalachian State University, August 2010 – May 2011  
Graduate Instructor, Department of Psychology, East Tennessee State University, January 2012 – May 2013  
Research Mentor, Department of Psychology, East Tennessee State University, August 2013 – May 2014
- Publications: Bleske-Reчек, A., Kolb, C., Stern, A. S., Quigley, K., & Nelson, L. A. (2014). Face and body: Independent predictors of women's attractiveness. *Archives of Sexual Behavior*, doi:10.1007/s10508-014-0304-4
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Honors and Awards:

Priester Sloan Family Psychology Scholarship, Department of Psychology, East Tennessee State University, 2012  
Diversity Fund Graduate Travel Award for SPSP Conference Society for Personality and Social Psychology, 2013  
Dissertation Scholarship Award, School of Graduate Studies, East Tennessee State University, 2014