

ADULT ATTACHMENT DYNAMICS AS A PREDICTOR OF  
DAILY ALCOHOL USE AND ROMANTIC RELATIONSHIP FUNCTIONING

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by  
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OF DAILY ALCOHOL USE AND ROMANTIC RELATIONSHIP FUNCTIONING

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## CHAPTER 1: INTRODUCTION

Attachment styles are characterized by stable individual differences in propensities to seek physical and emotional closeness with a romantic partner as well as in presumptions about the responsiveness of the partner. These styles lie on two continuous dimensions of anxious and avoidant attachment (further explained below), which in part reflect one's views of oneself and one's views of others, respectively. Previous research has clearly documented that attachment styles not only predict multiple aspects of relationship functioning (see Mikulincer & Shaver, 2007; 2003; Feeney, 1999; Fraley & Shaver, 2000, for reviews), but also alcohol use (e.g., Brennan & Shaver, 1995) and abuse (e.g., Cooper, Pioli, Levitt, Talley, Micheas, & Collins, 2006; Cooper, Shaver, & Collins, 1998; Mickelson, Kessler, & Shaver, 1997). However, only one study directly assessed the effects of attachment on alcohol use in the context of romantic relationships (Senchak & Leonard, 1992), and it failed to find a similar pattern of results to what has been reported elsewhere (e.g., Brennan & Shaver, 1995; McNally, Palfai, Levine, & Moore, 2003), perhaps because the sample was limited to newlywed couples.

Thus, the current study examines the effects of attachment styles on alcohol use, relationship functioning, and the strength and direction of bidirectional associations between them in an unselected sample of young adult (mostly college student), heterosexual, romantic couples. Individual differences in attachment styles are hypothesized to shape the quality of relationship experiences and patterns of alcohol use. Moreover, net of this influence, alcohol use is hypothesized to drive relationship processes and in turn these processes are hypothesized to drive alcohol use. Finally, the

nature and strength of the links between drinking and relationship functioning are hypothesized to differ in multiple and complex ways as a function of individual differences in attachment styles. The following selectively reviews the literature pertaining to these associations, summarizes the relevance of this research to the present study by presenting an elaborated set of hypotheses at the end of the review, and presents a series of analyses designed to test these hypotheses.

### **Bidirectional Effects of Alcohol Use and Relationship Functioning**

Alcohol use and relationship functioning have been shown to influence one another in a reciprocal manner. Studies examining the influence of alcohol use on relationship functioning point to at least three important factors that determine whether the effects of alcohol are positive vs. negative: the amount consumed, whether partners drank together vs. apart, and the gender of the drinker. First, experimental laboratory (Leonard & Roberts, 1998; MacDonald, Zanna, & Holmes, 2000) and naturalistic diary (Fischer et al., 2005; Levitt & Cooper, in press) studies have shown that alcohol has more detrimental effects (e.g., increased conflict, negative relationship events) on later relationship processes as heavier amounts are consumed. In contrast, alcohol has more positive effects (e.g., increased agreeableness) when low to moderate amounts are consumed (aan het Rot, Russell, Moskowitz, & Young, 2008; Haber & Jacob, 1997). In fact, in a 3-week diary study of romantic couples, Levitt and Cooper (in press) found a curvilinear effect of actor alcohol consumption on next day perceptions of intimacy such that intimacy increased when low to moderate amounts of alcohol were consumed, whereas it decreased when heavy amounts were consumed. However, a main effect of consumption was only found for partners.

Second, results of longitudinal (Homish & Leonard, 2005) and diary (Dunn, Jacob, Hummon, & Seilhamer, 1987; Levitt & Cooper, in press) studies have also shown that effects of alcohol are more positive when partners drink together vs. apart. For instance, Levitt and Cooper (in press) found that drinking with one's partner (vs. drinking apart or not drinking) on a given day predicted the highest levels of one's own intimacy and the lowest levels of perceived negative partner behaviors the next day.

Finally, studies show that many of these effects, particularly effects of drinking with the partner, are moderated by gender. For example, in the study by Homish and Leonard (2005), benefits of drinking together were significant for both men and women at baseline, but only significant for women over time. Additionally, in the study by Levitt and Cooper (in press), men experienced significant decreases in their felt intimacy the day after they drank heavier amounts, regardless of whether they drank with their partner. However, women experienced a significant decline in intimacy as a function of increased consumption only when they drank apart from their partner. When they drank with him, they were protected from this decline in intimacy. Moreover, women who drank apart from their partners reported stronger perceptions of negative partner behaviors and negative relationship events the next day compared to men.

The effects of relationship experiences on alcohol use are less well researched. Nevertheless, existing research suggests that individuals drink both to enhance or maintain positive emotions and to regulate or cope with negative ones (Cooper, Frone, Russell, & Mudar, 1995). Although some diary research examining these links have found evidence of increased consumption following positive relationship experiences (DeHart, Tennen, Armeli, Todd, & Affleck, 2008), most research indicates that

individuals drink in response to negative relationship experiences as a means to cope with or regulate negative emotion stemming from these processes (Levitt & Cooper, in press; Romelsjo, Lazarus, Kaplan, and Cohen, 1991; see also Marshal, 2003; Roberts & Linney, 2000, for reviews).

Gender differences have also been found in the nature of relationship effects on alcohol use. Romelsjo et al. (1991) found that men were more likely than women to drink in response to relationship problems, whereas women were more likely than men to drink in response to low levels of intimacy. Partially supporting these results, Levitt and Cooper (in press) found that both men and women drank more on days after they perceived their partners behaving negatively, but only women drank more in response to low intimacy. Moreover, only women drank more with their partners following negative relationship experiences.

In sum, laboratory, longitudinal, and diary studies all show that heavy drinking can have adverse effects on relationship functioning, whereas light drinking can have positive effects. Evidence also suggests that drinking with vs. apart from one's partner directly leads to improved functioning the next day, and can buffer the adverse effects of heavy consumption, at least among women. In the reverse direction, individuals also appear to drink in response to both positive and negative relationship experiences, presumably in an effort to up-regulate positive emotions and down-regulate negative ones. Finally, some effects in both directions appear to be stronger for women than men.

### **Attachment, Relationship Functioning, and Alcohol Use**

The foregoing suggests that effects between alcohol use and relationship functioning are variable and depend on multiple factors. In the following sections, as

previously mentioned, we consider attachment style as both a direct contributor to alcohol use and relationship functioning, as well as a potentially important moderator of how these reciprocal processes play out on a day-to-day basis.

### **Adult Romantic Attachment: Theory and Measurement**

John Bowlby's (1969/1982; 1973; 1980) original theory of attachment focused on the evolutionary bond between an infant and its mother. A healthy attachment bond was characterized by the infant relying on the caretaker as a secure base from which to explore the environment. Ainsworth, Blehar, Waters, & Wall (1978) later examined individual differences in this attachment bond, and identified three distinct attachment styles. The majority of infants, called *secure*, were upset when their mother left the room, but were quickly and easily consoled upon the mother's return. The remaining infants, termed *insecure*, evinced two distinct patterns of behavior. *Anxious-ambivalent* infants were notably upset when the mother left the room, and seemed to remain upset and angry upon the mother's return despite her efforts to comfort the child. Finally, *avoidant* infants differed from their secure and anxious-ambivalent counterparts in that they were less upset when the mother left, and seemed distant or even uncaring upon the mother's return.

Subsequent work showed that hallmark characteristics of these attachment styles are systematically related to parenting (see Ainsworth, 1979, for a review). For example, a mother who is reliably responsive to an infant's distress and who provides quality caregiving (e.g., holding the infant, face-to-face interactions, etc.) is likely to have an infant who develops a secure attachment style. Thus, secure infants come to believe that they are worthy of care and that the caretaker is dependable and will be accessible in

times of distress. In contrast, mothers who react inappropriately and unreliably towards infants (i.e., sometimes providing adequate caregiving and sometimes not) are likely to have infants who develop anxious attachment styles. These infants are uncertain of whether, why, and how they will receive care when distressed. Finally, mothers who are inattentive to their infants and respond with anger and frustration are likely to have infants who develop avoidant attachment styles. In essence, these infants come to believe that receiving care is unlikely and that they must learn to rely on themselves.

Bowlby also believed that the attachment system that develops in childhood operates “from the cradle to the grave” (1979/1994, p. 129). He hypothesized that individuals develop “working models” of attachment based on early childhood experiences with primary caregivers, which are then used to guide and interpret experiences throughout the lifespan. Working models can be conceptualized as schemas or mental representations of how individuals view themselves (i.e., whether they are worthy of others’ care) and others (i.e., whether others are responsive and dependable; see Collins, 1996, for a review on the concept of working models). Individuals are then able to quickly reference and apply these working models to experiences in future interpersonal relationships.

Hazan and Shaver (1987) created the first pen-and-paper measure of adult attachment, which was comprised of three paragraphs characterizing the secure, anxious/ambivalent, and avoidant attachment styles, based on the patterns observed by Ainsworth et al. (1978) among infants. From Hazan and Shaver’s (1987) work and that of numerous subsequent studies (see Mikulincer and Shaver, 2007, for a review), a reliable portrait has emerged of the three types of individuals identified by this measure. *Secure*

individuals are comfortable with intimacy, are willing to trust and depend on their partners, and perceive themselves as worthy of their partners' love. *Anxious-ambivalent* individuals, on the other hand, have an extreme desire for closeness, yet they feel unworthy of partners' love and care, and consequently worry excessively that their partners do not love them and that they will be rejected or abandoned. Finally, *avoidant* individuals are uncomfortable with intimacy and dislike depending on others. They view themselves as self-reliant and their partners as untrustworthy and undependable.

Although initial work focused on attachment style implications for close relationships, researchers now realize that attachment styles have broad and general implications for how one experiences, expresses, and regulates emotion. According to Mikulincer and Shaver (2003; see also Mikulincer & Shaver, 2007, for a review), anxious and avoidant individuals use strikingly different emotional strategies. Anxious individuals relative to their non-anxious counterparts tend to be hypersensitive and hypervigilant to emotional distress and to misconstrue interpersonal situations as being more negative than they really are. Consequently, anxious individuals tend to become highly emotionally expressive in the face of real or perceived threats to the attachment system, and to engage in distinctly maladaptive behaviors such as becoming angry or hostile. Because these behaviors inhibit the development of emotional security and often are out of line with social norms, a cycle of negative perceptions and behaviors can develop into what has been termed a "chronically negative perceptual bias" (Campbell, Simpson, Boldry, and Kashy, 2005, p. 527).

On the other hand, Mikulincer and Shaver (2003; 2007) argue that avoidant individuals use strategies aimed at deactivating or suppressing the attachment system. In

contrast to anxious individuals who are hyper-expressive of their emotions, avoidants are uncomfortable with the experience and expression of emotion and try to deny their own emotional needs in an attempt to remain self-reliant. Deactivation of the attachment system is thought to be the first line of defense among avoidants such that threats to the attachment system are not entirely encoded (Fraley, Garner, & Shaver, 2000). However, experimental lab studies show that although avoidants may lack conscious awareness of these threats, and thus report less distress, they nevertheless respond to them on a physiological level (e.g., Diamond, Hicks, & Otter-Henderson, 2006). Moreover, when avoidants do experience distress-related emotions, their overriding response is to attempt to suppress or shut down these emotions. In short, attachment related concerns are thought to be hyperactivated among anxious individuals, but deactivated or suppressed among avoidant individuals.

Finally, although initial research in this area conceptualized attachment styles in terms of discrete types, more recent research indicates that these types are best conceptualized in terms of continuous underlying dimensions. As Fraley and Shaver (2000) argue, categorical measures of attachment are inherently static and force individuals to choose one type instead of allowing them to indicate their level of attachment on a continuum. Therefore, it is now widely agreed that attachment is best measured using two theoretically orthogonal, continuous dimensions of anxiety (thought to reflect at least in part a negative model of self) and avoidance (thought to reflect at least in part a negative model of others; e.g., Brennan, Clark, and Shaver, 1998). Thus, the remainder of this proposal will discuss attachment differences in terms of the two

dimensions, although the notion of attachment “styles” will be invoked as shorthand for the two dimensions.

### **Attachment and Relationship Functioning**

Extensive research has demonstrated that anxious and avoidant attachment styles impact adult romantic relationship functioning in negative yet distinctive ways (for reviews, see Mikulincer & Shaver, 2007; 2003; Feeney, 1999; Fraley & Shaver, 2000). The present review is necessarily selective given the vastness of the literature, and focuses primarily on the subset of studies that used stronger methodologies, including longitudinal, diary, and observational studies conducted in laboratory settings that bear on the effects of individual differences in attachment on relationship functioning.

**Anxiety.** Anxious individuals, who are insecure about their own worth and chronically worried about the availability of attachment figures, tend to experience relationships that are volatile, emotionally intense, and more draining and demanding for their partners. For example, Simpson, Rholes, and Phillips (1996) observed discussions of conflict and relationship problems among 123 dating couples who were randomly assigned to discuss either a major or minor problem. In both participant self-reports and observer ratings, anxiously attached individuals (assessed by the Adult Attachment Questionnaire [AAQ]) who discussed a major but not a minor problem were significantly more likely than those lower in anxiety to have poor quality discussions, to become angry or hostile and demonstrate distress and anxiety during the discussion, and to feel negatively about the relationship after the discussion. In a second study, independent observers rated 93 dating couples in a laboratory setting (Collins & Feeney, 2000). Approximately equal numbers of male and female partners were assigned to either a

support seeking role (discussing a personal problem or stressful event) or a caregiving role. Although no effects were found for anxious attachment (assessed by a combination of the AAS [Collins & Read, 1990] and Bartholomew and Horowitz's, 1991, categorical measure) within the support seeking role, those higher in anxious attachment demonstrated significantly lower overall caregiving quality, less instrumental support, and less responsiveness as well as more negative support (i.e., dismissing the situation, blaming the support seeker, etc.) compared to those lower in anxious attachment. In a separate lab based study, Campbell et al. (2005; see also Simpson, Campbell, and Weisberg, 2006) found similar effects in which observers rated anxious individuals as more distressed during discussions of relationship problems despite positive partner behaviors.

Attachment studies conducted using daily diary methodologies document similar adverse effects for anxious attachment. Using a continuous measure of attachment, Bradford, Feeney, and Campbell (2002) assessed both dispositional and diary accounts of disclosure in college-aged couples. Although respondents' own attachment-related anxiety was not related to dispositional or diary reports of disclosure, partners of highly anxious individuals saw the interactions with their partners as dissatisfying, negative in tone, and low in intimacy. Moreover, in studies of couples, Shaver, Schachner, and Mikulincer (2005) found in both cross-sectional (Study 1) and diary (Study 2) data that anxious attachment was positively and significantly correlated with excessive reassurance seeking. In turn, diary reports showed that daily excessive reassurance seeking was significantly associated with dyadic conflict the next day.

Gender differences in the effects of anxious attachment have also been found in a number of studies. For example, in one of the earliest studies to find a gender difference, Collins and Read (1990) examined attachment styles (using the Adult Attachment Scale [AAS]), and relationship quality among 71 dating couples. Both self- and partner-reports showed that partners of anxious women reported significantly more conflict and less satisfaction, closeness, and communication in the relationship, whereas these effects were not found among partners of anxious men. Moreover, in self-reports, anxious women but not anxious men reported less satisfaction, closeness, and partner responsiveness, and more jealousy. Similarly, in a study of college students, anxious women reported significantly more negative emotions following romantic jealousy episodes than secure women, whereas this was not true for men (Sharpsteen & Kirkpatrick, 1997). In a study by Simpson (1990), highly anxious women but not men reported less committed relationships, and the male partners of anxious women (but not the female partners of anxious men) reported significantly less trust and satisfaction in their relationships. Similarly, Shaver et al (2005) found in data from diary reports that highly anxious women experienced increases in negative mood on a given day the more they sought reassurance from their partner the previous day, whereas low anxiety women reported a decrease in negative affect as a function of reassurance seeking. In other words, low anxiety women could be reassured, whereas high anxiety women could not. They also found that dyadic conflict increased on a given day among highly anxious men the more reassurance seeking they sought the prior day, whereas this pattern was not true for men low in anxiety.

Using data from a community sample of adolescents followed over time, Collins, Cooper, Albino, and Allard (2002) found that male partners of women who were anxiously attached during adolescence (as assessed by Hazan and Shaver's [1987] categorical measure) reported higher levels of demand-withdraw behaviors 5 ½ years later, whereas this pattern was not true for partners of highly anxious men. In further analyses of data from this sample, Cooper et al. (2006) showed that women characterized as anxiously attached in adolescence were more likely to cheat on their partners in young adulthood, whereas this was not true for men characterized as anxious in adolescence.

In summary, studies using a variety of methodologies have shown that anxious individuals experience relationships characterized by volatility, intense emotion, and conflict, at least in part because they view their relationship through a negative perceptual lens. As the previously reviewed studies illustrate, anxious individuals are hypervigilant to real or imaginary negative cues from partners and relationship events, which in turn leads to overly emotional, exaggerated responding on the part of the anxious individual. Thus, it is not surprising that partners of anxious individuals appear to suffer particularly adverse effects. Finally, though some studies found similar effects of anxious attachment among men and women, many studies show more adverse effects among women than men.

**Avoidance.** Although the relationships of avoidant individuals are characterized by many of the same difficulties that plague the relationships of anxious individuals, avoidant relationships are distinguished by low levels of intimacy, disclosure, and caregiving that appear to stem from their efforts to de-activate or suppress the attachment system. For example, in the previously cited longitudinal study conducted by Collins and

colleagues (2002), individuals who were avoidant in adolescence were more likely to be in relationships some 5 ½ years later that were low in satisfaction, commitment, intimacy, shared disclosure and problem solving, as well as high in conflict. Similar results were reported by Simpson, Rholes, and Nelligan (1992) who videotaped couples' interactions after the female partner was told she would participate in an anxiety provoking experimental condition, though in fact there was none. Independent observers coded the tapes for comfort and support seeking on the part of the woman and reassurance and emotional support on the part of the man. Men higher in avoidance showed less reassurance and support when their partner experienced high levels of anxiety, and offered less verbal support compared to less avoidant men. In addition, women high in avoidance sought less comfort and support when their anxiety levels were high. Collins and Feeney (2000) also found that highly avoidant individuals sought significantly less support in a stressful laboratory situation than non-avoidant individuals. Taken together, this evidence illustrates the difficulties avoidant individuals have with both giving and seeking support in relationships, both of which are crucial to healthy relationship functioning.

Studies using daily diary designs also point to the adverse effects of avoidance on relationship quality. For example, Shaver et al. (2005) found that actor and partner avoidance negatively affected daily reports of relationship quality in both men and women. Bradford et al. (2002) examined the effects of attachment on disclosure in couples. Using both diary and dispositional reports, they found that avoidance was negatively associated with reports of one's own disclosure on a dispositional as well as daily basis. Avoidance was also negatively related to daily reports of relationship

intimacy, though this effect became insignificant when relationship length was controlled. Finally, partner avoidance was also negatively related to one's own dispositional disclosure, though not to daily reports of disclosure.

Gender differences have also been found in studies examining the effects of avoidant attachment on relationship functioning. However, contrary to the evidence for anxious individuals, effects of avoidant attachment appear to be stronger among men than women. For instance, in the previously described longitudinal study by Simpson (1990) partners of avoidant men reported less satisfaction in the relationship than partners of avoidant women. In Collins and Read's (1990) study, partners of avoidant men but not avoidant women reported significantly less satisfaction, closeness, and communication in the relationship and also more conflict, jealousy, and jealous acts. Similarly, in a study of college students, Levy and Kelly (2010) found that dismissing avoidant men reported significantly more sexual jealousy than dismissing avoidant women (however, see Sharpsteen & Kirkpatrick, 1997, for an exception). In more recent longitudinal work, Collins et al. (2002) showed that men who were highly avoidant in adolescence reported more demand-withdraw behavior in their relationships 6 years later than men low in avoidance, whereas this was not true among avoidant women. This effect was corroborated by partners of avoidant men who reported less affection and more criticism compared to partners of non-avoidant men. In addition, partners of avoidant men (but not partners of avoidant women) described their relationships as less intimate, and reported both less effective problem solving and more conflict.

Similar gender differences have also been found in several lab-based observational studies. Simpson et al. (1996) found that highly avoidant men were rated

by independent observers as less warm and supportive than less avoidant men during post-conflict discussions with their partners. Moreover, avoidant attachment interacted with conflict condition such that highly avoidant men were rated as much less warm and supportive after discussing a major rather than minor problem, whereas no difference was found for men low in avoidance. Importantly, however, no differences were observed among avoidant women. Finally, Bradford et al. (2002) also found a significant attachment X gender interaction such that the effect of high vs. low avoidance on dispositional reports of disclosure was stronger for men than women.

In summary, the existing data suggests that avoidant individuals' efforts to deactivate or suppress their attachment needs lead them to distance themselves emotionally from their partners, to be unsupportive and unresponsive to expressions of partner need, and to restrict disclosure of thoughts, feelings, and emotions to their partners. Finally, although effects of avoidant attachment have been found for both men and women, many studies show stronger effects for men.

**Interactive effects.** There is also evidence showing that anxious and avoidant attachment dimensions interact both within-person and within-couple, across partners (Mikulincer & Shaver, 2007). At the within-person level, being high in both anxiety and avoidance has been associated with particularly maladaptive relationship outcomes, whereas being low in both, otherwise considered secure, has been associated with superior outcomes above and beyond what either dimension accounts for individually.

Less is known about the interactive effects of attachment within-couples, across partners. Mikulincer and Shaver (2007) point out that only a small number of studies have examined couple-level interaction effects, and that results of these studies have been

inconsistent. Nevertheless, several meaningful patterns have emerged among those studies reporting significant interactions. For example, couples in which both members are secure tend to be healthier and to function better than couples in which one or both members are insecure. There is also evidence that having at least one secure member can buffer the adverse effects of insecurity (either high anxiety or high avoidance) on relationship functioning. Finally, couples with one anxious and one avoidant partner, and with two anxious partners have also been shown to fare particularly poorly. Interestingly, there is little evidence to suggest that avoidant-avoidant couples function poorly (Mikulincer & Shaver, 2007), a finding that might reflect that two avoidant individuals are unlikely to be in stable, committed relationships or that the needs of avoidant individuals are relatively congruent.

### **Attachment and Alcohol Use**

Characteristic differences in how anxious and avoidant individuals attempt to regulate emotions have important implications for when, why, and how much they are likely to drink. Research (reviewed below) documents consistent differences that are generally in line with theoretical expectations.

**Anxiety.** The extant literature consistently shows that anxious individuals both drink more on average and have more alcohol-related problems. Mickelson et al. (1997), using a national probability sample of adults, showed that having an anxious attachment style was significantly correlated with meeting diagnostic criteria for alcohol dependence. Cooper et al. (1998), using a community sample of adolescents, found that those with an anxious attachment style were more likely than their avoidant peers to have ever consumed alcohol. Furthermore, in a subset of 1,151 respondents who had ever used

alcohol or drugs, anxious individuals reported significantly more drinking problems than either secure or avoidant – an effect that was partially mediated by hostility.

In longitudinal analyses of this same sample, Cooper, Albino, Orcutt, and Williams (2004) showed that anxious individuals who were lifetime abstainers at baseline were significantly more likely than avoidant (but not secure) individuals to start drinking and to report heavy or problem drinking over the next 5 years. In growth curve analyses of these same individuals over an even longer developmental period (Cooper, Levitt, Pioli, and Micheas, 2010), anxious individuals were found to drink significantly more on average than avoidant individuals at baseline (age 14) and to continue to do so through age 30. Moreover, although the drinking patterns of anxious and secure individuals were similar throughout adolescence and into their early twenties, drinking among anxious individuals remained elevated into the early 30s, whereas drinking among secure individuals showed a more normative pattern of decline.

Anxious individuals are also more likely to drink to cope with negative emotion. For instance, Brennan and Shaver (1995) found that anxious attachment was significantly positively correlated with drinking to cope among college students. Similar results were found by Ognibene and Collins (1998) in a vignette study where anxiously attached individuals were more likely to say they would use escape-avoidance coping strategies (including alcohol and drug use) to cope with a range of stressful situations. Additionally, Kassel, Wardle, & Roberts (2007) found that anxious attachment significantly positively predicted drinking to cope with stress and negative affect after controlling for dysfunctional attitudes and self-esteem. There were no such effects for secure or avoidant individuals.

Recent cross-sectional studies using samples of college students have also shown that problematic alcohol use among anxious individuals is mediated through drinking to cope. McNally et al. (2003) found that anxious individuals relative to their less anxious counterparts were more likely to drink to cope and to experience drinking problems, and that coping motives partially mediated the association between anxious attachment and drinking related problems. Similarly, Molnar, Sadava, DeCourville, & Perrier (2010) found that coping motives mediated the association between anxious attachment and alcohol-related consequences (i.e., problems from drinking). Anxious attachment also had a positive direct effect on alcohol-related consequences, but a negative effect on high-risk drinking, suggesting that anxious individuals are more likely to experience problems from alcohol that are independent of how much they drink. Together these results paint a relatively consistent picture of alcohol use among anxiously attached individuals – a picture that is consistent with the idea that anxious individuals use alcohol to cope with their volatile emotional life.

Only one study (Senchak & Leonard, 1992) has examined alcohol use among anxiously attached individuals in the context of a close relationship or with specific regard to attempts to regulate emotional experience in response to relationship events. Interestingly, however, this study failed to find any effects for anxious attachment. Because this is only one study and all couples were newlyweds, there is a need to test this idea in a different sample that is not limited to a single stage of relationship development.

**Avoidance.** Contrary to the consistent evidence for anxious individuals, results are more mixed for avoidant individuals. Based on evidence that avoidant individuals have fewer social skills (Collins and Read, 1990) and report less social involvement than

their peers (Feeney & Noller, 1990), Cooper et al. (1998) hypothesized that avoidant adolescents would be less likely to have ever used alcohol. Once initiated, however, they hypothesized that due to elevated social discomfort and poor coping skills, among other factors, avoidant adolescents would report more heavy and problematic drinking than their peers. As hypothesized, Cooper and colleagues found that avoidant adolescents were less likely than their anxious or secure counterparts to have ever used alcohol. However, contrary to hypotheses, avoidant adolescents who had ever consumed alcohol were not significantly higher than secures on problem drinking, and were in fact significantly lower than their anxious peers.

Follow-up analyses of this same sample yielded similar results. Cooper et al. (2004) examined the onset of drinking between Time 1 and Time 2 (about 5 years later) based on attachment styles reported at Time 1 in a subset of 451 adolescents who had not consumed alcohol at Time 1. Results showed that avoidant individuals were the least likely of the three attachment groups to have started using alcohol by Time 2. Furthermore, in a subset of 349 adolescents who were alcohol abstainers at Time 1 but who had begun drinking by Time 2, avoidants also reported the lowest level of later involvement in heavy alcohol use. Attachment also significantly interacted with gender such that avoidant men (but not women) were less likely to have ever drunk alcohol at follow-up than non-avoidant men. Growth curve analyses of data collected over an even longer period of time from the same sample corroborate these results. Cooper et al. (2010) found that avoidant individuals reported significantly lower levels of typical use than anxious persons and significantly less heavy drinking than both anxious and secure individuals at the outset (age 14) of the study. Furthermore, a marginally significant ( $p <$

.10) attachment by gender interaction was found indicating that heavy drinking among avoidant men grew at a slower rate than that of their secure counterparts, though no differences in growth were found among women as a function of attachment avoidance.

Contrary to the work just reviewed, a number of studies show that avoidant individuals drink more than their non-avoidant counterparts. Brennan and Shaver (1995), for example, found that attachment avoidance was significantly positively related to more drinking on average among college students. In adults, Mickelson et al. (1997) found that avoidants were significantly more likely to meet diagnostic criteria for alcohol abuse and dependence. Similarly, in a sample of newlywed couples, Senchak and Leonard (1992) found that avoidant husbands reported significantly higher alcohol dependence scores (Skinner & Allen, 1982, as cited in Senchak & Leonard, 1992) than secure husbands, whereas no association was found between wives' avoidance and alcohol dependence scores.

Finally, evidence concerning the likelihood that avoidant individuals drink to cope is also mixed. For instance, Brennan and Shaver (1995) found that avoidant attachment significantly positively predicted drinking to cope. Similarly, Levitt, Silver, & Franco (1996) found that avoidant individuals were more likely than secures to report using alcohol or drugs to cope with troublesome relationships, though alcohol use was not assessed directly. Additionally, Molnar et al. (2010) found that attachment avoidance indirectly predicted negative alcohol-related consequences via increased drinking to cope. Other studies, however, failed to find effects of avoidant attachment on drinking to cope (e.g., Kassel et al., 2007; McNally et al., 2003).

In short, the research reviewed above provides a somewhat inconsistent pattern of results for avoidant individuals, including negative, positive and null findings. However, sample differences may provide a plausible explanation for the anomalous findings. Studies using Cooper's longitudinal sample of adolescents were the only ones to show lower levels of drinking among avoidants relative to non-avoidants, whereas studies using college students found either null (e.g., McNally et al., 2003) or positive (e.g., Brennan & Shaver, 1995) effects of avoidance. Studies of adults (e.g., Mickelson et al., 1997; Senchak & Leonard, 1992) also found generally positive effects. Thus, the fact that participants in the Cooper et al. studies were younger and less developmentally advanced may account for the disparate findings. Additionally, adolescents may have interpreted the content of the attachment measure, particularly its reference to "intimacy," to denote sexual intimacy instead of emotional intimacy (Collins et al., 2002). Thus, avoidance may mean something different in this sample than in older samples. In particular, it seems plausible that disproportionately more securely attached individuals may have selected this option assuming that it best reflected their decision to eschew sexual intimacy during adolescence. If so, avoidance may have been effectively "diluted" by inclusion of a larger percentage of secures than usual. Alternatively, it may be that avoidants, particularly as identified by this measure, lagged in their social development and were generally more risk adverse. Given the highly social nature of most risk behaviors during adolescence (see Moore & Arthur, 1989, and White, Bates, & Johnson, 1990), this interpretation is consistent with the pattern of other findings reported by Cooper and colleagues (1998) indicating that avoidant adolescents were less socially competent. Thus the processes we hypothesize to underlie avoidants' use of alcohol (i.e., distress activated by close,

interpersonal relationships) may not be relevant to individuals at this stage of development, though would presumably become increasingly relevant over time.

**Interactive effects.** We know of no studies examining alcohol-related outcomes that have tested either within-person or within-couple, across partner interactions between anxiety and avoidance. Nevertheless, one might imagine that patterns similar to those observed for relationship outcomes would also be obtained for alcohol-related outcomes.

### **The Current Study**

The present study builds on past research by testing a model of the associations between individual differences in attachment style and daily alcohol use and experiences in the context of a close romantic relationship. 69 adult heterosexual couples participated in the study, which consisted of an initial interview, followed by three weeks of diary reports, and finalized with an exit interview. During the diary portion of the study, participants carried Palm Pilot computers to complete daily morning and evening questionnaires in which they reported on feelings of intimacy and jealousy in the relationship, and alcohol use. Hypotheses were tested using the Actor Partner Interdependence Model (see Kenny, Kashy, & Cook, 2006, for a review), which allows for the testing of temporally matched actor and partner effects simultaneously. It should also be noted that the current study used data from the same sample as Levitt and Cooper, in press. However, the focus on attachment styles is unique to the present study. The present study further extends our past work by including jealousy as an additional indicator of relationship functioning. Furthermore, concerning relationship functioning

variables, only intimacy was examined in the previous study; the examination of jealousy is new to the current study.

### **Hypotheses**

Based on the research and theory reviewed above, the current study tested the following hypotheses.

#### **Part I: Attachment Effects on Alcohol Use and Relationship Functioning**

##### **Effects of attachment on relationship functioning.**

*Anxiety main effects.* Because of the well-documented volatility in the relationships of anxiously attached individuals (e.g., Simpson et al., 1996), we expected attachment anxiety to be significantly positively related to both the anxious individual's and his or her partner's reports of perceived jealousy. However, anxiety effects on intimacy may be absent or relatively weak given the attentiveness of anxious individuals to relationship issues and their desire to maintain closeness in relationships (Mikulincer & Shaver, 2007).

*Avoidance main effects.* Because of the difficulty that avoidant individuals have with closeness and intimacy in relationships (e.g., Collins et al., 2002), we expected to replicate prior research showing that attachment avoidance is associated with lower intimacy among both the avoidant individual and his or her partner. Additionally, because previous research has shown that avoidants experience more sexual jealousy (Levy & Kelly, 2010) and more negative emotions stemming from jealousy (Sharpsteen & Kirkpatrick, 1997), we expected avoidant individuals to report higher levels of jealousy.

##### **Effects of attachment on alcohol outcomes.**

*Anxiety main effects.* Based on past research (e.g., Brennan & Shaver, 1995), we expected that anxious individuals would drink more heavily on average. Expectations regarding drinking with vs. apart from the partner are less clear, however. It is possible that anxious individuals will be more likely to drink with the partner in an effort to build or strengthen the relationship (independent of whether this strategy actually works for them). Alternatively, they might be less likely to drink with their partner (and more likely to drink apart) because of the frequent and intense anger, hostility and jealousy they have been shown to experience in close relationships. Finally, consistent with the adverse effects partners of anxious individuals have been shown to experience, we expected that partners of anxious individuals would drink more heavily and be more likely to drink apart from their partner due to the strains associated with having a difficult, demanding, and volatile partner.

*Avoidance main effects.* Based on predominant findings from past research (e.g., Brennan & Shaver, 1995), we expected that avoidant individuals would drink more alcohol on average. Furthermore, avoidant individuals were expected to use alcohol, to the extent that they drink, as a way to distance themselves from their partner and, as such, would be more likely to drink apart as opposed to with their partner. Again although there is no research to guide this expectation, it is possible that partners of avoidant individuals might drink more heavily in an effort to cope with an unhappy or unfulfilling relationship. It is also possible that partners of avoidant individuals might be more likely to drink with their partners to the extent that doing so is seen as a way to connect with the partner.

**Higher-order interaction effects.** We tested higher-order interactions (up to three-ways) involving attachment dimensions and gender on both relationship functioning and alcohol-related outcomes. These interactions were of three types: interactions between attachment dimensions within a person, interactions of attachment dimensions between partners, and interactions between attachment dimensions and gender (both within a person and across partners). Specific hypotheses regarding these interactions are briefly outlined below.

***Within-person interactive effects of attachment on relationship functioning and alcohol outcomes.*** Consistent with prior research (Mikulincer & Shaver, 2007), we expected that secure individuals (those low on anxiety and avoidance) would exhibit superior relationship outcomes, whereas those high on both dimensions would exhibit the poorest outcomes. Although there is less research on attachment and alcohol-related outcomes, we assumed a similar pattern would emerge for alcohol outcomes.

***Cross-partner interactive effects of attachment on relationship functioning and alcohol outcomes.*** Based on prior research (Mikulincer & Shaver, 2007), we expected similar interactive effects across partners' attachment styles as we did for within-person attachment style interactions. That is, we expected the most positive outcomes for couples in which both members are secure, and the worst outcomes for insecure-insecure couples, particularly couples including an anxious and avoidant partner or two anxious partners. Finally, it is also possible that the presence of a single secure partner might be sufficient to buffer the negative effects of an insecure partner.

***Gender differences.*** Finally, based on past research (e.g., Collins & Read, 1990; Collins et al., 2002), it was expected that attachment effects would be generally more

adverse for anxious women than for anxious men, whereas effects would be more adverse for avoidant men than for avoidant women. To the extent that gender differences are observed for partners of anxious and avoidant individuals, we would expect a similar pattern.

## **Part II: Attachment Moderation of Associations between Alcohol Use and Relationship Functioning**

**Effects of alcohol use on relationship functioning.** We expected main effects in line with our previous results (Levitt & Cooper, in press) for drinking context (i.e., drinking with vs. apart from one's partner), and for partner (but not actor) quantity on intimacy. Specifically, partner quantity should be inversely related to adaptive relationship functioning, and drinking with one's partner should be associated with relatively more positive (or less adverse) effects than drinking apart from one's partner. In addition, based on our prior research (Levitt & Cooper, in press) we also expected that drinking with one's partner would buffer the adverse effects of increasing quantity on relationship outcomes, though this effect should hold only for women. Finally, although our prior work only examined intimacy as an outcome, we would expect similar effects for jealousy.

### **Moderation of the alcohol use → relationship functioning link.**

***Anxiety X alcohol use interactions predicting relationship functioning.*** Because anxious individuals are more emotionally volatile and have poorer capacity to self-regulate (Mikulincer & Shaver, 2007), and drinking further disrupts the capacity to self-regulate (Fillmore & Vogel-Sprout, 1999), we expect that attachment anxiety should strengthen the adverse effects of heavy consumption on relationship outcomes. For

similar reasons, we expect that the potentially beneficial effects of drinking together may be undermined among highly anxious individuals, that the adverse effects of drinking apart may be intensified, or both.

***Avoidance X alcohol use interactions predicting relationship functioning.*** Given that avoidant individuals were hypothesized to more often drink apart from (vs. with) their partner, and that drinking away from one's partner is more detrimental to relationships than drinking together (Levitt & Cooper, in press), we expected individual differences in attachment avoidance to moderate the strength of the association between daily alcohol use and relationship functioning such that these effects would be stronger among those high vs. low in avoidance. Moreover, we expect that this effect should be mediated by drinking with the partner (i.e., mediated moderation). Expectations are less clear for the effects of drinking with partner. Although drinking with one's partner is generally associated with better outcomes, this effect is thought to occur because drinking together helps partners bond. However, bonding for avoidant individuals may be at best an ambivalent experience, and thus less likely to occur for those high in avoidance.

**Effects of relationship functioning on alcohol use.** Based on our previous work (Levitt & Cooper, in press), we expected individuals to drink more following poor relationship functioning (i.e., lower intimacy, higher jealousy). However, only women were found to drink with their partner in response to poor relationship functioning. Partner reports of intimacy were not found to predict actor alcohol use in our prior study. Although we did not examine jealousy in that study, we have no reason to expect different results for jealousy. Thus we will test partner effects as part of the Actor-Partner Interdependence Model (APIM), but we offer no specific hypotheses for these effects.

**Moderation of the relationship functioning → alcohol use link.**

*Anxiety X relationship functioning interactions predicting alcohol use.* Because of the heightened sensitivity and reactivity of anxious individuals to real or perceived problems in the relationship, we expected that individuals who were high vs. low in attachment anxiety would drink more in response to feelings of low intimacy and jealousy. To the extent that drinking with the partner is an adaptive response, we could expect individuals low in anxiety to be more likely to drink with their partner in response to negative relationship experiences. However, we could also imagine that individuals high in anxiety, who constantly seek closeness and reassurance, might be likely to drink with their partner in response to negative relationship experiences. Thus, the prediction for anxiety with respect to drinking with the partner is unclear.

*Avoidance X relationship functioning interactions predicting alcohol use.*

Predictions for avoidant attachment are less clear. On the one hand, there is ample evidence that individuals high in avoidance are less concerned with and upset by negative relationship experiences, and perhaps especially feelings of low intimacy. This suggests that, if anything, they would be less reactive to such experiences (and thus less likely to drink) than their low avoidance counterparts. At the same time, however, research shows that highly avoidant individuals are nevertheless affected at a physiological and possibly non-conscious level by relationship experiences, and for this reason might show greater alcohol use in an effort to self-medicate. Given these opposing possibilities, it is not clear whether or how avoidance might moderate the effects of relationship processes on alcohol use.

**Higher-order interaction effects.** We tested higher-order interactions (up to three-ways) involving attachment dimensions and gender on the bidirectional associations between relationship functioning and alcohol use. As before, these interactions were of three types: interactions between attachment dimensions within a person, interactions of attachment dimensions between partners, and interactions between attachment dimensions and gender (both within a person and across partners). Due to the lack of theory and especially empirical evidence, many of these interaction tests were exploratory in nature. However, several hypotheses can be offered for specific combinations of these variables and these are briefly outlined below.

***Within-person anxiety X avoidance interactions.*** In general and consistent with prior research (Mikulincer & Shaver, 2007), we expected the adverse effects of heavy alcohol use on relationship functioning to be strongest among insecure individuals (i.e., those high in both anxiety and avoidance), and perhaps neutralized among secure individuals (i.e., those who are low in both dimensions). Likewise, we expected the negative effects of drinking apart to be greatest among highly insecure individuals, whereas the beneficial effects of drinking together should be greatest among secure individuals.

Similarly because secure individuals have more adaptive ways of coping with relationship difficulties, we expected the association between negative relationship experiences and alcohol use to be attenuated. The situation for drinking with the partner is more complex. To the extent that drinking with one's partner is a potentially adaptive way to strengthen a relationship, we expected the association between negative relationship experiences and drinking with one's partner to be stronger among securely

attached individuals. However, individuals high in anxiety and low in avoidance might also drink with their partners but for different reasons (e.g., reassurance seeking). Avoidant individuals were not expected to drink with their partner regardless of the antecedent conditions.

***Cross-partner attachment interactions.*** Based on the previously discussed rationale for the effects of different possible cross-partner pairings, we expected that the adverse effects of alcohol use and of drinking apart on relationship functioning would be strongest among insecure pairings, and that these effects may be ameliorated among couples with at least one secure partner. Likewise we expected that the effects of poor relationship functioning on alcohol use would be exacerbated among couples with two insecure partners, and weakened among couples with at least one secure partner.

***Gender differences.*** Although gender differences have been found in the simple associations between attachment dimensions and both relationship and alcohol-related outcomes, it is not clear whether and if so how these might extend to more complex, higher-order interactions. Thus, although these interactions will be tested, no specific predictions are offered for either gender X attachment X alcohol predicting relationship functioning or for gender X attachment X relationship functioning predicting alcohol outcomes.

## CHAPTER 2: METHODS

### **Participants**

Eighty-one heterosexual romantic couples were recruited via newspaper advertisements, flyers, and Introductory Psychology courses from a large Midwestern university community. Participants were 90% Caucasian, 4% African-American, and 6% other races. Average age was similar for men (20.9 years) and women (20.1 years), with a range of 18 to 47 years across all participants. Most participants were college students (91.3%), and were under the age of 21 (73.2%). Despite the fact that drinking is illegal for those under 21, the present sample closely resembles the age composition of most alcohol studies using predominantly college student samples (Dowdall & Wechsler, 2002). Most couples (90%) considered themselves as “seriously dating;” seven couples (8.5%) were married and one couple described themselves as “casually dating.” On average, couples had been together for almost 2 years.

The present study used data from the subset of 69 couples where at least one couple member reported drinking during the diary phase of the study. Not surprisingly, individuals who were dropped drank significantly less often over the past six months than those who were retained; means = 2.12 vs. 5.00, on a 1 to 9 scale,  $t(79) = -6.114$ ,  $p < .001$ . Finally, in 56 of the 69 retained couples, both partners drank during the course of the diary study, whereas only one couple member drank in the remaining 13 couples.

### **Study Design and Procedure**

Participants completed three different phases of the study, including an introductory interview, a three-week diary phase, and an exit interview. Depending upon

limits imposed by the academic calendar (i.e. holidays, breaks), couples participated in the diary phase for either 19 or 23 days. We chose roughly three weeks as the upper limit because pilot data showed that compliance with a similar study protocol dropped off dramatically at around three weeks of participation (Cooper, 2002a).

All participants attended an introductory session on the University of Missouri-Columbia campus. The study protocol was explained to the participants, and sample questions from the initial interview were presented to participants to review before the study began. Participants then completed a comprehensive computerized initial interview, which assessed demographics, relationship information, attachment style, and a host of psychological variables. The initial interview was administered on a Microsoft Windows platform using the Ci3 Computer Interviewing System (Sawtooth Software, 1994). Once participants were finished with the interview they provided the researchers with morning and evening times that would be convenient for them to complete daily reports. These times were later used to program alarms on the Palm Pilots to remind participants to complete morning and evening reports each day. Finally, participants scheduled a time to come into the researchers' lab to receive their Palm Pilots and attend a training session on the use of the Palm Pilots to complete their daily reports.

During the Palm training sessions, participants were instructed on how to operate the Palm Pilots, and how to maneuver through the menus in order to access the correct questionnaire. In case participants encountered difficulties in the field, laminated information cards were provided that included common troubleshooting solutions as well as complete contact information for the researchers in case assistance was needed. Participants also reviewed the questions they would be answering on a daily basis in

order to insure they were comfortable with the content of the items. They were then allowed to inform the researchers of any items they did not want to answer. However, none of the participants indicated discomfort with any of the items.

To protect participants' confidentiality, a three-digit identification number was issued that acted as a password necessary to activate the Palm Pilot, and allowed access to the daily questionnaires. Moreover, participants were shown that once a daily report had been completed and stored in the Palm Pilot, that it could not be reopened by anyone, including the participant, to view (or change) the answers. Participants were further instructed not to ask probing questions of their partner regarding his or her answers to the questionnaires, or for partners to discuss specific answers in detail. When the training session was finished, the diary phase of the study began immediately.

Every morning and evening, at a time previously provided by the participants, the Palm Pilot's internal alarm signaled participants to answer a brief questionnaire appropriate for that time of day. Daily questionnaires were administered using Pendragon Forms 4.0 (Pendragon Software, 2004), and administered on m100 model (PalmOS 3.5.1) and Zire model (PalmOS 4.1) handheld computers by the Palm corporation. To minimize potential data loss due to unforeseen problems (e.g., the dropping or accidental washing of a Palm Pilot), participants were instructed to bring their Palm Pilots into the lab once a week so that the stored data could be backed up on a main computer. Finally, at the end of the diary phase, participants returned their Palm Pilots to the lab, completed a computerized final interview, and were debriefed.

Non-student participants were paid a base amount of \$35 each for approximately three weeks of participation in the study. Student participants were given full experiment

participation credit for the semester in exchange for completing the first week of the study. Thereafter, student participants were paid a base amount of \$25 for the remainder of the study. In order to promote compliance with the completion of daily reports, participants were offered up to \$50 in addition to their base pay. The total amount of additional pay was based on the percentage of each participant's completed reports at the end of the study.

### **Measures**

Data for the present study were taken from the initial interview, a daily morning questionnaire, and a daily evening questionnaire. The following will detail the important scales and items used for this study in relation to the assessment in which they appeared. Associations between proposed study variables can be seen in Table 1.

**Attachment Orientation.** Attachment style was assessed in the initial interview using Brennan et al.'s (1998) Experience in Close Relationships (ECR) scale. The ECR assesses attachment on two theoretically orthogonal, continuous dimensions of Anxious and Avoidant attachment. A representative example of an Anxious item would be "I worry that my partner doesn't care about me as much as I care about them," while an example of an Avoidant item would be "I don't feel comfortable opening up to romantic partners." Furthermore, as recommended by Fraley, Waller, and Brennan (2000), we factor analyzed the measure to insure that it conformed to the expected structure. Results yielded two factors, with each item loading on its intended construct at or above .32. The scales were reliable with alphas greater than or equal to .87 and only weakly correlated ( $r = .12$ ), as expected. These items can be seen in Appendix A.

**Daily Alcohol Use.** Individuals reported on their prior day's alcohol use in the morning questionnaire (alcohol items from this questionnaire can be seen in Appendix B). Single items were used to assess the amount of alcohol consumed (in terms of a standard drink, defined as 12 ounces of beer, 4 ounces of wine, or 1 ounce of liquor), and the extent to which the respondent drank to intoxication (on a 1 to 5 scale where 1 = "Not at all" and 5 = "Extremely"). Outlying values for a small number of reports ( $n = 25$ ,  $< 1\%$ ) for quantity (generally values  $> 2$  standard deviations above the mean) were replaced by the highest non-outlying value in the distribution in order to improve normalcy of the distributions. The two items, which were highly correlated ( $r = .94$ ), were then combined to yield a single quantity index. Male and female quantity composites were correlated  $r = .59$  at the daily level.

Participants were also asked with whom the drinking occurred (e.g., partner, same-sex friend, opposite-sex friend, etc.). Responses were scored 1 if the individual drank with his or her partner and 0 if not. Male and female reports of drinking together were moderately correlated at  $r = .52$ , and were therefore treated as separate variables. Although the moderate value of this correlation might seem surprising, the majority of discrepant reports (92 of 160) involved occasions where one person reported drinking with the partner but the partner did not drink.

Drinkers filed 518 total drinking reports, or 5.38 drinking reports per person on average. Just over 5 drinks on average ( $M = 5.31$  drinks; range = 1 - 30) were consumed per drinking occasion. Although some individual values appear unusually high, drinking large quantities (e.g., up to 46 drinks) has been reported in previous studies of college student drinking (Gruenewald, Johnson, Light, & Saltz, 2003). Moreover, there is

growing evidence that college students often surpass the standard 5+ binge drinking threshold (e.g., White, Kraus, & Swartzwelder, 2006). As expected, average consumption was higher for men (6.23 drinks) than for women (4.44 drinks),  $t(55) = 3.880, p < .001$ . Finally, women were more likely to report drinking with their partner than men; 63% of all female drinking reports occurred with their partner vs. only 52% of reports among men,  $\chi^2(1) = 25.956, p < .001$ .

**Daily Relationship Functioning.** Two measures of relationship functioning were assessed each day – one assessing positive aspects of relationship functioning and one assessing negative aspects. Intimacy was assessed in the morning report, whereas jealousy was included in the evening report. Relevant relationship items from the morning and evening questionnaires can be seen in Appendix C.

**Intimacy.** Participants were asked how happy, in love with, and close to their partners they felt at the time of the report, on a 1 to 5 scale with 1 = “Not at all” and 5 = “Extremely.” These items formed a highly reliable composite ( $\alpha = .91$ ). Additionally, male and female reports of intimacy were correlated at  $r = .27$ , and women reported higher intimacy on average than men (4.45 vs. 4.26),  $t(68) = -2.174, p < .05$ .

**Jealousy.** Finally, participants were asked about feelings of jealousy that occurred during the day based on perceptions of the partner’s behavior. Two items assessed whether one’s partner seemed either emotionally close to, or physically or sexually interested in, someone else that day in a way that made the participant jealous. Three follow-up items then assessed how hurt or angry the participant was because of this (these) jealousy incident(s), and how strong their jealous feelings were that day. All items were answered on a 5-point scale where 1 = “Not at all” and 5 = “Extremely.” In the

current sample, jealousy reports were correlated between men and women within couple at  $r = .27, p < .05$ , and men and women reported approximately equal numbers of jealousy reports over the course of the diary study (2.42 vs. 1.97 reports, respectively;  $t(68) = 1.03, ns$ ). For analytic purposes, preliminary analyses were conducted in which effects for emotional jealousy and sexual jealousy events were modeled separately based on theoretical distinctions between the two (Levy & Kelly, 2010). In general, results from emotional jealousy models were very similar to those from sexual jealousy models. Thus, a single mean composite of all five jealousy items was used in the analyses, which had good reliability ( $\alpha = .87$ ).

### **Overview of Analyses**

The data from this study are structured hierarchically. Daily reports between couple members were matched on the actual day in which the events occurred (modeled at Level 1), and were then nested under individuals (modeled at Level 2). Two-level structures are generally preferred over three-level structures (i.e., daily reports nested within individuals nested within couples) because they not only control for dependencies between couple members, but also enable the temporal matching of male and female partner reports (Laurenceau & Bolger, 2005).

The Actor-Partner Interdependence Model (APIM; Kenny, Kashy, & Cook, 2006) was tested using the Mixed procedure in SPSS for all analyses predicting continuous outcomes, and PROC GLIMMIX in SAS for all analyses predicting dichotomous outcomes. The APIM tests actor and partner effects simultaneously, while also allowing for a direct test of gender differences in intercepts and gender interactions. Additionally, in data such as these, autocorrelation (i.e., correlation among error variances of like

variables reported across time) can result in biased parameter estimates (Kenny, et al., 2006). However, the present analyses, which combine essential features of the APIM and cross-lagged models (by controlling for prior reports of the outcome) represent best, albeit imperfect, practice with regard to this issue (see Kenny et al., 2006, for a more complete discussion of autocorrelation).

**Hypotheses Part I: Testing the between-subjects (main) effects of attachment style on daily alcohol use and relationship functioning.** To test these hypotheses, both the actor and partner effects of attachment anxiety and attachment avoidance were simultaneously estimated on average (collapsed across all days) amount of alcohol consumed. In a parallel series of analyses, effects of both actor and partner attachment measures were simultaneously estimated on the two indices of relationship functioning (intimacy and jealousy), each averaged across all days of participation.

Thus, for example, variants of the following model were used to test the effects of attachment (Level 2) on daily alcohol use and relationship functioning, aggregated at Level 1:

$$\text{Intimacy}_{jk} = \pi_{0jk} + \pi_{1jk}(\text{Actor Anxiety}) + \pi_{2jk}(\text{Actor Avoidance}) + \pi_{3jk}(\text{Partner Anxiety}) + \pi_{4jk}(\text{Partner Avoidance}) + \pi_{5jk}(\text{Gender}) + e_{jk} \quad (\text{Eq. 1})$$

where “Intimacy” is person  $j$  of couple  $k$ ’s average level of intimacy as predicted by actor and partner individual differences in anxious and avoidant attachment, respectively, and gender (Level 2), and  $e_{jk}$  is a random residual component.

Finally, because hypotheses include hypothesized interactions between attachment and gender, additional equations were estimated to which the interaction of attachment with gender will be added:

$$\begin{aligned} \text{Intimacy}_{jk} = & \pi_{0jk} + \pi_{1jk}(\text{Actor Anxiety}) + \pi_{2jk}(\text{Actor Avoidance}) + \pi_{3jk}(\text{Partner} \\ & \text{Anxiety}) + \pi_{4jk}(\text{Partner Avoidance}) + \pi_{5jk}(\text{Gender}) + \pi_{6jk}(\text{Actor Anxiety X} \\ & \text{Gender}) + \pi_{7jk}(\text{Actor Avoidance X Gender}) + \pi_{8jk}(\text{Partner Anxiety X Gender}) + \\ & \pi_{9jk}(\text{Partner Avoidance X Gender}) + e_{jk} \end{aligned} \quad (\text{Eq. 2})$$

**Hypotheses Part II: Testing the moderating effects of attachment style on the pathways between alcohol use and relationship functioning (i.e., cross-level interactions).** To test these hypotheses, actor and partner attachment styles and attachment X alcohol use or attachment X relationship functioning interactions were added to models testing the associations between alcohol use and relationship functioning. Separate analyses were conducted to estimate the moderating effects of attachment style on the bidirectional effects between alcohol use and relationship functioning. A representative model predicting relationship functioning from prior alcohol use was set up as follows:

$$\begin{aligned} \text{Actor Next Day Morning Intimacy}_{jkt} = & \pi_{0jk} + \pi_{1jk}(\text{Actor Current Day Morning} \\ & \text{Intimacy})_{jkt-1} + \pi_{2jk}(\text{Gender})_{jk} + \pi_{3jk}(\text{Actor Current Day Quantity})_{jkt-1} + \pi_{4jk}(\text{Partner} \\ & \text{Current Day Quantity})_{jkt-1} + \pi_{5jk}(\text{Actor Current Day Drink-with-Partner})_{jkt-1} + \\ & \pi_{6jk}(\text{Partner Current Day Drink-with-Partner})_{jkt-1} + \pi_{7jk}(\text{Actor Anxiety})_{jkt-1} + \\ & \pi_{8jk}(\text{Partner Anxiety})_{jkt-1} + \pi_{9jk}(\text{Actor Avoidance})_{jkt-1} + \pi_{10jk}(\text{Partner Avoidance})_{jkt-1} \\ & + \pi_{11jk}(\text{Actor Current Day Quantity x Actor Anxiety})_{jkt-1} + \pi_{12jk}(\text{Partner Current} \\ & \text{Day Quantity x Partner Anxiety})_{jkt-1} + e_{jkt} \end{aligned} \quad (\text{Eq. 3})$$

where “Actor Next Day Intimacy” is person  $j$  of couple  $k$ 's reported level of intimacy on day  $t$ ;  $\pi_{0jk}$  is the predicted value of intimacy for person  $j$  when all other variables equal zero on day  $t-1$ ;  $\pi_{1jk}$  is the partial within-person regression coefficient for person  $j$ 's level

of intimacy on day  $t-1$ ;  $\pi_{2jk}$  is the partial regression coefficient for person  $j$ 's gender;  $\pi_{3jk}$  and  $\pi_{4jk}$  are the partial within-person regression coefficients for actor and partner quantity, respectively, by person  $j$  on day  $t-1$ ;  $\pi_{5jk}$  and  $\pi_{6jk}$  are the partial within-person regression coefficients for whether person  $j$  drank with his or her partner, respectively, on day  $t-1$ ;  $\pi_{7jk}$  and  $\pi_{8jk}$  are partial regression coefficients for actor and partner anxiety, respectively, for person  $j$ ;  $\pi_{9jk}$  and  $\pi_{10jk}$  are partial regression coefficients for actor and partner avoidance, respectively, for person  $j$ ;  $\pi_{11jk}$  and  $\pi_{12jk}$  are partial within-person regression coefficients for actor and partner quantity x anxiety interactions, respectively, for person  $j$ ; and  $e_{jkt}$  is a random residual component.

An example of a model predicting alcohol use from prior relationship functioning is:

$$\begin{aligned}
 \text{Actor Current Day Quantity}_{jkt} = & \pi_{0jk} + \pi_{1jk}(\text{Actor Prior Day Quantity})_{jkt-1} + \\
 & \pi_{2jk}(\text{Gender})_{jk} + \pi_{3jk}(\text{Actor Current Day Morning Intimacy})_{jkt} + \pi_{4jk}(\text{Partner Current} \\
 & \text{Day Morning Intimacy})_{jkt} + \pi_{5jk}(\text{Actor Current Day Drink-with-Partner})_{jkt} + \\
 & \pi_{6jk}(\text{Actor Anxiety})_{jkt-1} + \pi_{7jk}(\text{Partner Anxiety})_{jkt-1} + \pi_{8jk}(\text{Actor Avoidance})_{jkt-1} + \\
 & \pi_{9jk}(\text{Partner Avoidance})_{jkt-1} + \pi_{10jk}(\text{Actor Current Day Morning Intimacy x Actor} \\
 & \text{Anxiety})_{jkt-1} + \pi_{11jk}(\text{Partner Current Day Morning Intimacy x Partner Anxiety})_{jkt-1} \\
 & + e_{jkt} \tag{Eq. 4}
 \end{aligned}$$

Additionally, based on the attachment literature (Mikulincer & Shaver, 2007), interactive effects of within-person (i.e., one's own anxiety X avoidance) and within-couple, across partners (e.g., actor anxiety X partner anxiety) attachment were tested. Furthermore, considering that models tested interactive effects of attachment X quantity and attachment X quantity X gender, it is easy to conceive of theory-driven 4-way or 5-

way higher order interactions that are not readily statistically testable or interpretable (e.g., actor anxiety X actor avoidance X partner anxiety X actor quantity X gender). Thus, to ensure model stability and effective interpretation of effects, we only tested up to 3-way interactions in all models.

Although issues specific to individual analyses are discussed as they come up, a number of general procedures and analytic decisions apply across all analyses and are discussed here. First, as recommended by Raudenbush and Bryk (2002) and others (Enders & Tofighi, 2007; Nezlek, 2001), Level 1 relationship predictor variables were centered on the person's own mean when main effects were estimated. For analyses in which alcohol served as the predictor, alcohol quantity variables were centered on the grand mean, which retained information about absolute values of consumption, and higher-order terms (including interactions between two Level 1 variables) were created from these grand mean-centered variables. Second, following recommendations by Nezlek (2001), preliminary analyses were run to determine whether predictors should be estimated as random or fixed. All effects were modeled as fixed, other than the intercept and error components.

Third, control, independent, and dependent variables were selected to match as closely as possible the underlying assumptions regarding causal order among the variables. Specifically, control variables were always temporally prior to both the independent and dependent variable reports, and independent variables were always temporally prior to the dependent variable report. At the same time, we attempted to select the most proximal report available to maintain the shortest causal lag as possible.

For example, as shown in Equation 3, current day intimacy reports were used as the control because these reports were temporally prior to next day intimacy and almost certainly temporally prior to drinking, given that intimacy reports were made in the morning and drinking reports corresponded to the evening of the same day. In contrast, the temporal order between same-day relationship events and drinking, both of which could have occurred in the evening, was uncertain. For this reason, when predicting relationship events, prior day relationship events were used as the control, current day drinking as the predictor, and next day events as the outcome. Although these decisions served to maintain a clear temporal order among control, independent, and dependent variables across all analyses, the temporal lag was nevertheless consistently longer in analyses using relationship events, partner behaviors, and jealousy as predictors (all of which were assessed once daily in the evening) than for analyses using intimacy as the predictor (which was assessed in the morning).

Fourth, a number of control variables were evaluated for inclusion in the models, including a weekday (Sunday through Wednesday) vs. weekend (Thursday, Friday, Saturday) dichotomy, age, and student status. Preliminary models were run to determine whether any of our dependent variables are significantly predicted by the control variables, respectively. Only age was significantly related to alcohol outcomes, thus being included in models predicting alcohol use.

Finally, by using the APIM to test the processes of interest in the current study, which again examines actor and partner effects simultaneously, models inherently have a large number of terms. Thus, to improve stability in our models, after running a series of full models for all outcomes, a series of trimmed models were run in which non-

significant terms were dropped. Only effects that remained significant after removing non-significant terms are discussed in the results.

## CHAPTER 3: RESULTS

### **Part I: Attachment Effects on Relationship Functioning and Alcohol Use**

**Effects of attachment on relationship functioning.** Effects of attachment styles on relationship functioning are presented in Table 2.

*Anxiety main effects.* Main effects of anxiety on relationship functioning were in line with expectation. Anxiety was negatively ( $p < .10$ ) associated with feelings of intimacy, and positively associated with jealousy, though this effect was further qualified by avoidant attachment and gender, as described more fully below. Also in line with expectation, partner anxiety was positively associated with the actor's perceptions of jealousy, and this effect was not further qualified. No other main effects of partner anxiety were found.

*Avoidance main effects.* Main effects of avoidance on relationship functioning were partially in line with expectation. As expected, avoidance was negatively associated with feelings of intimacy, and this effect was stronger than the corresponding effect for anxiety. However, contrary to expectation, it was unrelated to feelings of jealousy. Moreover, no main effects of partner avoidance on relationship functioning were found.

*Within-person interactive effects of attachment on relationship functioning.* Hypotheses regarding within-person attachment interactions predicting relationship functioning were partially supported. Anxiety and avoidance interacted to predict jealousy such that high anxiety, high avoidance was associated with the highest levels of jealousy. However, this interaction was further qualified by gender, as described more

fully below. Finally, no other anxiety X avoidance interactions were found predicting relationship functioning.

***Cross-partner interactive effects of attachment on relationship functioning.***

Contrary to expectation, no cross-partner attachment interactions on relationship functioning were found.

***Gender differences.*** Contrary to expectation, gender differences in the effects of attachment on relationship functioning were weak. In fact, only one marginal effect was found out of 18 effects tested (data not tabled), a finding easily observed by chance alone.

***Effects of attachment on alcohol use.*** Results of analyses predicting alcohol outcomes are summarized in Table 3. As shown, and contrary to expectation, there were no significant main, within-person interactive, or cross-partner interactive effects of anxiety or avoidance on alcohol outcomes. However, gender interacted with attachment to predict alcohol outcomes, as described more fully below.

***Gender differences.*** Three gender X attachment style interactions were found predicting alcohol outcomes (data not tabled). First (see Figure 1), there was a significant actor anxiety X actor avoidance X actor gender interaction predicting quantity consumed. Plotting the interaction showed that only women low in avoidance drank significantly more as a function of increasing levels of attachment anxiety, whereas an opposite but non-significant pattern was found for women high in avoidance and men. Second, as shown in Figure 2, a marginally significant actor anxiety X partner anxiety X actor gender interaction was found predicting the actor's quantity consumed. Attachment anxiety predicted marginally greater alcohol use among women, but only if their partner was low in attachment anxiety. Other individuals showed an opposite pattern. Thus,

consistent with prior findings showing stronger adverse effects for anxious women, only anxious women drank more than their low anxiety counterparts, though this effect was in both cases conditional on other factors. Plotting the final interaction (i.e., actor avoidance X partner anxiety X actor gender predicting the actor's probability of drinking with the partner; not shown) revealed that none of the simple slopes was significant, and moreover that the pattern of simple slopes was not readily interpretable.

## **Part II: Attachment Moderation of the Bidirectional Associations between Alcohol Use and Relationship Functioning**

Effects of alcohol use on relationship functioning and moderating effects of attachment on this link are shown in Table 4.

**Effects of alcohol use on relationship functioning.** Consistent with expectation, partner quantity negatively predicted next-day intimacy and drinking with the partner positively predicted next-day intimacy. Moreover, both actor and partner quantity predicted next-day jealousy. Contrary to prediction, however, partner quantity was negatively (not positively) related to next-day jealousy.

### **Moderation of the alcohol use → relationship functioning link.**

*Anxiety X alcohol use predicting relationship functioning.* As shown in the second panel of Table 4, three significant anxiety X drink-with-partner interactions were found, two predicting intimacy and one (with actor reports of drinking-with-partner) predicting jealousy. Plotting the intimacy interactions revealed identical patterns for actor and partner reports of drinking with the partner. As shown in Figure 3 (top panel), and consistent with expectation, actors who drank apart from their partner experienced steep decrement in next-day feelings of intimacy, but only if they were highly anxious. Low

anxious individuals experienced no such decrement when they drank apart compared with occasions when they drank with their partner. As shown in the bottom panel of Figure 3, an identical pattern was found for actor's feeling of next-day intimacy when the partner drank apart from the actor. Additionally, as shown in Figure 4, anxiety interacted with drinking with the partner to predict jealousy such that drinking with (vs. apart from) the partner was associated with significantly more jealous feelings the next day for those who were high (but not low) in anxiety. Taken together, these results suggest that the main effects of anxiety on intimacy and jealousy observed in Table 2 are conditional on day-to-day drinking experiences. Low levels of intimacy were found among highly anxious individuals, or among individuals with highly anxious partners, only when the individual or his or her partner drank apart. High levels of jealousy were found only among high anxious individuals who drank with their partner.

Finally, a partner anxiety X partner quantity interaction was found predicting actor's feelings of jealousy. Plotting this interaction (see Figure 5) showed that individuals with highly anxious partners reported less jealousy the day after their partners drank heavily than they did on days after the partner did not drink or drank lightly. Although this pattern was not specifically predicted, anxious partners may express even stronger levels of commitment to and need for the actor when intoxicated, thus diminishing any possible feelings of jealousy the actor might have. However, the fact that the absolute levels of jealousy are far below what might be considered normative (i.e., the levels reported by more secure individuals) raises the possibility that this is not an adaptive process and indeed may reflect a form of disengagement from the partner.

*Avoidance X alcohol use predicting relationship functioning.* An avoidance X quantity consumed interaction was found predicting feelings of jealousy for both actors and partners. Although both interactions were further qualified by anxiety, plotting the two-way interactions revealed that individuals who were highly avoidant felt more jealous on days after they drank heavily whereas no such increase was observed among low avoidant individuals (see Figure 6, top panel). Interestingly, heavy consumption by an avoidant partner led to decreased feelings of jealousy the next day, whereas heavy consumption by a non-avoidant partner had no such effect (see Figure 6, bottom panel). Thus, in both cases, effects were found only among high avoidant individuals or among individuals with high avoidant partners. Importantly, however, actor and partner effects were opposite in direction.

Additionally, a marginal partner avoidance X partner quantity interaction predicting next-day actor intimacy was found. As shown in Figure 7, actor intimacy significantly decreased as a function of partner consumption only if the partner was low but not high in avoidance. Indeed individuals whose partners were high in avoidance reported lower intimacy than individuals low in avoidance, but this difference was observed primarily on days when the partner did not drink or drank lightly. Finally, a marginal avoidance X drink-with-partner interaction was found predicting next-day intimacy. As shown in Figure 8, individuals low in avoidance appeared to be more positively affected by drinking with the partner and more negatively affected by drinking apart from the partner than did individuals high in avoidance, who, as expected, were unaffected by drinking context.

***Within-person anxiety X avoidance X alcohol use predicting relationship***

***functioning.*** Two anxiety X avoidance X quantity consumed interactions were found predicting feelings of jealousy, one for actor effects and one for partner effects. Plotting interactions revealed the predicted effect of highly insecure attachment for the actor. As shown in Figure 9, and consistent with predictions, only individuals who were high in both anxiety and avoidance reported more jealous feelings as a function of quantity consumed the day before. In contrast, the partner anxiety X partner avoidance X partner quantity interaction failed to conform to the expected pattern (plot not shown). Specifically, significant decrements in next-day jealousy were found for increasing partner consumption but only among those whose partners were either high in anxiety and low in avoidance or high in avoidance and low in anxiety. No effects were found for partner consumption when partners were either secure (low in both) or highly insecure (high in both).

***Cross-partner attachment interactions X alcohol use predicting relationship***

***functioning.*** As shown in the bottom panel of Table 4, four cross-partner attachment X quantity interactions were found: one for actor quantity and three for partner quantity. First, an actor anxiety X partner anxiety X actor quantity interaction was found predicting next-day feelings of jealousy. As shown in Figure 10, highly anxious individuals felt significantly more jealous the day after drinking heavily when their partner was low vs. high in anxiety. Quantity consumed had no effects on feelings of jealousy for couples with other attachment combinations.

Second, an actor anxiety X partner anxiety X partner quantity consumed interaction was found predicting actor intimacy. As shown in Figure 11, individuals did

not experience any change in their feelings of intimacy as a function of how much their partner drank the day before as long as their partner's level of attachment anxiety was similar to theirs (i.e., both partners were either low in anxiety or high in anxiety). However, if the partner's anxiety level was mis-matched from the actor (i.e., the partner was low in anxiety but the actor was high in anxiety or vice versa), the actor experienced significant declines in feelings of intimacy the more the partner drank. Taken together with the effect shown in Figure 10, these effects suggest that mis-matched levels of anxiety within couple are associated with more adverse outcomes relative to couples who are matched in their anxiety levels, and that, contrary to expectation, one partner's secure attachment does not necessarily ameliorate the anxious attachment of the other partner in all situations.

Third, as shown in Figure 12 (top panel), an actor anxiety X partner anxiety X partner quantity interaction was found predicting jealousy. Only highly anxious actors with highly anxious partners experienced significantly less jealousy as a function of increased partner alcohol consumption the day before. Although anxious-anxious pairings are usually considered to be detrimental to healthy relationship functioning (Mikulincer & Shaver, 2007), these results suggest that increased alcohol consumption by the partner might actually buffer feelings of jealousy in couples in which both members are highly anxious.

Finally, an actor anxiety X partner avoidance X partner quantity interaction predicting jealousy was also found. As shown in Figure 12 (bottom panel), individuals high in attachment anxiety whose partners were high in avoidance showed significant decreases in feelings of jealousy the more their partner drank the day before. Similar to

the plot shown in the top panel of Figure 12, alcohol use leads to lower jealousy, though only among highly anxious individuals, and again this effect is conditional on another factor.

**Gender differences.** Only two out of eight gender interactions were significant (data not tabled). Avoidance interacted with quantity and gender to predict feelings of jealousy. As shown in Figure 13, only men high in avoidance experienced significant increases in jealous feelings as a function of increasing alcohol use the day before. This pattern is consistent with the expectation that the adverse effects of avoidance effects would be stronger among men than women. In addition, a marginally significant actor anxiety X actor quantity X gender interaction was found predicting next-day intimacy. Plotting this interaction (not shown) showed that potential beneficial effects of alcohol use on intimacy were found only among low anxious women ( $b = -.04, p < .10$ ). Simple slopes among men and among high anxious women were negative, though not significant.

**Effects of relationship functioning on alcohol use.** Effects of relationship functioning on alcohol use and moderating effects of attachment on this link are shown in Table 5. As found previously (Levitt & Cooper, in press), lower feelings of intimacy among actors (but not partners) in the morning predicted increased drinking with the partner and marginally increased consumption later that same day. Additionally, as expected, jealousy among the actor (but not partner) positively predicted drinking with the partner the next day. However, neither actor nor partner feelings of jealousy predicted consumption.

**Moderation of the relationship functioning → alcohol use link.**

***Anxiety X relationship functioning predicting alcohol use.*** As shown in Table 5, anxiety significantly interacted with both actor and partner intimacy to predict drinking with the partner. As shown in Figure 14, individuals who were high but not low in anxiety drank in apparent response to feelings of low intimacy. As shown in Figure 15, and in seeming contrast to the actor effect, individuals were the most likely to drink with their partner when their partner was low in anxiety and feeling close to them.

***Avoidance X relationship functioning predicting alcohol use.*** Only one moderating effect of avoidance was found for relationship functioning predicting next-day drinking with the partner. As shown in Figure 16, individuals low in avoidance were more likely to drink with their partner following days in which they were more jealousy. No effect of jealousy on drinking with the partner was found for individuals high in avoidance, suggesting that highly avoidant individuals do not perceive drinking with the partner as a beneficial relationship mechanism.

***Within-person anxiety X avoidance X relationship functioning predicting alcohol use.*** Two significant within-person interactions predicting drink with partner were found, one for actor avoidance X actor anxiety and the other for partner avoidance X partner anxiety. Plotting the actor attachment interaction (not shown) revealed that the slope relating intimacy to the probability of drinking with the partner was positive for secure individuals and negative for all other attachment combinations. However, none of the simple slopes was significant or marginally so. Plotting the partner interaction (also not shown) revealed that individuals with secure partners (i.e., low on both dimensions) were more likely to drink with their partner following days when their partner reported

high vs. low levels of jealousy ( $b = .96, p < .01$ ). None of the other simple slopes was significant ( $bs \leq .02, ns$ ).

***Cross-partner attachment interactions X relationship functioning predicting alcohol use.*** Only one of 24 cross-partner interactions tested was significant, a finding that could easily be due to chance alone. Moreover, plotting the interaction (not shown) failed to reveal a meaningful pattern of simple slopes.

***Gender differences.*** Only one marginally significant gender interaction was found for actor anxiety X actor intimacy X gender predicting quantity. Plotting this interaction (see Figure 17) revealed an expected pattern in which only women low in anxiety drank significantly less the closer they felt to their partner.

## CHAPTER 4: DISCUSSION

### **Summary of Results**

The current study examined the main effects of attachment styles on alcohol use and relationship functioning, along with moderating effects of attachment on the bidirectional associations between alcohol use and relationship functioning in heterosexual romantic couples. In general, the results of the current study painted a complex picture of interdependent relationship processes and person X environment interactions that as a whole support and extend the extant literature on alcohol use, romantic relationships, and adult romantic attachment.

Consistent with prior research, and as expected, we found that higher levels of anxious and avoidant attachment, respectively, predicted poorer relationship functioning on average (see Table 2). We found weak evidence of interactive attachment effects within-person predicting jealousy, whereas we found no evidence of cross-partner attachment interactions. However, as discussed more fully below, attachment effects on relationship functioning were shown to be more complex than past research suggests, as the expression or manifestation of these effects also depended on recent patterns of alcohol use by both couple members.

Contrary to prediction, we failed to find any main effects of attachment on patterns of daily alcohol use (see Table 3). Moreover, we also found no within-person or cross-partner interactions of attachment on alcohol use. As described more fully below, our data suggest that attachment shapes patterns of alcohol use only in complex combination with everyday relationship experiences.

Findings also extend previous research by illustrating for whom and when the bidirectional effects of alcohol use and relationship functioning occur, particularly based on individual differences in attachment styles. Because the moderating effects of attachment found (see Tables 4 & 5) were complex and depended on multiple factors, they are discussed more fully below as they pertain to specific questions and implications.

Comparing different types of effects observed as well as different directions of predicted effects provides an enlightening picture of the current study's results. Considering main and interaction effects (not counting cross-partner interaction effects), there were comparable numbers of actor and partner effects (18 vs. 14 total effects). However, these effects painted contrasting pictures, as there was noticeable asymmetry between many actor and partner effects such that effects were not always similar in direction or meaning. Taken together, this suggests the importance of assessing reports of both couple members as, from the perspective of the individual, one's own and one's partner's effects on relationship functioning and alcohol use are clearly psychologically distinct.

Additionally, more effects were found on relationship outcomes as there were on alcohol outcomes. Specifically, three times as many main effects were found for attachment or alcohol use predicting relationship outcomes than there were for attachment or relationship functioning predicting alcohol outcomes (9 vs. 3 effects). Furthermore, over twice as many moderation effects were found for attachment X alcohol use predicting relationship outcomes than there were for attachment X relationship functioning predicting alcohol outcomes (14 vs. 6 effects). This not only suggests that the

effects of attachment styles are conditional, but also that the moderating effects of attachment styles are more conditional when predicting relationship outcomes compared to alcohol outcomes.

Examining attachment effects (both main and moderating effects) more specifically, slightly more effects were found for attachment anxiety than there were for attachment avoidance (9 vs. 6). Assuming this difference is reliable and not due to chance, it could be attributable to the smaller presence of highly avoidant individuals in our sample compared to highly anxious individuals. It could also be that effects of attachment anxiety are highly observable in relationships (Simpson et al., 2006). Additionally, as expected, interactive effects of anxiety and avoidance were found both within-person (5 effects) and within-couple, across partners (5 effects).

Finally, contrary to expectations, we did not find a strong and consistent pattern of gender differences. Of the 5 gender effects discussed above, 4 interactions revealed effects only among women. This pattern is similar to results found in our previous study (Levitt & Cooper, in press), in which effects were generally stronger among women, and only women drank with their partner in response to relationship processes. As we concluded in our earlier study (Levitt & Cooper, in press), the current results further suggest that all aspects of experience are more strongly linked with romantic relationship functioning among women than they are for men.

### **Implications for Theory and Research**

Results of the current study have a number of important implications for existing theory and future research. First, despite replicating some effects of attachment previously shown in the literature, the current study failed to find several hypothesized

attachment effects. For example, as mentioned above, no main effects of attachment were found predicting alcohol use outcomes. These results are counter to those of other studies (e.g., Brennan & Shaver, 1995) finding that both anxiety and avoidance predict increased alcohol use. One explanation for this difference could be that effects of attachment differ for those in vs. out of romantic relationships. The sample used in Brennan and Shaver's work was composed of college students not necessarily in committed relationships. It could be that individuals who self-select into committed relationships on average have relatively more secure attachment styles. Thus, some main effects of attachment insecurity might not be found in a sample such as ours.

Second, the current study provides further support for the importance of assessing the context in which drinking occurs in romantic relationships (Levitt & Cooper, in press; Roberts & Linney, 2000). For example, highly anxious individuals experienced a significant decline in felt intimacy after drinking apart from their partner compared to with the partner (see Figure 3, top panel). Highly anxious individuals also felt more jealousy on days after drinking with their partner compared to days on which they drank apart (see Figure 4). These findings not only illustrate the sensitivity of attachment processes to drinking context, they also highlight the ambivalence characteristic of anxious attachment in which highly anxious individuals have a strong desire for closeness with their partner (Mikulincer & Shaver, 2007), yet interacting with the partner often amplifies their insecurities thus leading to further relationship problems (Simpson et al., 2006). Future research could extend this work to consider other outcomes beyond jealousy and intimacy. Perhaps drinking with the partner improves positive aspects of relationships for anxious individuals but magnifies negative ones. Or perhaps there is a

unique set of both positive and negative relationship dynamics that are only affected among anxious individuals.

Interesting attachment differences were also found for the likelihood of drinking with the partner in response to relationship processes. For instance, individuals high (but not low) in anxiety were more likely to drink with their partner after feeling distant from the partner earlier that day, as expected (see Figure 14). Yet in seeming contrast to this effect, we also found that individuals were more likely to drink with their partner on days when the partner reported feeling more closeness, but only if the partner was low in attachment anxiety (see Figure 15). Perhaps individuals who are low in anxiety communicate their feelings of closeness to their partner (either consciously or non-consciously) better than those high in anxiety, thus encouraging the partner to engage in activities with them, including drinking together.

The adaptive characteristics of relatively more secure attachment are further seen among individuals low in avoidance, who were more likely to drink with their partner on days after they felt highly jealous (see Figure 16). As has been previously theorized (e.g., Levy & Kelly, 2010), secure relative to insecure individuals should recognize feelings of jealousy and effectively deal with them by communicating them to the partner so that the partner can avoid jealousy-provoking behaviors in the future. Perhaps drinking with the partner following bouts of jealousy is one way in which secure individuals can seek reassurance and also communicate their needs. Assuming that secure individuals are acting in response to a conscious or implicit activation of the attachment system, future research could directly assess the thoughts and motivations of secure individuals if and

when they perceive jealousy-related incidents to better understand this relationship process.

Third, although gender differences were not found to the extent they were expected, effects found do extend and support prior research. As mentioned, our previous work (Levitt & Cooper, in press) suggested that alcohol use was more closely tied to the relationships of women than it was for men. Extending this prior work, as well as previous research suggesting stronger effects of attachment anxiety among women than men, results of the current study suggest, dependent on other factors, that only women high (vs. low) in anxiety drink more. Additionally, the current study found support for the previously documented effects of attachment avoidance, particularly for men, on increased jealousy (e.g., Levy & Kelly, 2010) by showing that these effects become stronger as avoidant men drink more heavily (see Figure 13). Although only one male avoidance effect was found, it nevertheless extends prior knowledge by suggesting that increased alcohol consumption further magnifies this effect. Future research of alcohol use in romantic relationships should include an examination of attachment styles. Otherwise, studies of alcohol use and romantic relationship functioning risk drawing erroneous conclusions as to the processes at work.

Finally, results of the current study highlight the importance of assessing couple-level interactive effects of attachment. For instance, some of the current results (e.g., Figures 10 & 11) suggest that couples that are matched in their attachment styles (i.e., both members are low in anxiety or both are high in anxiety) are not negatively affected by increased alcohol consumption, whereas the opposite is true for couples that are mismatched in their attachment styles (i.e., one member is low in anxiety while the other

member is high). These findings not only support the matching hypothesis of romantic relationships within the broader realm of social psychology which states that couples whose members are alike in multiple domains (e.g., intelligence, attractiveness, socioeconomic status) are more likely to have satisfying, healthy, long-lasting relationships (Walster & Walster, 1969), but also speak more specifically to interpersonal aspects of adult romantic attachment theory. Instead of considering certain insecure attachment combinations (e.g., two anxious partners) from a couple-level matched perspective, attachment theory speaks of such a combination more from the juxtaposition of two individual-level phenomena. As such, within attachment theory, an anxious-anxious pairing is believed to be a maladaptive combination in which anxious insecurities are simply compounded as opposed to a couple that is matched and therefore one partner's anxiety might actually be experienced positively (or at least not as negatively) by an equally anxious partner.

Another interesting pattern observed in some of the cross-partner attachment interaction effects was that highly anxious individuals felt less jealousy the day after their partner drank heavily if their partner was also either highly anxious (see Figure 12, top panel) or highly avoidant (see Figure 12, bottom panel), but not if the partner was low in either attachment dimension, respectively. It is difficult to know how these insecure partners behaved during and after their drinking sessions; however, two possible explanations exist for these findings. On the one hand, if the partner behaved badly during and/or after a heavy drinking session (which is a reasonable assumption given the well-documented adverse effects of heavy alcohol consumption on relationship functioning [Levitt & Cooper, in press; see also Roberts & Linney, 2000; Marshal, 2003,

for reviews]), it could be that any feelings of jealousy on the part of the highly anxious actor that are normally aroused by the perceived behavior of the partner are now attributed to the effects of alcohol and not the partner, thus assuaging feelings of jealousy. On the other hand, it could be that the anxiolytic properties of alcohol reduce the attachment insecurities of the insecure individuals. Highly anxious partners would therefore be able to relax more and not be so vigilant to potential signs of relationship distress, while highly avoidant partners would be able to be more comfortable in relationship interactions. In both cases, the improved behavior of the partner should not give the highly anxious actor any reason to be jealous. This again not only suggests that future research assess both couple members, but also to include reports of both couple members on their own and their partner's behaviors during and after the drinking sessions. Doing so could provide much more insight into the cognitions and behaviors occurring during this process.

### **Strengths and Limitations of the Current Study**

The present study, while not without its limitations (discussed below), has a number of important strengths and advantages over past research. First, the inclusion of a daily diary methodology in the current study offers important methodological and statistical advantages over other methodologies. With such a design we are able to assess day-to-day variation in thoughts and behaviors, which offers us the potential to tease out the temporal order between alcohol use and relationship functioning. Moreover, diary reports provide more accurate assessment of the processes of interest than do alternative methods because the reports are close in time (within minutes or hours) to when the behavior or event occurs. The temporal proximity of reports reduces distortions in

memory and inaccuracies in reporting, thus yielding greater accuracy in measurement of core constructs (Shiffman, 2000).

Second, diary studies, such as the present one, conducted using handheld computers allow for the implementation of a time check that not only provides an exact time for when a report was filed relative to when the reported behavior occurred, but also enables researchers to impose a temporal order in a sequence of events (Tennen & Affleck, 2002). Retrospective diary and summary methods do not allow for such control, therefore, making it difficult to connect reports with a given instance. Time stamps have also been shown to increase the timely completion of questionnaires to the extent that participants know that their compliance can be verified (Shiffman, 2000). Moreover, electronic data collection also makes it easier to maintain confidentiality by use of passwords and programming that prevents respondents from going back to a previously completed report to change its contents.

Third, daily diary methods are now generally the preferred method of assessing alcohol use behaviors because they more accurately detect the variability in consumption levels compared to other methods (Leigh, 2000). For example, Lemmens, Tan, and Knibbe (1992) found that a prospective diary method detected the highest alcohol consumption rates in a general population survey of the Netherlands compared to retrospective diary methods or summary methods such as quantity/frequency measures (Q/F). Corroborating evidence for the greater accuracy of prospective diary methods has also been found in the Swiss general population (Heeb & Gmel, 2005), and in treatment and community samples here in the US using both electronic and paper diaries (Carney, Tennen, Affleck, Del Boca, & Kranzler, 1998; Poikolainen, Podkletnova, & Alho, 2002).

Because diary methods provide a more accurate picture of an individual's daily alcohol use, it allows researchers to examine day-to-day variation in patterns of consumption, whereas this is not possible with average summary methods such as Q/F.

Fourth and relatedly, because the data from such a design are nested hierarchically, we are able to model these daily processes in SPSS while simultaneously accounting for the variation in individual-level and couple-level variables. Thus, we are able to examine how between-person variation (e.g., attachment) affects within-person (e.g., alcohol use, relationship functioning) variation on a daily basis. Additionally, because we can include both intrapersonal as well as interpersonal variables at Level 1, such a design allows for a more direct test of some of the tenets of attachment theory, namely that attachment can predict a broad array of outcomes that are not limited to romantic relationships.

Finally, our study included both couple members and their reports of alcohol use and relationship functioning. The study of the couple as a whole instead of just one member is vital to understanding dynamic, interpersonal processes like romantic relationships (Cooper, 2002b). In part, this is because couple members, or individuals in any kind of relationship, are interdependent. As such, whenever one acts in a relationship, it affects both the self and the other. This notion was illustrated by the cross-partner attachment interactions found (e.g., see Figure 11). Moreover, because couple members will often times see the same situation from very different perspectives (especially in the case of anxiously vs. non-anxiously attached individuals, e.g., Campbell et al., 2005), it is not sufficient to rely on one couple member's report. Furthermore, because the degree of interdependence is decidedly greater in close, romantic relationships compared to other

interpersonal relationships, the importance of assessing romantic couples as wholes instead of as independent individuals is underscored even more.

In sum, the present study has a number of important strengths, both methodologically and substantively. Despite these many strengths, however, the proposed study also suffers from several limitations. First, diary designs pose extra burden on the participant compared with other less intrusive designs. Nevertheless pilot data collected using a design similar to the present one (Cooper, 2002a) and data from the current study (Levitt & Cooper, in press) showed that participants complied well with the daily diary protocol for a period of about three weeks.

The homogeneity of our sample represents another limitation. Our sample is overwhelmingly White, well educated, high functioning, and mostly college-aged. Thus, results of our study may not generalize to other ethnic groups, or to less well educated or well functioning individuals. Additionally, most couples in our sample were unmarried or were relatively newly married. Thus, although participants were required to be in a committed relationship for at least six months, results may not generalize to individuals in serious, longer-term relationships. However, average relationship length in the current study was still about 2 years, so relationships were fairly long-standing.

Another sample issue concerns the size of the current sample. The relatively small size of our sample may have limited our ability to detect many of the interactions tested due to insufficient power. Furthermore, as alluded to above, we were also limited in testing theoretically important higher-order interactions. In other words, theory would suggest 4-way or even 5-way interactions (e.g., actor anxiety X actor avoidance X partner anxiety X partner avoidance X actor alcohol consumption) to test possible effects of both highly

insecure partners, but this is not possible given the statistical modeling we have used. Thus, we do not know how some higher-order processes work in highly insecure individuals (i.e., high in both anxiety and avoidance). We were also unable to test cross-partner attachment X alcohol use X gender interactions (e.g., actor avoidance X partner anxiety X actor alcohol use X gender), which could be informative given the preponderance of male avoidant / female anxious couples in our data combined with the fact that men drink more heavily on average than women (Chen, Dufour, & Yi, 2004/2005). This issue also applies to models including drinking with the partner as an additional factor.

Finally, our study suffered from some measurement issues. As noted previously (Levitt & Cooper, in press) our drink-with-partner measure was limited in that respondents were only allowed to select one option from a list of possible options. Thus, it is unclear, for example, whether other individuals were around in the drinking situation if a respondent selected “drinking with the partner.” A more sensitive measure of the drinking context as a whole is needed in future research. Additionally, many of the processes examined would be further illuminated by knowledge of participants’ expectancies for drinking in relationship situations. For instance, it is still unclear as to whether individuals with different attachment styles differentially hold expectancies as to alcohol’s effects on relationship processes, or whether drinking with the partner might improve relationship communication and functioning. Thus, future research should include situational measures of alcohol expectancies to better understand the mechanisms and processes at work on a daily basis in romantic relationships.

In conclusion, the current study further illuminated alcohol's role in romantic relationship functioning as well as the role of attachment theory in helping to explain these processes. At the same time, this research reinforces just how complex romantic relationships are, and that the daily processes underlying such relationships are multifaceted, interrelated, and dependent on multiple factors. As each question is addressed, new questions arise, suggesting a lot of promise for future research on alcohol use in close relationships.

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Table 1

*Descriptive Statistics, Within-Person Correlations, and Within-Couple Correlations Among Study Variables.*

	Drank-with- Quantity						
	Intimacy	Jealousy	Partner	Composite	Anxiety	Avoidance	
Intimacy	.27*	-.26**	-.07	-.04	-.16	-.49**	
Jealousy	--	.25	.03	.04	.34**	.21*	
Drank-with-Partner	--	--	.52**	.79***	.10	-.05	
Quantity Composite	--	--	--	.59***	-.10	.00	
Anxiety	--	--	--	--	-.21	.09	
Avoidance	--	--	--	--	--	.01	
Mean	4.37	0.23	0.12	0.56	3.42	2.18	
SD	0.79	0.66	0.32	1.25	1.11	0.88	
Skewness	-1.35	2.97	2.36	2.20	0.36	0.99	
Kurtosis	1.63	7.91	3.57	3.58	-0.44	0.91	

Note. \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ . Correlations along diagonal are correlations between men and women within couple.

Table 2

Effects of Attachment on Relationship Processes.

Attachment	Actor Relationship Outcomes			
	AM Intimacy	Jealousy	AM Intimacy	Jealousy
	Main Effects			
	Actor Effects		Partner Effects	
Anxiety Main Effect	-0.07 / -.07t	.12*** / .12***	-.01 / --	.06* / .06*
Avoidance Main Effect	-.30*** / -.29***	.04 / --	-.04 / --	-.03 / --
	Within-Person Attachment Interaction Effects			
Anxiety X Avoidance	.04 / --	.05t / .05t	-.03 / --	-.03 / --
	Cross-Partner Attachment Interaction Effects			
Actor Anxiety X Partner Anxiety	-.02 / --	.02 / --		
Actor Anxiety X Partner Avoidance	.02 / --	.00 / --		
Actor Avoidance X Partner Anxiety	.07 / --	.02 / --		

Note.  $t p < .10$ ; \*  $p \leq .05$ ; \*\*\*  $p < .001$ . Values in the left side of each column are coefficients from full models; values in the right side of each column are coefficients from trimmed models. Dashes in trimmed model columns indicate that terms were not included in the

trimmed model. Lower order coefficients in trimmed model columns are from models estimating the highest order effect presented. Values not in parentheses are unstandardized coefficients. Values in parentheses are corresponding standardized coefficients. AM = Morning.



*Note.*  $t p < .10$ ; \*  $p \leq .05$ . Values in the left side of each column are coefficients from full models; values in the right side of each column are coefficients from trimmed models. Dashes in trimmed model columns indicate that terms were not included in the trimmed model. Values are unstandardized coefficients. Actor and Partner reports of drink-with-partner are controlled in models predicting quantity composite.

Table 4

*Moderating Effects of Attachment X Alcohol Use Predicting Relationship Processes.*

	Actor Relationship Outcomes			
	AM Intimacy	Jealousy	AM Intimacy	Jealousy
	Actor Effects		Partner Effects	
	Main Effects			
Quantity	-.01 / --	.03* / .03*	-.04** / -.04**	-.03* / -.03*
Drink-with-Partner (DWP)	.11t / .11t	-.01 / --	.08 / --	.03 / --
	Attachment Interaction Effects			
Anxiety X Quantity	-.02 / --	.01 / --	-.01 / --	-.02t / -.02*
Anxiety X DWP	.21* / .19*	.16** / .15*	.23** / .22**	.01 / --
Anxiety X DWP X Quantity	.03 / --	.00 / --	.08 / --	-.06 / --
Avoidance X Quantity	.02 / --	.03* / .03*	.03* / .02t	-.02t / -.02t
Avoidance X DWP	-.21t / -.21t	.07 / --	-.10 / --	-.12 / --
Avoidance X DWP X Quantity	-.15t / -.11ns	-.01 / --	-.03 / --	-.00 / --
	Within-Person Anxiety X Avoidance Interaction Effects			

Anxiety X Avoidance X Quantity	.01 / --	.05*** / .05***	-.00 / --	.03** / .03**
Anxiety X Avoidance X DWP	.07 / --	-.15 / --	-.03 / --	.06 / --
Cross-Partner Attachment Interaction Effects				
	Actor Quantity Effects		Partner Quantity Effects	
Actor Anxiety X Partner Anxiety X Quantity	-.00 / --	-.02t / -.03*	.03** / .04***	-.03* / -.03*
Actor Anxiety X Partner Anxiety X DWP	.07 / --	.06 / --	.15 / --	-.08 / --
Actor Anxiety X Partner Avoidance X Quantity	-.01 / --	.01 / --	.01 / --	-.04** / -.04**
Actor Anxiety X Partner Avoidance X DWP	-.05 / --	.01 / --	-.07 / --	-.07 / --
Actor Avoidance X Partner Anxiety X Quantity	-.00 / --	-.02 / --	.01 / --	-.02 / --
Actor Avoidance X Partner Anxiety X DWP	.01 / --	.02 / --	-.03 / --	-.12 / --

*Note.* t  $p < .10$ ; \*  $p \leq .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ . Values not in parentheses are unstandardized coefficients. Values in parentheses are corresponding standardized coefficients. AM = Morning.

Table 5

*Moderating Effects of Attachment X Relationship Functioning Predicting Alcohol Use.*

Attachment	Actor Alcohol Use Outcomes			Quantity
	Drink-With-Partner	Composite	Drink-With-Partner	
	Actor Effects			Partner Effects
	Main Effects			
Intimacy	-.27* / -.28*	-.07t / -.07t	.12 / --	-.01 / --
Jealousy	.29* / .31*	-.01 / --	.23 / --	-.04 / --
	Attachment Interaction Effects			
Anxiety x Intimacy	-.19t / -.20*	.03 / --	-.29** / -.29**	.04 / --
Anxiety x Jealousy	-.26t / --	.05 / --	-.12 / --	.02 / --
Avoidance x Intimacy	-.13 / --	-.04 / --	-.19 / --	-.06 / --
Avoidance x Jealousy	-.86*** / -.47*	.05 / --	-.27 / --	.06 / --
	Within-Person Anxiety X Avoidance Interaction Effects			
Anxiety x Avoidance x Intimacy	.30* / .28*	-.04 / --	.05 / --	.02 / --

Anxiety x Avoidance x Jealousy	.26 / --	-.04 / --	.40* / .37*	-.07 / --
	Cross-Partner Attachment Interaction Effects			
	Actor Relationship Effects		Partner Relationship Effects	
Actor Anxiety X Partner Anxiety X Intimacy	.18 / --	-.02 / --	-.24 / --	-.05 / --
Actor Anxiety X Partner Anxiety X Jealousy	-.02 / --	.03 / --	.11 / --	.03 / --
Actor Anxiety X Partner Avoidance X Intimacy	-.19t / -.08ns	.00 / --	-.18 / --	.04 / --
Actor Anxiety X Partner Avoidance X Jealousy	.01 / --	-.04 / --	.11 / --	-.04 / --
Actor Avoidance X Partner Anxiety X Intimacy	.08 / --	-.03 / --	.30* / .24*	-.00 / --
Actor Avoidance X Partner Anxiety X Jealousy	-.00 / --	-.04 / --	.05 / --	-.04 / --

*Note.*  $t p < .10$ ;  $* p \leq .05$ ;  $** p < .01$ ;  $*** p < .001$ . Values not in parentheses are unstandardized coefficients. Values in parentheses are corresponding standardized coefficients. Values in brackets are corresponding odds ratios. Actor and Partner reports of drink-with-partner are controlled in models predicting quantity composite. Actor and partner models testing cross-partner attachment effects were estimated separately.

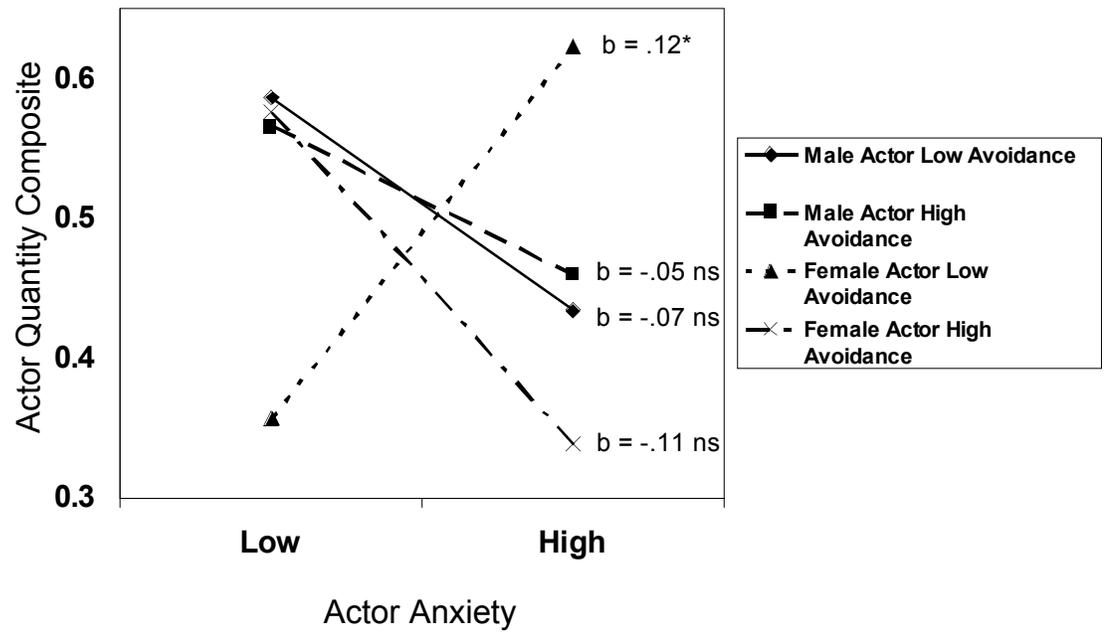


Figure 1. Actor anxiety X actor avoidance X actor gender interaction predicting actor quantity. \*  $p < .05$ .

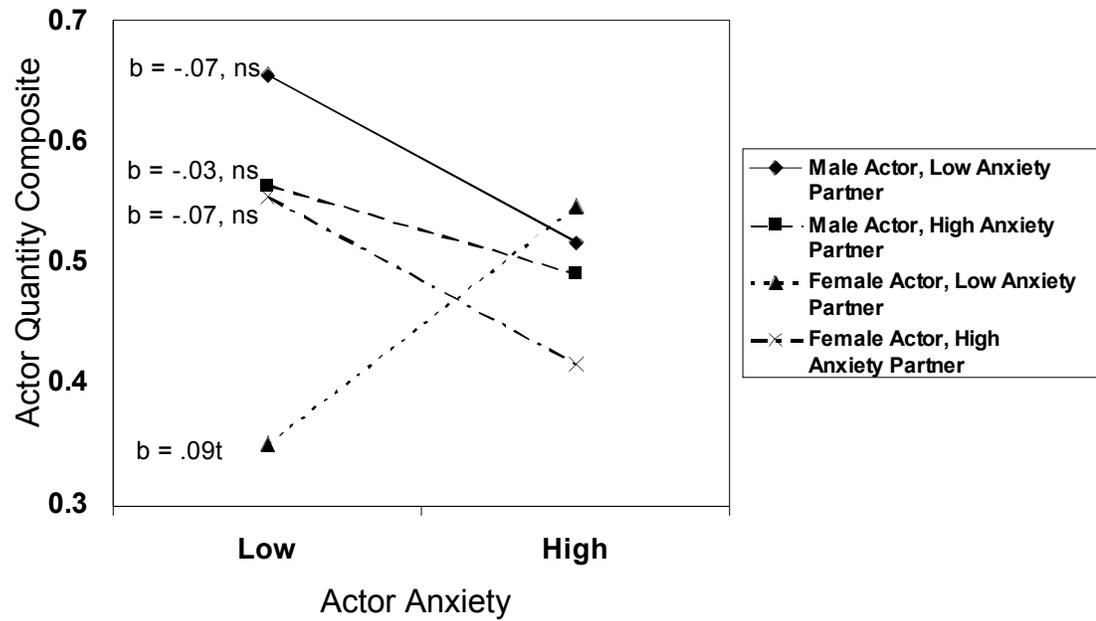
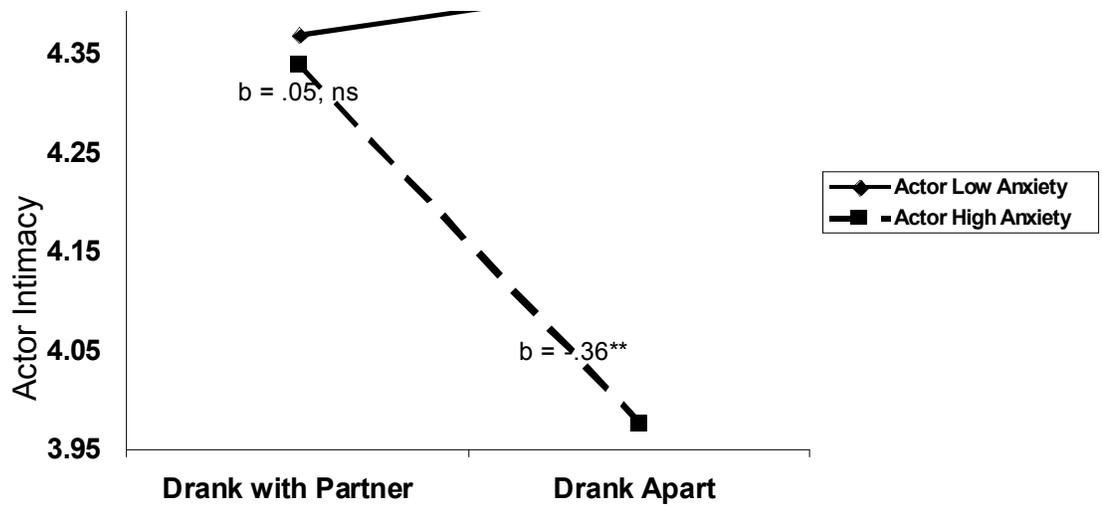
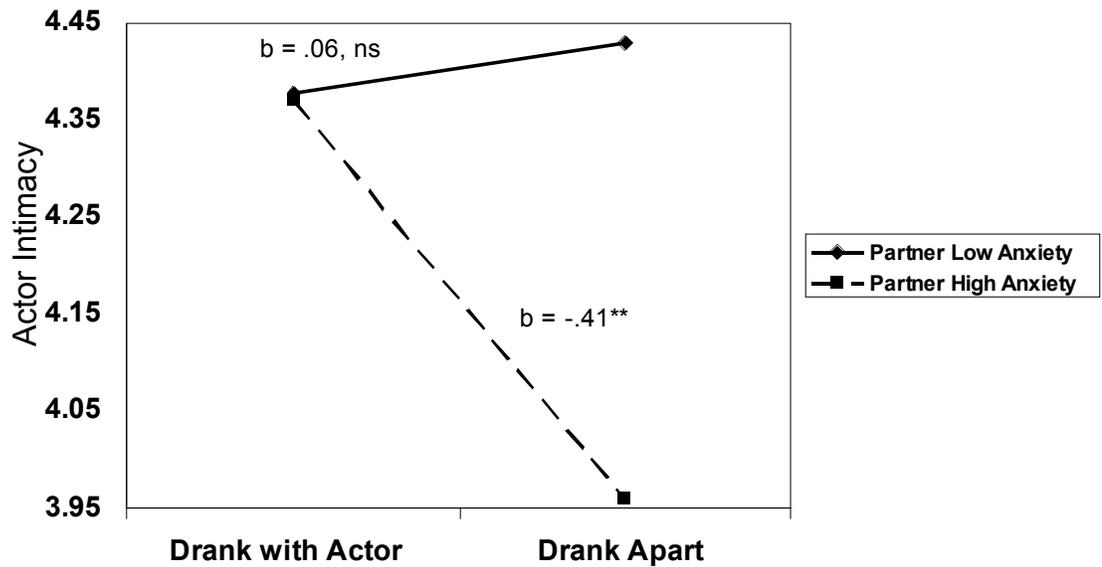


Figure 2. Actor anxiety X partner anxiety X actor gender interaction predicting actor quantity.  $t p < .10$ .

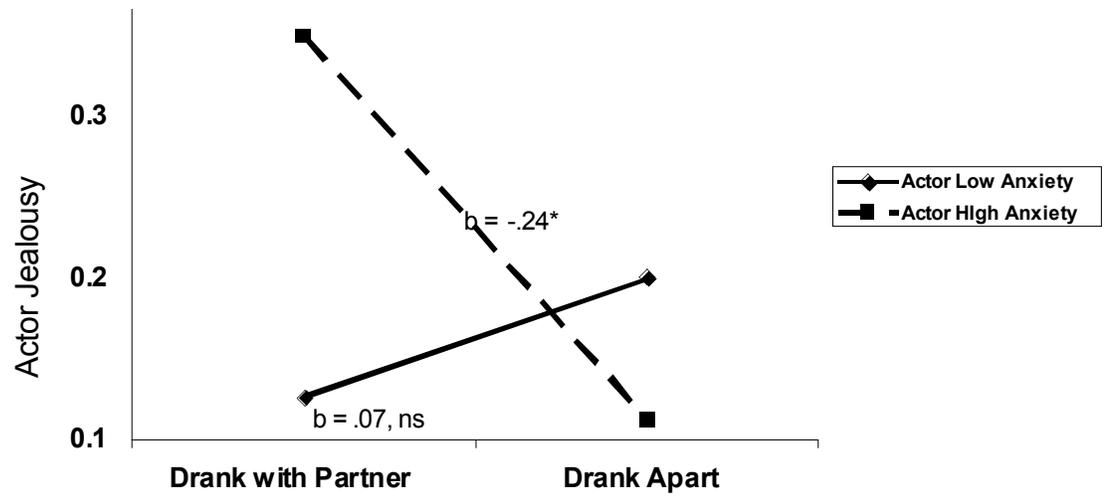


Actor Drinking Context



Partner Drinking Context

Figure 3. Top panel shows actor anxiety X actor drinking context interaction predicting actor intimacy. Bottom panel shows partner anxiety X partner drinking context predicting actor intimacy. \*\*  $p < .01$ .



Actor Drinking Context

Figure 4. Actor anxiety X actor drinking context interaction predicting actor jealousy. \*  $p < .05$ .

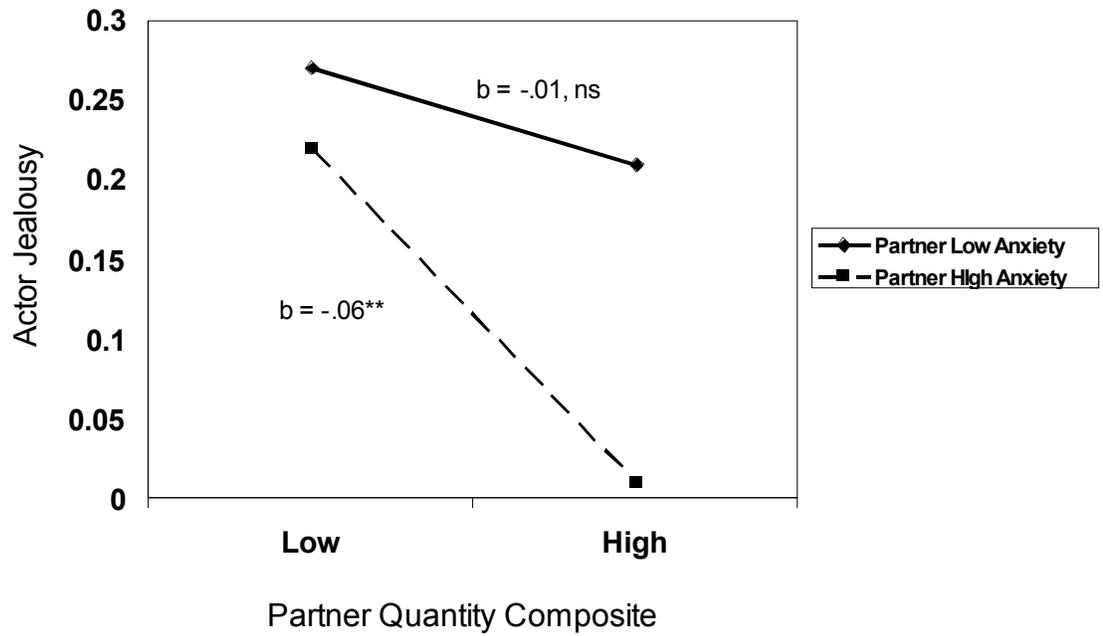


Figure 5. Partner anxiety X partner quantity interaction predicting actor jealousy.  $** p < .01$ .

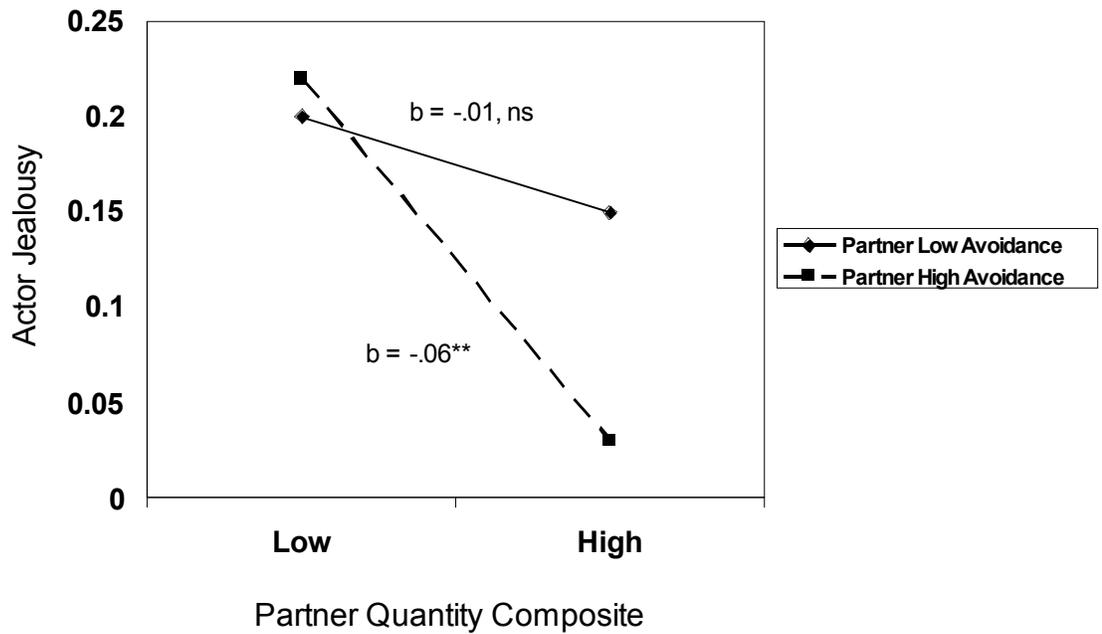
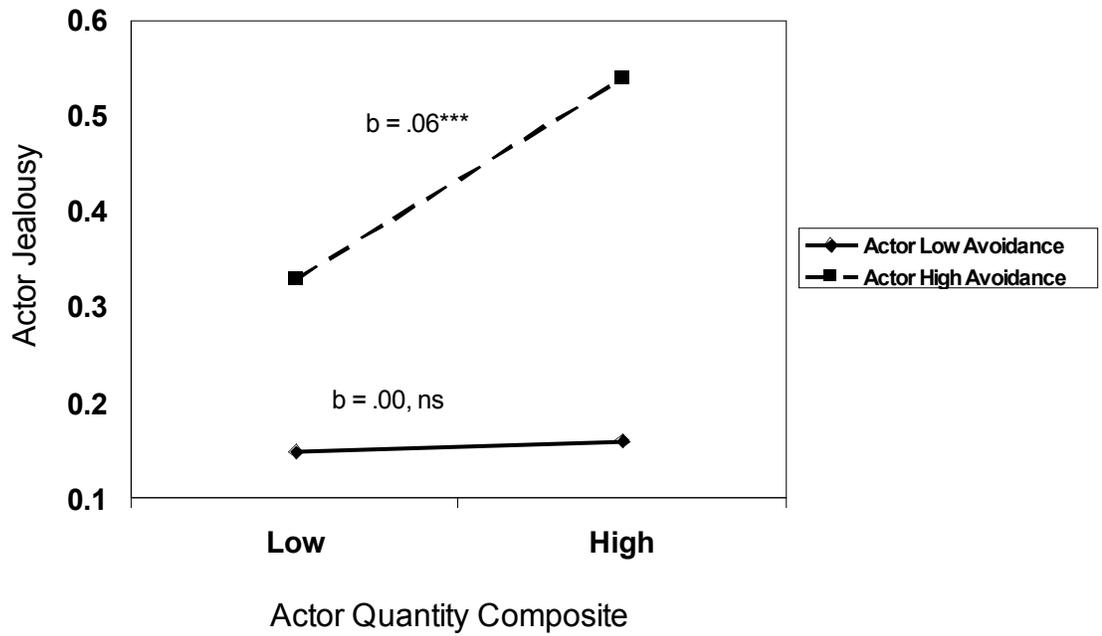


Figure 6. Top panel shows actor avoidance X actor quantity interaction predicting actor jealousy. Bottom panel shows partner avoidance X partner quantity interaction predicting actor jealousy.  $** p < .01$ ;  $*** p < .001$ .

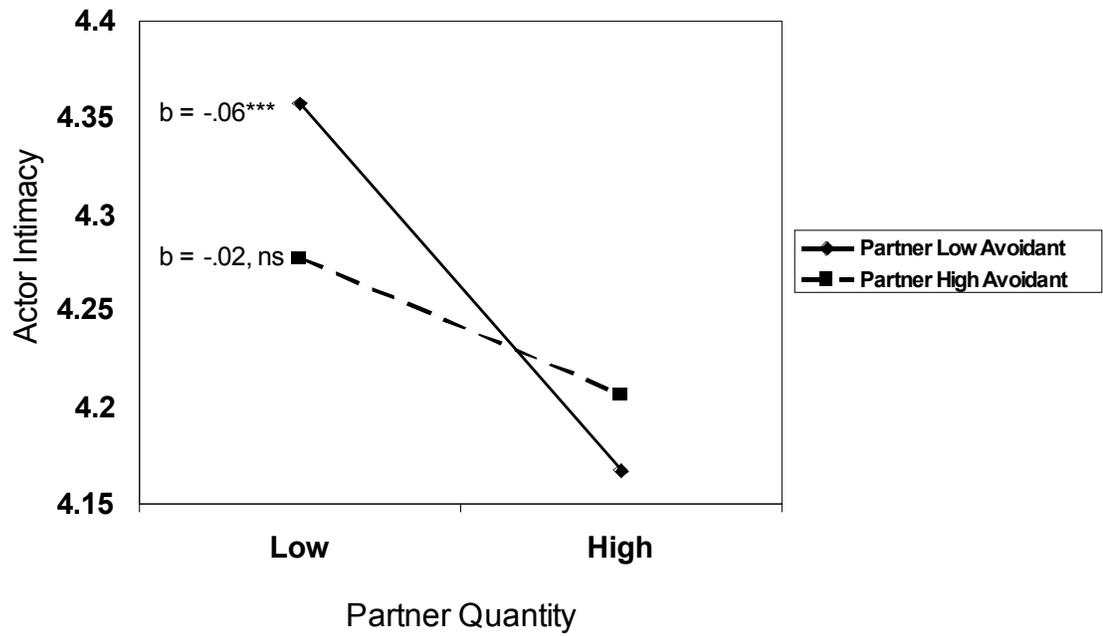
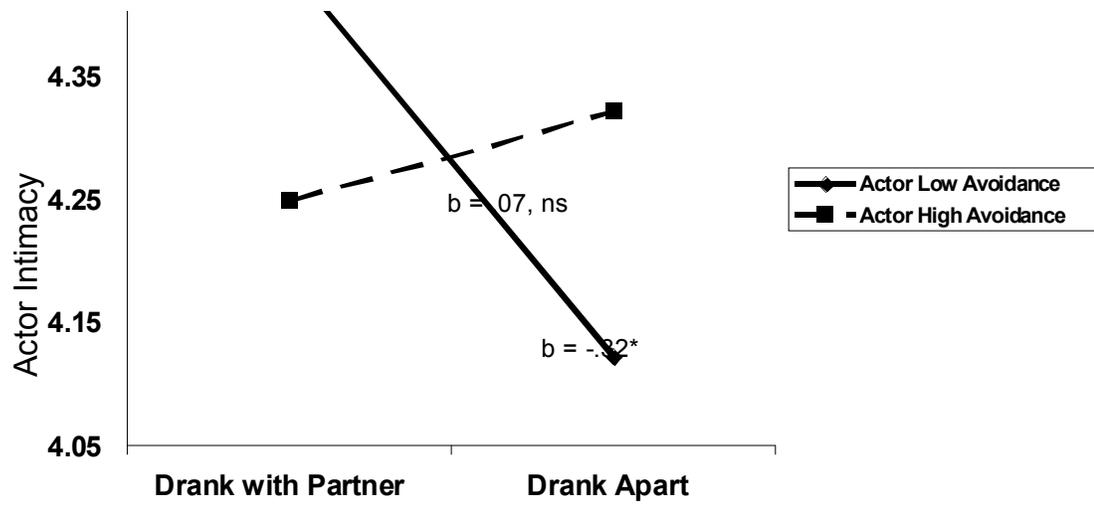


Figure 7. Partner avoidance X partner quantity interaction predicting actor intimacy. \*\*\*

$p < .001$ .



### Actor Drinking Context

Figure 8. Actor avoidance X actor drinking context interaction predicting actor intimacy.

\*  $p < .05$ .

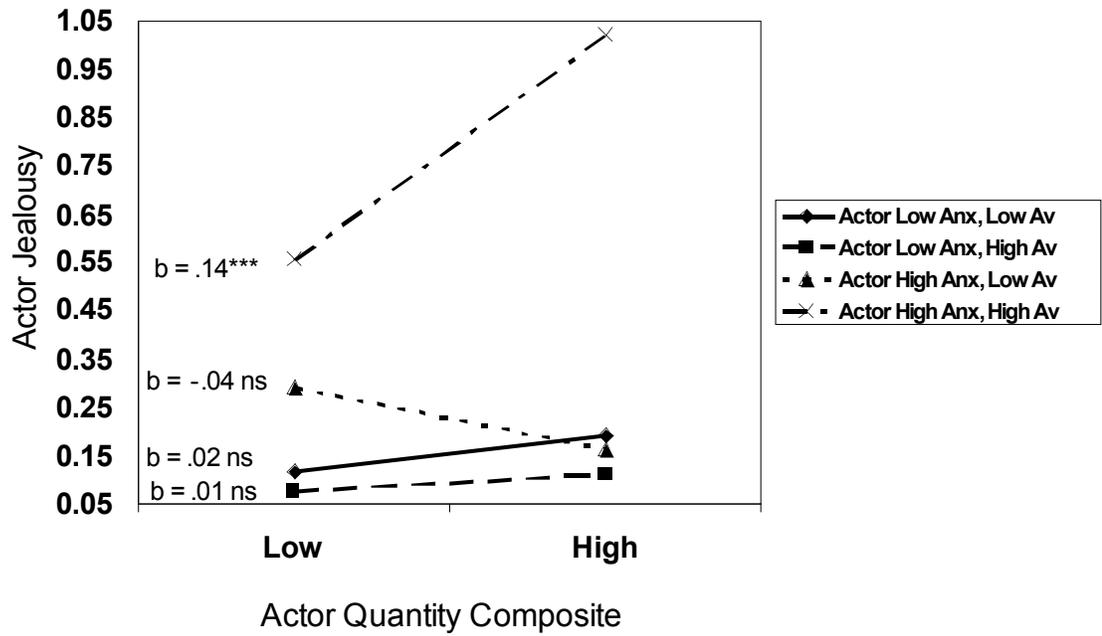


Figure 9. Actor anxiety X actor avoidance X actor quantity interaction predicting actor jealousy. \*\*\*  $p < .001$ .

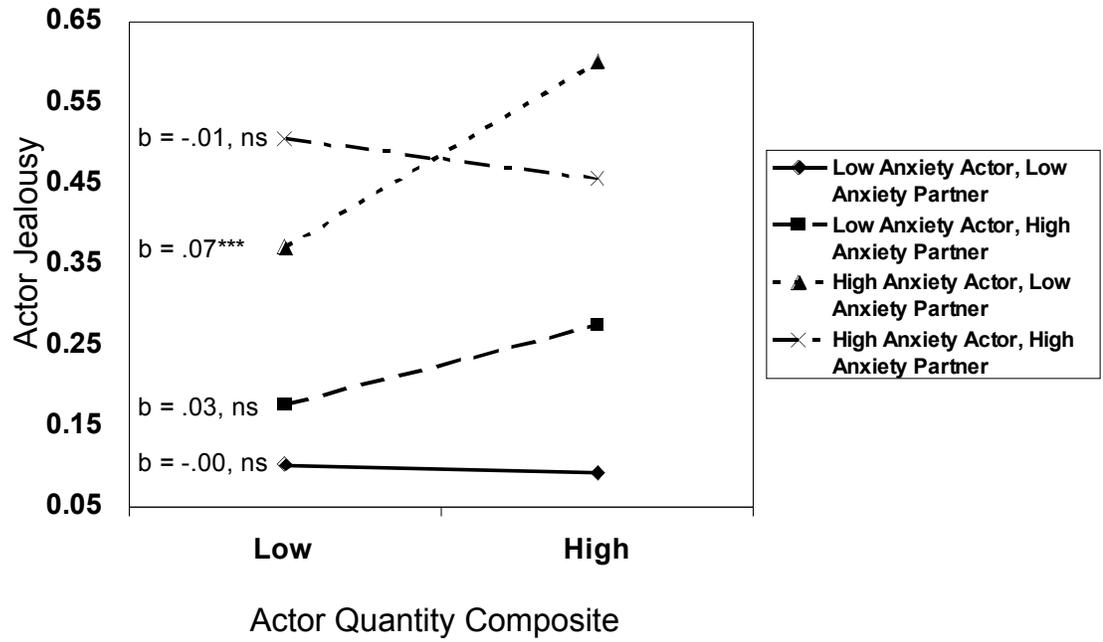


Figure 10. Actor anxiety X partner anxiety X actor quantity interaction predicting actor jealousy. \*\*\*  $p < .001$ .

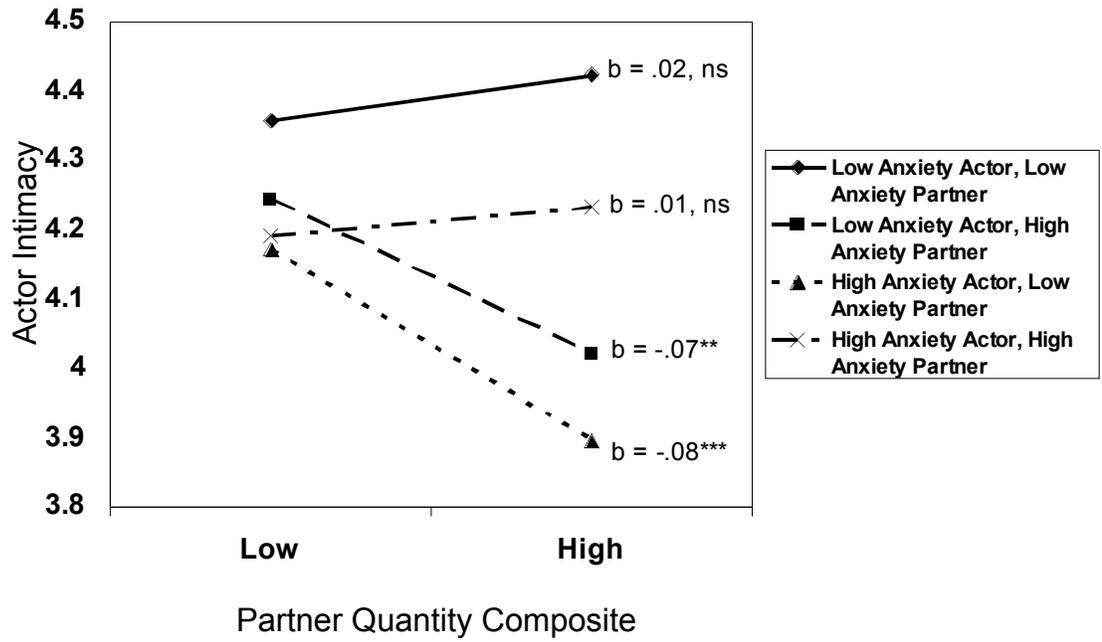


Figure 11. Actor anxiety X partner anxiety X partner quantity interaction predicting actor intimacy. \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

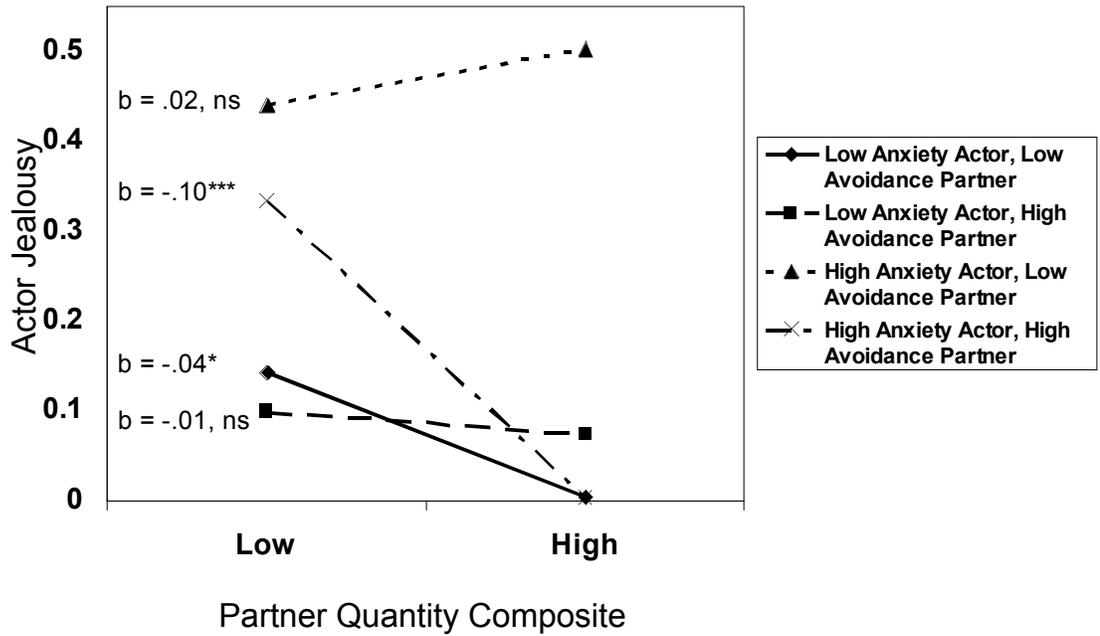
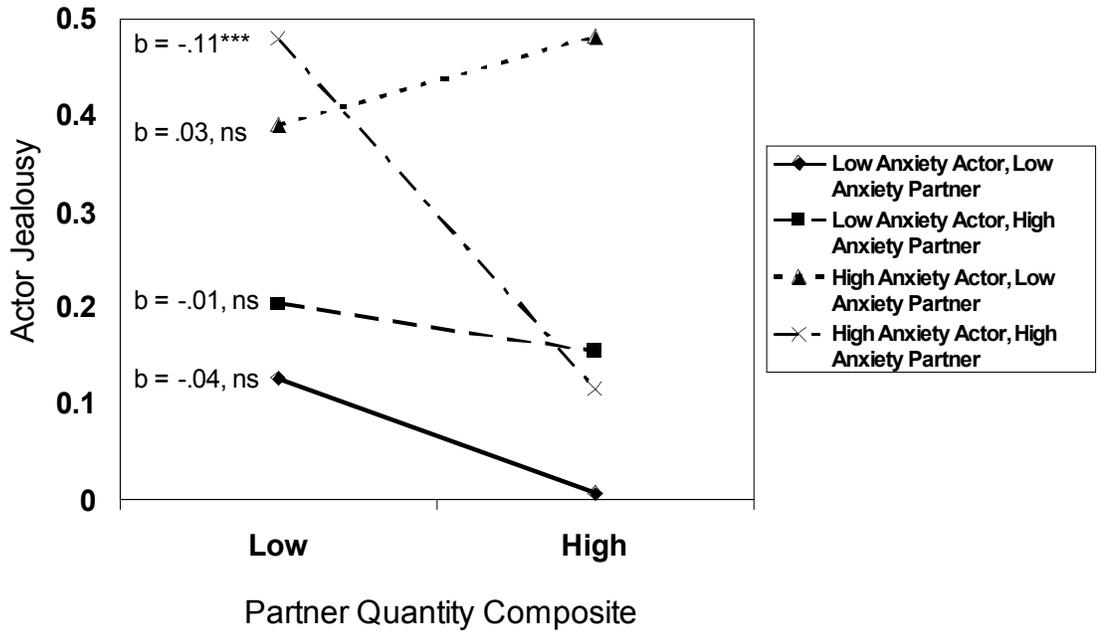


Figure 12. Top panel shows actor anxiety X partner anxiety X partner quantity interaction predicting actor jealousy. Bottom panel shows actor anxiety X partner

avoidance X partner quantity interaction predicting actor jealousy. \*  $p < .05$ ; \*\*\*  $p < .001$ .

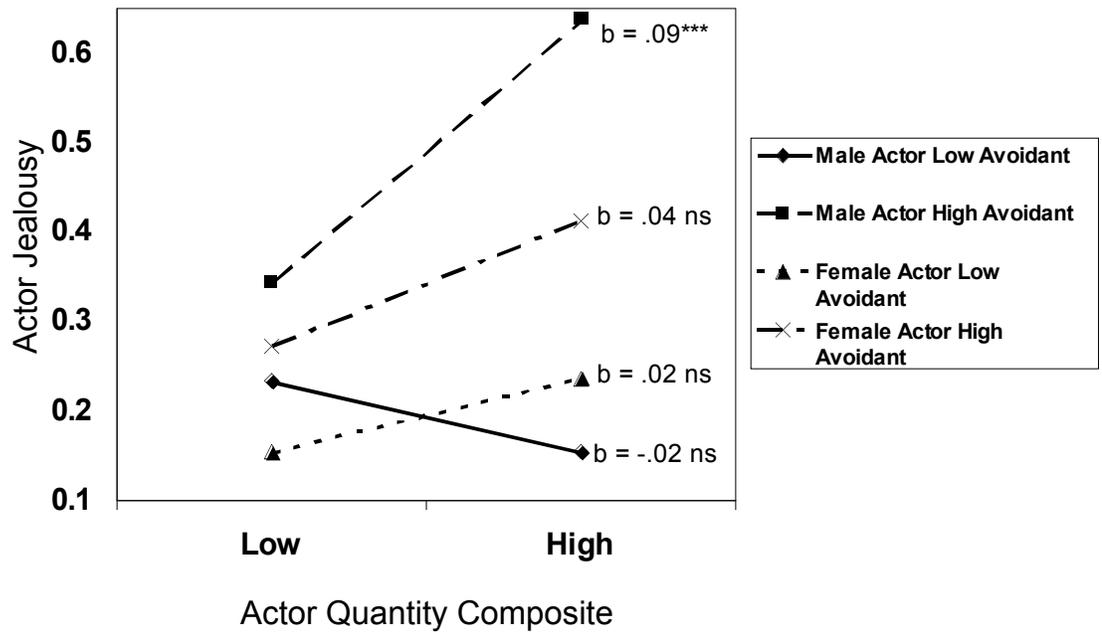


Figure 13. Actor avoidance X actor quantity X actor gender interaction predicting actor jealousy. \*\*\*  $p < .001$ .

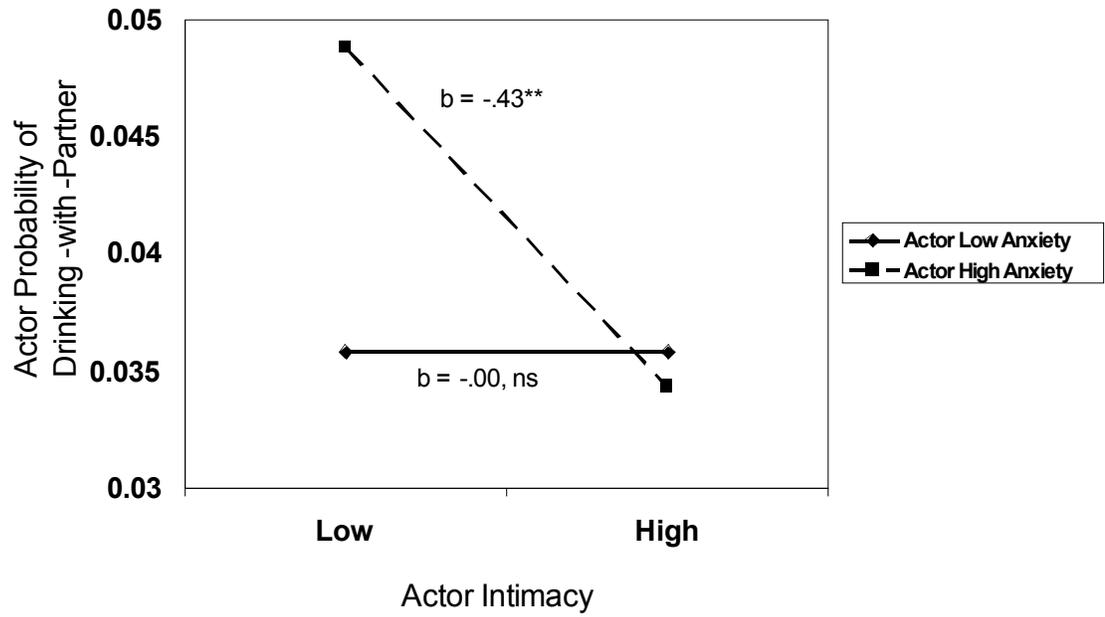


Figure 14. Actor anxiety X actor intimacy interaction predicting actor probability of drinking-with-partner.  $** p < .01$ .

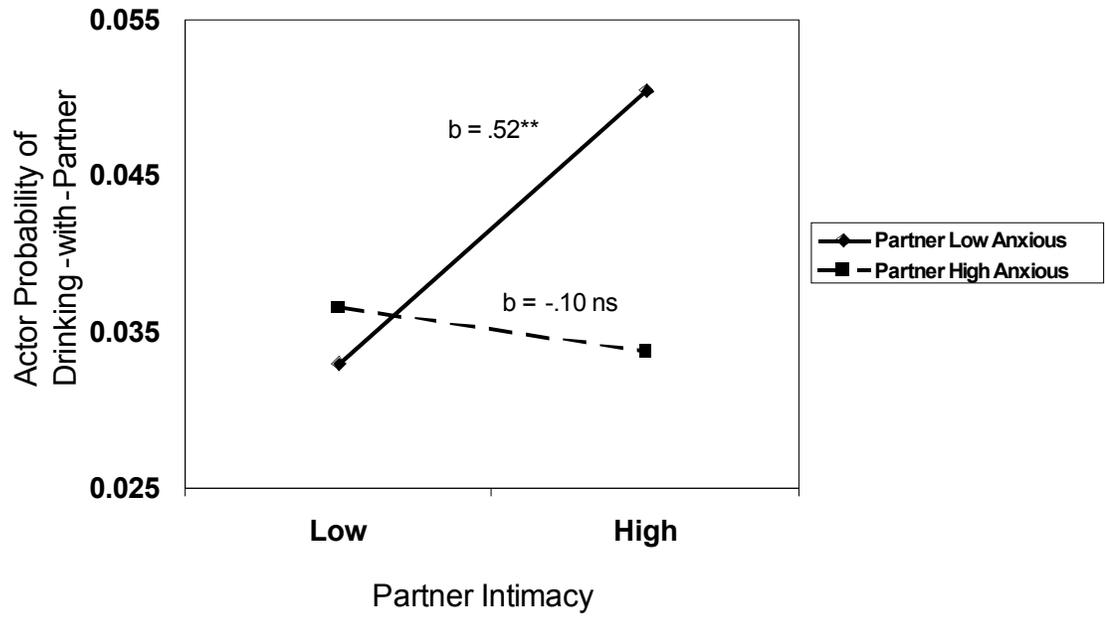


Figure 15. Partner anxiety X partner intimacy interaction predicting actor probability of drinking-with-partner.  $** p < .01$ .

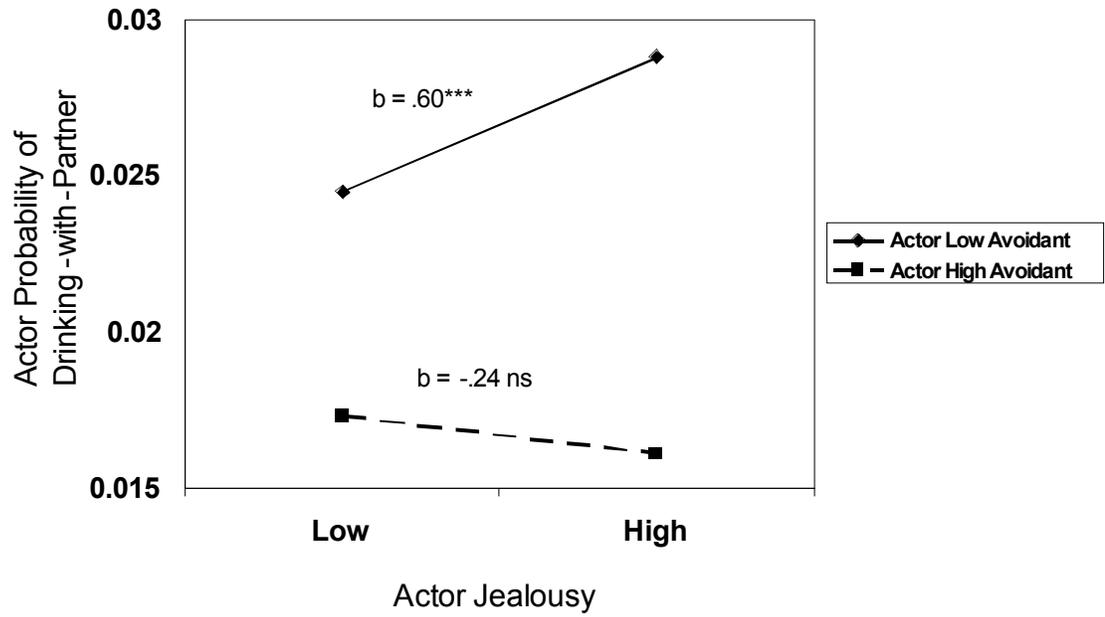


Figure 16. Actor avoidance X actor jealousy interaction predicting actor probability of drinking-with-partner. \*\*\*  $p < .001$ .

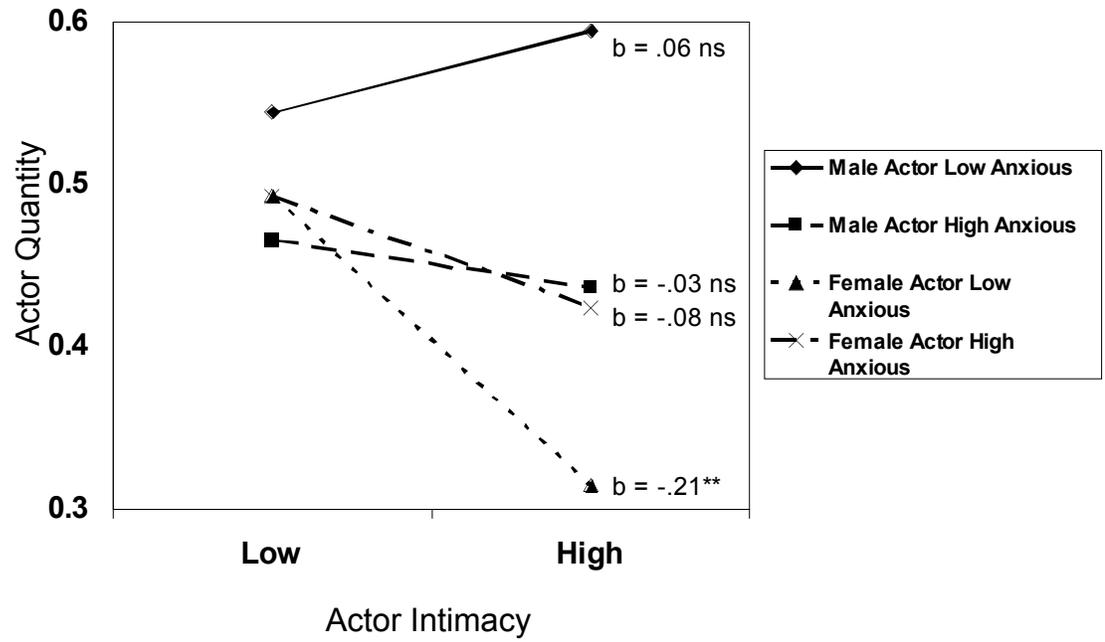


Figure 17. Actor anxiety X actor intimacy X actor gender interaction predicting actor quantity.  $** p < .01$ .

## Appendix A

### Attachment Items Included in the Current Study

Items 1 - 20 are from the Experience in Close Relationships scale by Brennan, Clark, and Shaver (1998). There are 10 items for each for the avoidant and anxious subscales (marked AV and AX, respectively, in parentheses; r indicates the item is reverse-coded).

1. I prefer not to show a partner how I feel deep down (AV).
2. I worry about being abandoned (AX).
3. I am very comfortable being close to romantic partners (AV-r).
4. I worry a lot about my relationships (AX).
5. Just when my partner starts to get close to me, I find myself pulling away (AV).
6. I worry that romantic partners won't care about me as much as I care about them (AX).
7. I get uncomfortable when a romantic partner wants to be very close (AV).
8. I worry a fair amount about losing my partner (AX).
9. I don't feel comfortable opening up to romantic partners (AV).
10. I often wish that my partner's feelings for me were as strong as my feelings for him/her (AX).
11. I want to get close to my partner, but I keep pulling back (AV).
12. I am nervous when partners get too close to me (AV).
13. I worry about being alone (AX).
14. I feel comfortable sharing my private thoughts and feelings with my partner (AV-r).

15. My desire to be very close sometimes scares people away (AX).
16. I try to avoid getting too close to my partner (AV).
17. I need a lot of reassurance that I am loved by my partner (AX).
18. I find it difficult to allow myself to depend on romantic partners (AV).
19. I get frustrated when my partner is not around as much as I would like (AX).
20. If I can't get my partner to show interest in me, I get upset or angry (AX).

## Appendix B

### Daily Alcohol-Related Items

The following are the alcohol-related items that participants completed as part of the daily morning questionnaire. The items assess the previous day's alcohol use.

1. Have you had any alcohol to drink in the last 48 hours?

Yes                  No

2. On what day did your most recent drinking episode start?

Monday  
Tuesday  
Wednesday  
Thursday  
Friday  
Saturday  
Sunday

3. At about what time did this episode start?

12 AM (midnight), 1 AM, 2 AM, ..., 11 PM

4. Have you already completed an AM questionnaire in which you answered question about this drinking episode?

Yes                  No

5. About how long did this drinking episode last (i.e., from the time of your first drink 'till the time of your last drink)? (Enter # of hours)

6. How many drinks did you have altogether? (a drink = 12 oz. beer, 12 oz. wine cooler, 4 oz. wine, 1 oz. shot) Enter the number below.

7. To what extent did you drink enough to get drunk or very buzzed/high?

1 = Not at all, 5 = Extremely

8. During the time you were drinking, were you...

Alone

With your partner

With a same-sex friend(s)

With an opposite-sex friend(s)

With family

Other

## Appendix C

### Daily Relationship Functioning Items

The following are the relationship functioning items that participants completed as part of the daily evening questionnaire. The items assess the same day's relationship events.

#### Intimacy Items.

1. Thinking about how you feel RIGHT NOW, how close do you feel to your partner?

1 = Not at all, 5 = Extremely

2. How much in love do you feel with your partner RIGHT NOW?

1 = Not at all, 5 = Extremely

3. In general, how happy or unhappy do you feel with your partner RIGHT NOW?

1 = Very Unhappy, 5 = Very Happy

#### Jealousy Items.

Items 4 - 8 use the following response anchors:

1 = Not at all, 5 = Extremely

4. Did your partner seem emotionally close to someone else today that made you feel jealous?

5. Did your partner seem physically or sexually interested in someone else in a way that made you feel jealous?

6. How much were your feelings hurt by this jealousy incident today?

7. How angry did you feel because of the jealousy incident?

8. How strong were your jealous feelings today?

## VITA

Ashley David Levitt was born in St. Louis, Missouri, and was raised in the St. Louis area. He graduated high school from Belleville Township High School East. He received his Bachelor's degree in Psychology from Drury University in Springfield, Missouri in 2003. In 2008, he received his Master's degree in Social Psychology from the University of Missouri, and then completed this dissertation in August of 2010. He enjoys all forms of music, particularly "extreme" genres, such as hardcore, metal, and noise, and likes to take long walks on the beach.