DAILY ALCOHOL USE AND RELATIONSHIP FUNCTIONING IN YOUNG ADULT ROMANTIC RELATIONSHIPS

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by

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The undersigned, appointed by the Dean of the Graduate School, have examined the thesis entitled

DAILY ALCOHOL USE AND RELATIONSHIP FUNCTIONING

IN YOUNG ADULT ROMANTIC RELATIONSHIPS

Presented by Ashley David Levitt

A candidate for the degree of Master of Arts

And hereby certify that in their opinion it is worthy of acceptance.

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DEDICATION

This work is dedicated to all of my family and friends who were invaluable during its process. Above all, this work is dedicated to my wife, Michelle. Without her unwavering love, fierce encouragement, immutable support, and patient understanding, I never would have finished this task.

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CHAPTER 1: INTRODUCTION

Alcohol is commonly seen as a social ill that can negatively affect romantic relationships. Images of arguments or partner criticism after one or both partners has had too much to drink are common in our society. Despite these negative images, alcohol is also commonly seen as a magical elixir that can positively transform relationships. Images of couples enjoying a bottle of wine together to enhance a romantic evening, or toasting with a glass of champagne in hand to celebrate a recent wedding ceremony are equally common. As these images suggest, the use of alcohol can be associated with positive and beneficial effects on relationship functioning as well as with adverse ones. Unfortunately, however, it is still unclear under what circumstances and for whom the associations between alcohol and relationship functioning will be positive or negative.

Despite the importance of this issue, past research has failed to adequately capture this complexity for at least four reasons. First, relatively few studies have used normative samples of men and women, relying instead on samples of men prone to alcohol abuse or relationship aggression (see Leonard & Jacob, 1988; Roberts & Linney, 2000, for reviews). Second and relatedly, most studies have focused on the negative effects of alcohol use on relationship functioning (e.g., the increased probability of relationship violence). Few studies have investigated positive effects on relationship functioning, though those that have clearly suggest that positive relationship effects might accrue from drinking. Third, few have considered the possibility that relationship functioning might also drive drinking (see Roberts & Linney, 2000, for a review). It is possible, for example, that an argument with one's partner drives one to drink, as opposed or in

addition to the other way around. Fourth, the majority of previous research has relied on cross-sectional study designs, which do not permit the disentangling of cause and effect or the examination of bidirectional influences. Such designs also do not allow researchers to examine situational factors (e.g., drinking with one's partner versus apart on a given day) that may shape the nature and meaning of these associations. Therefore, the current study sought to examine the bidirectional associations between alcohol use and relationship functioning in a normal population sample of romantic couples using a daily diary methodology.

The model guiding the proposed research is depicted in Figure 1. As shown by paths A1, alcohol consumption is thought to cause declines in relationship functioning (indexed by [low] intimacy and relationship problems) and in turn, as shown by paths B1, poor relationship functioning is hypothesized to drive alcohol use. However, drinking with one's partner (as opposed to apart) is thought to benefit subsequent relationship functioning, and to occur in response to poor relationship functioning. The following selectively reviews the literature pertaining to each link in the proposed model, and summarizes the relevance of this research to the present study by presenting the hypotheses tested in the current study.

Alcohol Use Predicting Relationship Functioning

The majority of research has focused on the effects of alcohol use on subsequent relationship functioning (see Figure 1, paths A1) and, as previously indicated, points to both positive and negative effects on relationship functioning. However, the nature of these effects appears to depend on factors such as the amount of alcohol consumed and the context in which it is consumed – in particular, whether drinking occurred with one's

partner vs. apart. Furthermore, much of the previous research is not directly relevant to the current study – which uses a more normative sample – because of specific characteristics of the types of samples used (e.g., alcohol treatment samples) and the dependent variables examined (e.g., physical violence against one's partner). Only a few studies have examined alcohol use in the context of close romantic relationships using normal population samples, and because of their greater relevance, these are disproportionately represented in the following review.

Several experimental lab-based studies show that alcohol can exacerbate relationship conflict, even among samples of normal couples. Leonard and Roberts (1998), for example, conducted a study in which newlyweds were instructed to discuss a current disagreement in the relationship, and discussions were videotaped. Couples were categorized as aggressive or non-aggressive (based on husbands' previous histories of relationship-based abuse or aggression) and were assigned to alcohol, placebo, or control conditions. Alcohol was administered only to husbands. Results showed that both husbands and wives in the alcohol condition reported more negativity in their interactions regardless of whether they were categorized as aggressive or non-aggressive compared to husbands and wives who did not receive alcohol. These results suggest that alcohol can adversely affect both partners, even when only one couple member is drinking, in couples with and without histories of aggression.

MacDonald, Zanna, and Holmes (2000) showed similar findings in a study in which undergraduate males currently involved in a close relationship were placed in an alcohol, placebo, or control condition and instructed to report on a serious conflict that occurred in the relationship and was equally each partner's fault. Results showed that

participants in the alcohol condition felt more negatively about the conflict, and also projected these feelings on their partners, reporting a belief that their partners were more upset as well. However, the findings of both of these studies are limited such that only males were used in the study by MacDonald et al. (2000), and alcohol was only given to males in the study by Leonard and Roberts (1998). Thus, we cannot know whether similar effects would be observed among women when they drink.

Results of lab-based studies such as these also may not generalize well to the effects of alcohol on relationship functioning in everyday life. First, participants in such studies consume alcohol in a sterile lab setting, which is very different from their home or a bar where everyday drinking is likely to occur. In addition, lab protocols (e.g., Leonard & Roberts, 1998) typically require consuming a sufficient quantity of alcohol to reach legal limits of intoxication. Therefore, results may not generalize to behaviors or cognitions associated with moderate or low levels of alcohol consumption that may be more likely to occur in naturalistic settings and to have positive effects. Finally, all of these studies examined the effects of alcohol in situations that were specifically designed to be conflictual or to focus on a conflict. Thus, these data cannot address the possibility that drinking increases the likelihood that a conflict will occur in naturalistic settings, or that it promotes positive feelings in interactions when conflict is not primed.

However, a recently conducted diary study suggests that alcohol might also increase the probability of conflicts or confrontations arising, at least among men with aggressive or heavy drinking propensities. Specifically, Fals-Stewart (2003) studied a sample of men entering treatment programs for alcohol use or domestic violence. Participants completed diary reports on a daily basis for 15 months after entering the

program. Results showed that physical aggression was more likely to occur on days when drinking occurred than on days when it did not, and that the aggressive episode was most likely to follow within two hours of drinking. Although physical aggression was more likely to occur when men drank lightly than not at all, the strongest effect was found when they drank heavily. Additionally, patterns of physical aggression following drinking were very similar among the two treatment groups, though direct statistical tests were not reported. Although this research is important in demonstrating that alcohol can increase the likelihood of relationship violence in naturalistic settings, the results may not generalize to daily occurrences of drinking and relationship functioning among non-aggressive individuals or non-problem drinkers.

In fact, recent research using a normative sample of drinkers has shown positive effects of drinking on interpersonal interactions (aan het Rot, Russell, Moskowitz, & Young, 2008). In an event-contingent diary study of daily social interactions, aan het Rot et al. found that alcohol positively predicted agreeableness and positive affect while it negatively predicted quarrelsomeness and negative affect. Because the researchers did not differentiate among interaction partners, it is impossible to know whether these effects occurred with romantic partners or were restricted to non-romantic interaction partners. Nevertheless, it offers compelling evidence that alcohol can have positive effects on subsequent interpersonal interactions.

Whether the drinking occurs with one's partner might also affect the nature of the association between alcohol use and relationship functioning. Research examining couples preparing to enter into marriage shows that as relationships become more serious, drinking with friends outside of the relationship typically gives way to drinking with

one's partner (Leonard & Mudar, 2000). Although the causal direction of this effect is unclear, it raises the possibility that drinking together fosters positive relationship development. Support for this idea has been shown in a longitudinal study by Homish and Leonard (2005) in which they prospectively examined marital satisfaction and drinking behaviors in newlywed couples shortly after their marriages and on their first and second anniversaries. At Wave 1, they found that husbands who drank with their spouses reported higher relationship satisfaction than those who drank apart from their spouses, though this difference was not significant at later waves. However, wives who drank with their husbands reported significantly higher satisfaction in the relationship than those who drank apart at all three waves. This suggests that while relationships of both men and women seem to benefit when partners drink together versus apart, this effect may be stronger for women than men.

Discrepancies in patterns of typical alcohol use between couple members also appear to affect relationship functioning. Mudar, Leonard, and Soltysinski (2001) examined couple members' alcohol involvement over time in a sample of newlyweds, and found that when only one member drank heavily over the past year, the couple experienced lower marital quality compared to couples in which both members drank heavily or neither drank heavily.

Finally, there is also evidence suggesting that quantity and frequency, when assessed separately, can have differing effects on relationship functioning. For example, in a sample of newlyweds, Roberts, Leonard, and Senchak (1994) found that when partners drank heavily, their spouses reported lower marital adjustment. However, among non-problem drinkers, when either partner reported frequent drinking, wives reported

significantly more intimacy in their relationships. Roberts and Linney (1998) found similar results in a community sample of couples. Husbands' heavy drinking and frequent drinking each predicted lower marital quality, whereas wives' frequency (but not quantity) predicted higher reported marital quality. In their review of these effects, Roberts and Linney (2000) point out that women in these studies were typically light drinkers, and therefore, the positive effects of alcohol consumption on relationship functioning might be a function of alcohol expectancies (e.g., increases in emotional expression and intimacy, sexual enhancement, etc.) as opposed to pharmacologic effects of alcohol. These data also raise the possibility that drinking by the female partner is more likely to produce positive relationship effects, whereas drinking by the male partner is more likely to yield null or negative effects. However, it is not clear whether the differential gender effects observed in these studies can be clearly separated from typical differences in drinking patterns or amounts.

In sum, although a good deal of research has shown that alcohol adversely affects how conflicts are handled as well as the probability that aggressive episodes will occur, this has mostly been shown for heavy drinking and among non-normative samples of men. Studies using normative samples suggest that effects may even be salutary, especially when couple members drink together, drink small amounts or drink frequently, and have similar drinking patterns. Clearly more research is needed using normal population samples that exhibit more normative drinking behaviors.

Relationship Functioning Predicting Alcohol Use

Past research indicates that people believe that alcohol reduces tension and alleviates dysphoric mood (see Greeley & Oei, 1999 for a review) and report using

alcohol to reduce tension (Conger, 1956) and regulate negative emotional experiences (Cooper, Frone, Russell, and Mudar, 1995). People also attribute positive mood enhancing effects to alcohol (see Lang, Patrick, & Stritzke, 1999 for a review) and report using alcohol as a way to enhance and/or celebrate social occasions (Cooper et al., 1995). Thus, it seems plausible that individuals in relationships might use alcohol as a way to cope with the stress and distress of negative relationship experiences or to celebrate or enhance positive relationship experiences (see paths B1 in Figure 1). However, little research has considered either possibility. As suggested by Roberts and Linney (2000), the limited amount of research on this link may be due to the fact that the tension reduction hypothesis has historically received mixed support, or to a lack of awareness that positive relationship events might also drive drinking. Although only a few studies have actually examined these possibilities in the context of close romantic relationships or with specific reference to relationship events, they nevertheless demonstrate the plausibility of these effects.

Romelsjo, Lazarus, Kaplan, and Cohen (1991) studied a host of stressful life situations as predictors of alcohol use in a community sample of couples over a 9-year period. Marital problems were significantly associated with increases in husbands' drinking, but not wives'. This is in line with previous research suggesting that men are more likely than women to drink in response to stressful events because they are socialized to externalize distress, whereas women are socialized to internalize it (Cooper, Rusell, Skinner, Frone, & Mudar, 1992; Cooper, Frone, Russell, & Pierce, 1997). In contrast, Klassen, Wilsnack, Harris, and Wilsnack (1991) found that women whose relationships lacked intimacy reported an increase in problem drinking five years later

compared to women with more intimate relationships, which is also in line with the notion that women are uniquely responsive to interpersonal stressors (Wethington, McLeod, & Kessler, 1987). (Men were not included in Klassen et al. study.) Thus, it appears that both men and women might drink in response to relationship difficulties, though perhaps men are more sensitive to conflict and women to lack of intimacy.

Although these studies provide evidence that prior relationship difficulties can lead to later drinking, the protracted time frame cannot inform us about the short-term or acute effects of relationship processes on drinking. However, a number of daily process studies, though not necessarily focusing on romantic relationships, provide clearer insight into the day-to-day processes that might link relationship functioning and alcohol use.

Carney, Armeli, Tennen, Affleck, and O'Neil (2000) conducted a diary study in which a community sample of adults completed daily reports of alcohol use and events, including interpersonal ones, for 60 days. They found that separate composites of positive and negative non-work events, which included spouse/partner interactions, were significantly associated with a higher desire to drink as well as higher levels of consumption. This is in line with the supposition that alcohol can be used to enhance positive experiences as well as regulate negative ones (Cooper, et al., 1995), and that relationship events might drive both the desire to drink and actual drinking. However, because relationship events were not analyzed separately, it is impossible to know which of the events included in the composite measure were responsible for the observed effects.

Hussong, Galloway, and Feagans (2005) also studied college students using a diary methodology in which alcohol use and multiple mood assessments were recorded

daily for 28 days. Results showed that students were significantly more likely to drink to cope on days when they experienced moderate to high levels of fear or shyness, but not sadness. These data provide further evidence for negative emotional experience as antecedents to alcohol use, and also raise the possibility that at least certain negative interpersonal emotions are particularly important catalysts to drinking.

Finally, Mohr, Armeli, Tennen, Carney, Affleck, and Hromi (2001) had a community sample of adults complete daily reports of alcohol use and positive and negative interpersonal exchanges for 30 days. Results showed that on days when individuals experienced negative interpersonal exchanges they were more likely to drink in solitary contexts (i.e., alone and at home), whereas positive interpersonal exchanges were associated with drinking in relatively more social contexts (i.e., with others). By extension, these findings suggest that individuals may drink away from their partners after negative experiences, whereas they may drink with their partners following positive experiences.

In sum, these studies suggest that both positive and negative relationship events, and the corresponding emotions they generate, may serve as catalysts for alcohol use, although these effects may differ by gender. In addition, they raise the possibility that positive and negative events differentially trigger drinking with one's partner vs. apart which, in turn, has been linked to positive and negative effects, respectively, on relationship functioning (Homish & Leonard, 2005). Nevertheless, given the small number of studies conducted on these issues and the failure of these studies to isolate close relationship processes, there is a clear need for additional research examining this link in romantic relationships.

Hypotheses

Based on the research and theory reviewed above, the proposed study will test the following hypotheses.

Main Effect Hypotheses

Alcohol Use Predicts Relationship Functioning (A1). We expect that alcohol use on a given day will significantly predict relationship functioning the next day, though the nature of this effect will be qualified by the amount consumed and the drinking situation. That is, we expect that heavy alcohol use on the current day will predict poorer relationship functioning (e.g., increased negative partner behaviors) the next day, whereas light to moderate drinking might actually predict positive relationship functioning (e.g., increased intimacy) the next day. This effect would be manifest in a significant curvilinear effect of quantity of alcohol consumed on relationship functioning.

We also expect that drinking with one's partner versus apart on a given day will predict an increase in positive relationship functioning and a decrease in negative relationship functioning the next day. Drinking with one's partner might also interact with amount consumed to attenuate the adverse effects of drinking on subsequent relationship functioning.

Relationship Functioning Predicts Alcohol Use (B1). Conversely, we also expect that relationship functioning on a given day will significantly predict alcohol use the next day. Specifically, we expect that daily reports of relationship problems and (low) intimacy will predict an increase in subsequent alcohol use. Alternatively, daily reports of positive relationship events are also expected to predict increased alcohol use the next day.

Gender Differences. Both research and theory raise the possibility of gender differences in the strength or existence of these effects. Because men have been shown to drink more than women (NIAAA, 1992), the deleterious effects of drinking (which we hypothesize to occur at higher doses) might be stronger for male partner use.

Expectations regarding gender differences in the effects of relationship functioning on drinking are less clear, however, and may differ as a function of the specific aspect of relationship functioning under consideration. Because men have been shown to drink more than women in response to stress (e.g., Cooper et al., 1992; Cooper et al., 1997), effects of relationship problems on subsequent drinking might be stronger for men. On the other hand, because women have been shown to drink in response to low intimacy in relationships (Klassen, Wilsnack, Harris, & Wilsnack, 1991) as well as to network events (i.e., events involving close others, which could be considered an analog to relationship events; Cooper et al., 1997), this association might be stronger for women.

CHAPTER 2: METHOD

Adult romantic couples completed an initial interview, followed by roughly three weeks of daily diary reports, and then an exit interview. During the diary portion of the study, couple members carried Palm Pilot computers to complete daily morning and evening questionnaires.

Participants

Eighty-one romantic couples were recruited via newspaper advertisements, flyers, and Introductory Psychology courses from the University of Missouri community. Participants were 90% Caucasian, 4% African-American, and 6% other races. The average age of men (20.9 years) was very similar to that of women (20.1 years), with an age range of 18 to 47 years across all participants. Most couples (90%) considered themselves to be 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. For reasons unrelated to the present study, participants were required to have been involved in a sexual relationship for at least 30 days in order to participate in the study.

Study Design and Procedure

All participants attended an introductory session on the University of Missouri-Columbia campus. The study protocol was explained to participants, and sample questions from the initial interview were presented for participants to review before the study began. Participants then completed a comprehensive computerized initial interview, assessing demographics, relationship information, and a host of psychological variables.

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 reports each day. Participants returned within a few days to be trained on the diary phase protocol. They were instructed how to operate the Palm Pilots, and how to maneuver through the menus 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. Participants also reviewed the questions that were programmed on the palm pilots to insure they were comfortable with the content of the items. They were then allowed to inform the researchers of any items they found objectionable. However, none of the participants indicated discomfort with any of the items.

To protect participants' confidentiality, a three-digit identification number was issued that served as a password to activate the Palm Pilot, thus allowing access to the daily questionnaires. Moreover, participants were shown that once a daily report was completed and stored in the Palm Pilot, 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 that same day.

Depending upon limits imposed by the academic calendar (i.e. holidays, breaks), couples participated in the diary phase for up to 25 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). 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 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 prorated based on the percentage of reports completed at the end of the study. In the current sample, compliance with the diary protocol was high with participants completing on average 17.74 morning reports (range = 2 – 25) and 18.06 evening reports (range = 1 – 25).

Measures

Data for the present study were taken from the morning and evening questionnaires. The following will detail the important scales and items used for this study in relation to the assessment in which they appeared. Descriptive information on key study variables can be found in Table 1a, and an outline showing how measures were included in daily reports can be found in Table 1b.

Daily Alcohol Use. Individuals reported on their prior day alcohol use in the daily morning questionnaire. Single items were used to examine 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"). A composite of four items assessing negative alcohol effects was also included (e.g., vomiting, headache, etc.). In the current sample, the four-item composite was highly reliable ($\alpha = .89$). Finally, participants were also asked with whom the drinking occurred (e.g., partner, same-sex friend, opposite-sex friend, etc.). Responses were scored 1 if they drank with their partners and 0 if they did not. Relevant items from the morning questionnaire can be seen in Appendix A. Correlations between alcohol variables can be seen in Table 2a.

In the current sample, 125 of the 164 individuals consumed alcohol at least once during the course of the study. Drinkers filed 518 total drinking reports, or 5.38 drinking reports completed per person on average (range = 1 - 25). On average, just over 5 drinks (mean = 5.31 drinks; range = 1 - 30) were consumed per drinking occasion. As expected, average consumption was higher for men (6.28 drinks) than for women (4.05 drinks). 13.2% of male drinkers reported 1 or more negative effects following a drinking occasion versus 13.3% of female drinkers. Finally, women were more likely to drink with their

partners than men; 63% of all female drinking reports occurred with their partner vs. only 52% of reports among men.

For analytic purposes, we focus on three of alcohol use variables. First, because drinking quantity and intoxication were highly correlated ($r = .94$, $p < .01$), and the pattern of effects was very similar, we report results only for intoxication.[1] Second, we were unable to analyze negative alcohol effects because only 14 people in our sample reported negative effects on more than one occasion. Thus, within-person analyses on this variable would have been restricted to these 14 people.

Daily Relationship Functioning. Four measures of relationship functioning were assessed each day – two assessing negative aspects of relationship functioning and two assessing positive features. Correlations among the relationship variables can be found in Table 2b.

Intimacy was assessed by a composite of three items taken from the morning report asking participants how happy, in love with, and close to their partners they felt at the time they completed the report. In the current sample, this composite was highly reliable ($\alpha = .91$). Women reported higher intimacy on average than men (4.49 vs. 4.30).

Negative partner behaviors were measured by 9 items assessing complaints or problems with the partner such as "Did your partner criticize you today?" and "Did your partner ignore you today, or act cool and distant?" For these items, participants answered on a five point scale where 1 = "NO!!" 2 = "no," 3 = "maybe," 4 = "yes," and 5 = "YES!!" For analytic purposes, the average of responses to all items was used as the index of negative relationship events. Women filed 6.27 reports of negative partner

behaviors on average versus 5.47 for men. In the current sample, these items formed a highly reliable composite ($\alpha = .87$).

Participants were also asked to think about the worst thing that happened to them during the day, followed by 6 items asking how the experience affected them (on a 5-point scale where 1 = "Not at all" and 5 = "Extremely") and whether it involved their partner (yes or no). An example of a negative event-rating item would be, "To what extent did this event/problem make you feel incompetent or stupid?" A similar set of 4 items was also asked about the best thing that happened each day and whether it involved one's partner. An example of a positive event-rating item would be, "To what extent did this event make you feel competent or capable?"

For analytic purposes, separate measures of positive and negative relationship events were created in which events that involved one's partner were set equal to the mean rating of the 6 impact items (for negative events) or 4 items (for positive events). Events that did not involve the partner were scored 0. Thus, scores could range from 0 to 5 on both event scales. In the current sample, reliabilities computed among the event rating items were .87 and .84 for negative and positive events, respectively. In all, participants reported 556 reports of negative events and 1277 reports of positive events that involved their partners. Relevant items from the evening questionnaire can be seen in Appendix B.

Overview of Analyses

The data from this study conform to a hierarchical data structure. That is, daily reports of alcohol use and relationship functioning (modeled at Level 1) are nested within individuals (Level 2), which are nested within couples (Level 3). Because of this design,

Hierarchical Linear Modeling (HLM; Raudenbush and Bryk, 2002), version 6 (Raudenbush, Bryk, Cheong, and Congdon, 2004), was used to analyze all variable models. HLM allows for the estimation of within-subjects (Level 1 data), between-subjects (Level 2), and between-couples (Level 3) variation simultaneously. Therefore, HLM allows for the modeling of each source of variation while accounting for the statistical characteristics of the other. An additional benefit of HLM is that it allows for missing data at Level 1. The following describes the general organization of the models analyzed in the current study.

Separate analyses were conducted to estimate the bidirectional effects of alcohol use on relationship functioning and of relationship functioning on alcohol use. Furthermore, all models were estimated twice, once using self-reports and once using the corresponding partner report. Thus, we estimated 24 equations predicting relationship functioning (4 relationship outcomes X self and partner report X 3 alcohol predictors), and 24 equations predicting alcohol use (3 alcohol outcomes X 4 relationship predictors X self and partner report). In addition, cross-level gender interactions were tested for all estimated effects.

All models predicting alcohol outcomes were structured similarly in that each included a single relationship predictor variable and controlled for the corresponding measure of prior day alcohol use. However, all models predicting drinking with one's partner included an additional control: whether the individual drank that day (0 = no, 1 = yes) was also controlled to ensure that observed effects were due to conjoint drinking as opposed simply to drinking.

Models predicting relationship outcomes were somewhat more complex. Like models predicting alcohol outcomes, each equation predicting a relationship outcome controlled for a corresponding prior measure of relationship functioning. In contrast to equations predicting alcohol use, however, equations predicting relationship functioning simultaneously estimated the effects of drinking with one's partner and consumption (i.e., drinking with one's partner and either intoxication or the drink dichotomy were entered together as predictors). This approach ensured that the two effects (which were highly correlated, r's = .65 and .72, $p < .01$) could be disentangled. Finally, the higher-order effects of the consumption X drinking with one's partner interaction and the curvilinear effects of intoxication were also tested for each relationship outcome.

Below is a representative model predicting relationship functioning:

$$\text{Next Day a.m. Intimacy}_{jkt+1} = \pi_{0jk} + \pi_{1jk}(\text{Consumption})_{jkt} + \pi_{2jk}(\text{Drink With Partner})_{jkt} + \pi_{3jk}(\text{a.m. Intimacy})_{jkt} + e_{jkt,} \quad (3)$$

where "Next Day a.m. Intimacy" is person *j* of couple *k*'s reported level of intimacy on day $t + 1$; π_{0jk} is the predicted value of intimacy for person *j* when consumption equals zero on day *t*; π_{1jk} is the partial within-person regression coefficient for consumption by person *j* on day *t*; π_{2jk} is the partial within-person regression coefficient for whether person *j* drank with his or her partner on day *t*; π_{3jk} is the partial within-person regression coefficient for person *j*'s level of a.m. intimacy on day *t*; and e_{jkt} is a random residual component.

The following general procedures were followed across all analyses. As recommended by Raudenbush and Bryk (2002), Level 1 predictor variables were group-mean centered (in this case, centered on the person's own mean) when main effects were

estimated. As such, the π_{0jk} coefficient in Equation 3 can be interpreted as the predicted value of intimacy when Level 1 predictors are at their within-person average. Higher-order terms (i.e., interactions between two Level 1 variables and curvilinear terms) were first created in SPSS by centering the variables on the between-person means and then entered into HLM uncentered. At Level 2, which controls for between-persons variance, gender was entered into all models grand-mean centered (i.e., centered on the mean across all individuals in the sample) to control for gender differences in Level 1 reports. Gender was also entered at Level 2 to test for cross-level interactions with Level 1 independent variables (e.g., gender predicting π_{1jk} from Equation 3). Other individual-level variables such as age and race were tested in a series of preliminary analyses, but were not significant, most likely because of a lack of variation (i.e., our sample was predominantly college-aged and Caucasian). Finally, couple-level variance was controlled at Level 3, though specific couple-level variables (e.g., relationship status) were not examined in the present study.

Across all analyses, control, independent, and dependent variables were selected to ensure that (1) control variables were temporally prior to both the independent and dependent variable reports, and (2) the independent variable was temporally prior to the dependent variable report. At the same time, we attempted to select the most proximal report available to maintain the shortest temporal lag as short as possible. For example, in analyses predicting next day a.m. intimacy, current day a.m. intimacy reports were used as the control for prior intimacy level because they were temporally prior to next day intimacy and almost certainly temporally prior to drinking reported in the p.m. of that same day (i.e., the predictor). In contrast, the temporal order between same-day

relationship events and drinking, both of which were reported on the p.m. report, was uncertain. For this reason, when predicting relationship events, we used prior day relationship events as a control variable, current day drinking as the predictor, and next day events as the outcome. Thus, the temporal lag was consistently longer in analyses using relationship events and partner behaviors than for analyses using intimacy, and this was true whether these variables were treated as independent or dependent in the model.

CHAPTER 3: RESULTS

Alcohol Use Predicting Relationship Functioning

Results for main effects predicting relationship functioning from alcohol use are presented in Table 3. Tabled coefficients are unstandardized. Effects are tabled only for those dependent variables that yielded one or more significant main effects. Because no main effects were found for positive relationship events, these findings are not presented.

Effects of drinking on intimacy. As shown in the first and second columns of Table 3, whether the individual drank did not predict next day levels of AM intimacy, as reported by either couple member. However, drinking to intoxication predicted lower feelings of intimacy in one's partner the next day, though it did not affect one's own feelings of intimacy. In contrast, drinking with one's partner (versus apart) led to increased feelings of intimacy the next day for both oneself and one's partner, suggesting that drinking with one's partner can have beneficial effects on relationship functioning for both couple members.

The fact that drinking with one's partner led to increased intimacy among both couple members raises the possibility that drinking was a prelude to sex, or promoted sex, which in turn boosted feelings of intimacy. Supplemental analyses were conducted to determine whether having sex mediated the drink-with-partner → intimacy effect. Although having sex predicted subsequent increases in intimacy (b = .047, p = .06), drinking with one's partner did not predict intercourse probability (b = .208, *ns*). Thus, there is no evidence that having sex mediated the observed effect.

Effects of drinking on negative partner behaviors. As shown in the third and fourth columns of Table 3, whether the individual drank alcohol was unrelated to negative partner behaviors, as perceived by both couple members. However, individuals who drank to intoxication perceived their partner's behavior as more negative the next day, though the partner did not in turn perceive the drinker's behavior as more negative. At the same time, individuals who drank with their partner perceived their partner's behaviors as less negative (or more positive) the next day, although the partner did not perceive the drinker's behavior any differently.

Effects of drinking on negative events. As shown in the fifth and sixth columns of Table 3, and consistent with prediction, both drinking and drinking to intoxication significantly positively predicted the intensity of negative events on the following day, as reported by both couple members. Drinking with one's partner, in contrast, was unrelated to next day negative events, according to both couple member's reports.

Effects of drinking on positive events. As indicated above and contrary to prediction, none of the alcohol variables predicted either self or partner reports of positive events the next day (data not shown).

Are effects for degree of intoxication non-linear? A curvilinear component (computed by squaring the intoxication variable; Pedhazur, 1997) was added to each of the above equations to determine whether the effects of intoxication increased at higher levels. Contrary to expectation, however, none of the curve components was significant (all b's < -.062, *p*'s > .167). Thus there was no evidence that low levels of intoxication might be beneficial while higher levels are deleterious.

Does drinking with one's partner moderate the negative effects of consumption on relationship outcomes? Interactions between drinking with one's partner and drinking to intoxication were also tested. However, none of the 6 interactions was significant (b's < .056, *p*'s > .453).

Supplemental analyses with quantity consumed did, however, reveal one significant drink-with-partner interaction (of 8 tested). Plotting the interaction revealed that quantity was related to decreased partner-reported intimacy (b = -.046, $p < .05$) when the individual drank apart from his or her partner but not with his or her partner (b = .043, *ns*). Thus, some weak support for the expected buffering effects of drinking with one's partner was found.

Are the effects of drinking the same for men and women? Results of models testing cross-level gender interactions are shown in Table 4. Effects are tabled only for those dependent variables that yielded one or more significant interactions. Because no interactions were found for negative partner behaviors or positive events, these findings are not tabled.

As shown in Table 4, cross-level gender interactions were obtained for the effects of drinking and of drinking to intoxication on self- (but not partner-) reported intimacy and negative events. Plotting the interactions showed that three out of four effects were stronger for women than men. As shown in Figure 2 (top panel), women reported higher intimacy the day after drinking (b = .126, $p < .05$), whereas reported levels of intimacy did not differ among men as a function of prior day drinking (b = -.018, *ns*). At the same time, however, women (b = .353, $p < .001$) but not men (b = .084, *ns*) also reported more intensely negative events with their partners following a drinking day (Figure 2, mid-

panel), a pattern that was replicated using the intoxication variable (see bottom panel, Figure 2). Although these findings seem somewhat counterintuitive, it is possible that women's increased feelings of intimacy in the morning led to unfilled relationship expectations later in the day.

Though clearly speculative, this interpretation is supported by the fact that men (but not women) reported significantly lower feelings of intimacy as a function of increasing levels of intoxication on the prior day (see Figure 3). In short, the fact that men felt more distant, while their partners felt closer may have set the stage for negative interactions, at least as perceived by the female partner.

Summary. To help integrate the findings across analyses, separate figures were created to summarize the self-report results for men and women (see Figure 4). Partner report findings were identical across gender; therefore only a single figure was needed to summarize these findings (see Figure 5). The left-hand portion of each figure summarizes the effects of prior drinking on later relationship functioning.

At the broadest level, these analyses suggest that drinking as well as drinking to intoxication exerts largely negative effects on subsequent relationship functioning. Indeed, in the only exception to this pattern, drinking vs. not drinking was associated with increased feelings of intimacy among women only. Second, drinking with one's partner exerted uniformly positive effects on feelings of intimacy and perceptions of negative partner behaviors among both men and women. Third, effects on partners were limited to two of the three relationship functioning indices (i.e., intimacy and negative events) and, as already mentioned, were identical across men and women. Finally,

alcohol effects on relationship functioning were somewhat more consistent for women than men (6 significant effects vs. 4).

Relationship Functioning Predicting Alcohol Use

Results for main effects predicting alcohol use from relationship functioning are presented in Table 5. Tabled coefficients are unstandardized. Effects are tabled only for those independent variables that yielded one or more significant main effects. Because no effects were found for negative or positive events, these findings are not presented in the table.

Effects of intimacy on next day drinking. As shown in the first and second rows of Table 5, self- (but not partner-) reported intimacy was negatively associated with drinking to intoxication and with drinking with one's partner the next day. Thus, both effects were within- rather than across reporters. Intimacy was not, however, associated with the probability of drinking (yes, no) the next day.

Effects of perceived negative partner behaviors on next day drinking. As shown in the third and fourth rows of Table 5, self-reported negative partner behaviors positively predicted whether or not the individual drank, drank to intoxication, and drank with his or her partner the next day. However, partner reports of one's own negative behaviors were not associated with next day drinking. Thus, the effects were entirely within-reporter.

Effects of negative events on next day drinking. Negative events with one's partner did not significantly predict next day drinking, intoxication, or drinking with one's partner, as reported by either couple member (data not shown).

Effects of positive events predicting next day drinking. Positive events with one's partner did not predict next day drinking, drinking to intoxication, or drinking with one's partner, as reported by either couple member (data not shown).

Are the effects of relationship functioning on alcohol use the same for men and women? Results of models testing cross-level gender interactions are shown in Table 6. Gender interacted with self-reported intimacy to predict next day intoxication and drinking with one's partner, but not whether individuals drank. As shown in Figure 6, a similar pattern emerged for both interactions. In each case, women (but not men) were more likely to drink heavily, or to drink with their partners at low compared to high levels of intimacy, whereas drinking among men was unaffected by feelings of intimacy.

Gender also interacted with perceived negative partner behaviors to predict drinking with one's partner the next day. As shown in Figure 7, as perceived negative partner behaviors increased, the probability of drinking with one's partner the next day increased significantly for women but not for men.

Summary. The effects of relationship functioning on alcohol use are schematically summarized in the right-hand portion of Figures 4 and 5. Broadly speaking, these analyses suggest that one's own, but not one's partner's, perceptions and feelings influence later drinking. Second, the effects of relationship processes and experiences were more numerous and more consistent for women than men. Although perceiving one's partner's behavior in a negative light was associated with increased probability of drinking and drinking to intoxication among both men and women, only women's drinking was influenced by their feelings of intimacy and only women appeared to drink with their partner in response to negative relationship processes.

CHAPTER 4: DISCUSSION

In the current study we showed that daily alcohol use and relationship functioning indeed have bidirectional effects, that many of these effects differ across gender, and that some also differ between self and partner reports. With some exceptions, the hypothesized bi-directional associations between alcohol use and relationship functioning as well as the hypothesized moderating effects of gender were largely supported.

First, strong support was received for the hypothesis that heavy alcohol use would predict poorer next day relationship functioning; however, contrary to expectation, effects were not curvilinear. Intoxication predicted increases in later perceptions of negative partner behaviors for oneself across gender, though not for partner perceptions of one's own behavior. Intoxication also predicted partner reports of decreased intimacy and increased negative events the next day for both men and women, though self-reports of these effects differed by gender. Although we hypothesized that the deleterious effects of drinking would be stronger for men, only one effect was found in support of this idea. That is, intoxication predicted decreased intimacy the next day for men but not women. Unexpectedly, intoxication predicted increased negative events the next day for women but not men. Additionally, although not hypothesized, effects of whether one drank or not on subsequent relationship functioning were also found, some of which again differed by gender. Drinking vs. not predicted self-reports of negative events the next day for women only, whereas partner reports of this effect were found for both men and women. In contrast to the above findings, in the only positive effect found for consumption on later

relationship functioning, drinking vs. not for women (but not men) was related to increased intimacy the next day.

Second, strong support was also found for the hypothesis that drinking with one's partner would predict increases in positive relationship functioning and decreases in negative relationship functioning. Drinking with one's partner predicted an increase in next day intimacy for both oneself and one's partner across gender. Furthermore, drinking with one's partner predicted a decrease in self- (but not partner-) reports of perceived negative partner behaviors the next day across gender. However, contrary to expectation, drinking with one's partner did not moderate any of the effects of consumption on later relationship functioning.

Third, strong support was found for the hypothesis that relationship problems would predict an increase in subsequent alcohol use. Specifically, both men and women drank in response to their perceptions of negative partner behaviors the day before. Support for hypothesized gender differences in these effects was mixed. Contrary to expectation, no effects of relationship problems on subsequent drinking were stronger for men. However, consistent with expectation, women were more likely than men to drink to intoxication following low levels of intimacy. Furthermore, women were more likely than men to drink with their partners following low levels of intimacy and high levels of perceived negative partner behaviors.

Fourth, contrary to hypotheses, no support was received for positive events with one's partner as antecedents to or consequences of alcohol use.

The current study's findings suggest a number of important implications. First, although effects for consumption on subsequent relationship functioning were largely

negative, drinking with one's partner consistently showed beneficial effects on the relationship. This suggests that drinking with one's partner versus apart is an important distinction when considering the effects of drinking in romantic relationships. While it is not immediately clear whether these effects are due to both couple members drinking together, or simply the fact that one's drinking is done in the presence of one's partner, these results are in line with previous research showing that partners drinking together vs. separately can have varying effects on relationship functioning (e.g., Homish & Leonard, 2005). These results are also contrary to those of Mohr et al. (2001) showing that individuals were more likely to drink alone following negative interpersonal exchanges than individuals who experienced positive interpersonal exchanges, suggesting that the realm of romantic relationships is fundamentally different from other types of interpersonal interactions, and that effects found in one realm might not be analogous to those found in another.

Second, because the moderating effects for gender were more numerous consistent among women than men suggests that alcohol might play a larger role in the romantic relationships of women compared to those of men. Although this idea runs somewhat counter to the literature as a whole (Roberts & Linney, 2000), it is in line with previous research showing that women were more likely than men to drink in response to network events involving close others (Cooper et al., 1997) as well as low levels of intimacy in the relationship (Klassen et al., 1991). Moreover, our results interestingly showed that while relationships of both men and women benefit from drinking with one's partner, only women seem to drink with one's partner in response to negative relationship functioning. Although speculative, one possible interpretation is that women (contrary to

men) recognize the beneficial effects of drinking with one's partner and therefore try to strategically use that mechanism in response to negative relationship processes as a means of restoring balance or harmony in the relationship. This process as a whole appears to be adaptive and healthy for romantic relationships, whereas other uses of alcohol for men and women appear to be self-medicating responses to relationship distress and hence maladaptive.

Finally, the fact that there were clear differences between self- and partner-reports for some effects highlights the importance of using reports of both couple members in studies of alcohol use and relationship functioning. For example, that drinking with one's partner benefited later feelings of intimacy for oneself and one's partner suggests that this process is not only recognized by both couple members, but also similarly important for the health of the relationship for each member. On the other hand, it is clear that other effects are either not perceived or not as important to partners as they are to oneself. Thus, studies of relationship processes that only use reports of one couple member are not able to determine whether one's reports are corroborated by his or her partner, and are therefore limited in the interpretations they can make of those effects.

Strengths and Limitations of the Current Study

The present study, while not without its limitations, 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 (described more fully below). 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.

To the best of our knowledge, the proposed study is also the first to use diary methods to examine bidirectional associations between daily alcohol use and relationship functioning in a normal population sample of couples. Although the diary method is not without costs (described below), it enhances our ability to examine these issues in several important ways. For one, 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, which reduces distortions in memory and inaccuracies in reporting, thus yielding greater accuracy in measurement of core constructs (Shiffman, 2000).

Additionally, diary studies, such as the present one, conducted using handheld computers allow for the implementation of a time check that provides an exact time for when a report was filed relative to when the reported behavior occurred (Tennen and Affleck, 2002). In the current study, this aspect also enabled us to impose a temporal order in a sequence of events. Retrospective diary and summary methods do not allow for such control, therefore making it difficult to connect reports with a given instance. Additionally, time stamps have been shown to increase the timely completion of questionnaires to the extent that participants know that their compliance can be verified (Shiffman, 2000). This aspect likely benefited compliance in the current study, which, as previously mentioned, was very high. 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 as well as violations of privacy by others.

Furthermore, 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 and Gmel, 2005), and in treatment and community samples here in the US using both electronic and paper diaries (Carney, Tennen, Affleck, Del Boca, and 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.

Relatedly, because the data from such a design are nested hierarchically, we are able to model these daily processes in HLM while simultaneously accounting for the variation in individual-level and couple-level variables. Thus, we are able to examine daily within-person variation in alcohol use and relationship functioning while simultaneously estimating how between-person variation (e.g., gender) moderates these effects.

Finally**,** contrary to the majority of existing studies that used only males, our study included both couple members and their reports of alcohol use and relationship

functioning. As suggested by the current study's varying findings between self- and partner-reports, the study of the couple as a whole instead of just one member is vital to understanding the dynamic and highly interdependent processes of romantic relationships (Cooper, 2002b).

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, our sample was fairly homogeneous in that participants were overwhelmingly White, well educated, high functioning, and mostly college-aged. Accordingly, our results may not generalize well to other ethnic groups, to less well-educated or well-functioning individuals, or to young adolescents or older adults. Moreover, because most couples in our sample reported similar relationship status results may not generalize to individuals in other types of relationships, especially marriages or relationships of longer durations. Additionally, because our sample was normative in their drinking patterns, and not a very heavy drinking sample, the data somewhat limited the types of analyses that could be conducted on it. That is, because drinking reports comprised roughly only one-fifth of the total number of daily reports, we did not have a sufficient number of drinking reports to conduct more refined analyses of alcohol effects, for example.

Other limitations of the current study concern measurement issues. First, items that assessed positive and negative daily events could have been more sensitive. Participants were instructed to think of and report on the best and worst things that occurred that day; however, no assessment was made as to what these events actually were. Although the existing follow up items assess the impact these events had on

participants, lack of knowledge of what the events were is problematic for the interpretation of results because it is impossible to know whether the event pertained to the relationship (e.g., a severe argument between partners about joint financial matters) or not (e.g., one's car broke down and the situation happened to involve one's partner). Additionally, because of the way daily reports were structured, our ability to capture short-lived effects might have been limited. In other words, the temporal lag between reports of alcohol use and reports of negative and positive events the next day might have been too long to capture certain highly transient effects of drinking. By extension, because negative events have a longer rate of decay and are less transient than positive events, could be one explanation for why we did not find any effects for positive events.

Second, while we measured perceived negative partner behaviors, we failed to ask participants about their own behaviors that day. This information would help us to parse out whether the observed effects largely reflect perceptual phenomena or actual partner behaviors. Third, we did not measure relationship-specific alcohol expectancies. This information would be valuable for future studies, especially concerning why individuals might have drunk in response to negative relationship processes (e.g., as a belief that it will not only help remove negative effects of poor relationship functioning, but that it will actually bring partners closer together as well).

Future Directions

The key findings of the current study, namely that effects can differ between partners and across gender importantly suggests that future studies of romantic relationships use reports of both couple members. Moreover, future studies of drinking in romantic relationships should examine specific details of drinking contexts, namely

whether drinking occurs with or without one's partner. Concerning other measurement issues, future research should use more detailed measures of relationship events and include measures of expectancies as they apply to romantic relationships in order to more sensitively assess these often transient effects. Finally, concerning the acquisition of a sufficient number of drinking reports to allow detailed analyses, future research should recruit a fair number of heavier drinkers to supplement more normative drinkers to ensure a larger number of drinking reports. Alternatively, future studies assessing alcohol use could extend the length of time of the diary phase of the study, though researchers should determine study lengths cautiously as to maintain report compliance by participants.

In conclusion, the current study took an important first step in assessing the bidirectional effects of alcohol use and relationship functioning in a normal population sample of romantic couples using reports of both couple members. By placing drinking in specific daily contexts and by using corroborating partner reports, we are better able to see how these phenomena affect each other from day to day. The implications of the results in the current study show promise for future research on romantic relationships and substance use that use detailed, daily, context-specific methodologies.

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Footnotes

[1] Therefore, because intoxication seemed to yield the strongest findings, it was subsequently used in all further analyses instead of drinking quantity. Additionally, intoxication did not significantly interact with drinking with one's partner to significantly predict any relationship functioning variables, nor did drinking of any kind have any significant curvilinear effects on subsequent relationship functioning variables. Thus, these effects are not reported and will not be discussed further.

APPENDICES

Appendix A

Daily Items from the Morning Questionnaire

The following are the alcohol-related items that participants completed as part of the daily morning questionnaire that are relevant to the current study. 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. 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.

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

   1 = Not at all, 5 = Extremely

4. Did you feel sick to your stomach or throw up because of your drinking?

   Yes No

5. Did you pass out because of your drinking?

   Yes No

6. Did you black out (e.g., forgot how you got where you were or what you did while drinking) because of your drinking?

   Yes No

7. 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

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

   1 = Not at all, 5 = Extremely

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

   1 = Not at all, 5 = Extremely

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

    1 = Very Unhappy, 5 = Very Happy

Appendix B

Daily Items from the Evening Questionnaire

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

1. Please think about the most STRESSFUL thing that happened to you today.

2. Was this event about? Select an event.

    Experience with partner
    Experience with friend
    Experience with parent/family member
    Experience with boss, teacher, etc.
    Experience with co-worker, student
    Experience with roommate

The following 6 items are answered on the following scale: 1 = Not at all, 5 = Extremely.

3. Overall, how stressful was this event?

4. To what extent did this event/problem make you feel incompetent or stupid?

5. To what extent did this event/problem make you feel lonely, left out, or like you didn't belong?

6. To what extent did this event make you feel like you were being controlled by something/someone else?

7. To what extent did you ruminate or worry about the situation?

8. To what extent did you feel threatened or overwhelmed by this event/problem?

9. Please think about the BEST thing that happened to you today.

10. Was this event about? Select an event.

    Experience with partner
    Experience with friend
    Experience with parent/family member

Experience with boss, teacher, etc.
Experience with co-worker, student
Experience with roommate

The following 4 items are answered on the following scale: 1 = Not at all, 5 = Extremely.

11. Overall, how positive was this event?

12. To what extent did this event make you feel competent and capable?

13. To what extent did this event make you feel connected to or valued by someone else?

14. To what extent did this event make you feel like you were in control of your life/situation?

15. The next questions ask about things that may have happened today between you and your partner.

Items 18 - 16 use the following response scale:

1 = NO!! 2 = no 3 = maybe 4 = yes 5 = YES!!

16. Did your partner make an important decision that would affect both of you without asking your opinion?

17. Did he/she fail to do something he/she was supposed to do (like a chore)?

18. Did he/she fail to give you the support you needed today?

19. Did you partner break a promise to you today?

20. Did your partner criticize you today?

21. Did your partner spend less time with you than you wanted?

22. Did you partner ignore you today, or act cool and distant?

23. Did your partner do something today that made you feel jealous?

24. Did your partner do something else that made you feel bad today?

Table 1a. Variable descriptives.

	Mean	SD	Skewness	Kurtosis	α
Drink Y/N	.178	.383	1.684	.836	n/a
Drunk	.264	.605	2.125	3.050	n/a
Drink with Partner	.102	.302	2.363	4.652	n/a
AM Intimacy	4.399	.794	-1.440	1.817	.91
Negative Partner Behaviors	1.530	.623	1.318	1.533	.87
Negative Events	.447	1.035	2.333	4.497	.87
Positive Events	1.771	2.108	.460	-1.614	.83

Table 1b. Outline of daily reports.

Report

	Day 1 Evening	**Day 2 Morning**	**Day 2 Evening**
Measures	Negative partner behaviors that occurred that day Negative events with one's partner that occurred that day Positive events with one's partner that occurred that day	Felt intimacy towards one's partner at that moment Day 1's alcohol use and related items	Negative partner behaviors that occurred that day Negative events with one's partner that occurred that day Positive events with one's partner that occurred that day

Table 2a. Correlations among alcohol variables.

	Drink Y/N (Self-Report)	**Drink Y/N (Partner Report)**	**Drunk (Self-Report)**	**Drunk (Partner Report)**	**Drink with Partner (Self-Report)**	**Drink with Partner (Partner Report)**
Drink Y/N (Self-Report)	1	**.428****	**.935****	**.407****	**.720****	**.419****
Drink Y/N (Partner Report)		1	**.407****	**.935****	**.419****	**.720****
Intoxication (Self-Report)	--	--	1	**.420****	**.651****	**.400****
Intoxication (Partner Report)	--	--	--	1	**.400****	**.651****
Drink with Partner (Self-Report)	--	--	--	--	1	**.496****
Drink with Partner (Partner Report)	--	--	--	--	--	1

** $p < .01$

Table 2b. Correlations among relationship variables.

	AM Intimacy (Self Report)	**AM Intimacy (Part Report)**	**Neg Part Behaviors (Self Report)**	**Neg Part Behaviors (Part Report)**	**Neg Event w/ Partner (Self Report)**	**Neg Event w/ Partner (Part Report)**	**Pos Event w/ Partner (Self Report)**	**Pos Event w/ Partner (Part Report)**
AM Intimacy (Self Report)	1	**.304****	**-.289****	**-.141****	**-.125****	**-.052****	**.212****	**.064****
AM Intimacy (Part Report)	--	1	**-.141****	**-.289****	**-.052****	**-.125****	**.064****	**.212****
Neg Part Behavs (Self Report)	**--**	**--**	1	**.186****	**.359****	**.171****	**-.164****	**-.045****
Neg Own Behavs (Part Report)	--	--	--	1	**.171****	**.359****	**-.045****	**-.164****
Neg Event w/ Part (Self Report)	--	--	--	--	1	**.253****	.014	.005
Neg Event w/ Part (Part Report)	--	--	--	--	--	1	.005	.014
Pos Event w/ Part (Self Report)	--	--	--	--	--	--	1	**.264****
Pos Event w/ Part (Part Report)	--	--	--	--	--	--	--	1

** $p < .01$

Table 3. Effects of drinking behavior on relationship variables.

Predictor	Outcome: AM Intimacy (Self Report)	AM Intimacy (Part Report)	Neg Part Behavs (Self Report)	Neg Own Behavs (Part Report)	Neg Event w/ Partner (Self Report)	Neg Event w/ Partner (Part Report)
Drink Y/N	.051	-.051	.019	.018	**.212****	**.203****
Drunk	-.036	**-.064***	**.050***	.008	**.148****	**.169****
Drink with Partner [a]	**.153****	**.125***	**-.111***	-.031	-.000	-.101

Note: * $p < .05$; ** $p < .01$.
Ns of Level 1 self reports for these analyses range from 2410-2641.
Ns of Level 1 partner reports for these analyses range from 2275-2359.
Interactions between Drink Y/N and Drink with Partner could not be estimated because values for these variables are partially overlapping (i.e., one has to have a value of 0 for Drink with Partner if they have a value of 0 for Drink Y/N).
[a] Effects were estimated controlling for intoxication.

Table 4. Cross Level Gender Interactions with Alcohol Variables

Predictor	**AM Intimacy (Self Report)**	**AM Intimacy (Part Report)**	**Neg Event w/ Partner (Self Report)**	**Neg Event w/ Partner (Part Report)**
Drink Y/N x Gen	**-.144***	ns	**-.269***	ns
Drunk x Gen	**-.080t**	ns	**-.173***	ns

Note: t $p < .10$; ns = not significant.
Ns of Level 1 self reports for these analyses range from 2410-2641.
Ns of Level 1 partner reports for these analyses range from 2275-2359.
No significant cross-level interaction effects were found for gender by alcohol use variables when negative partner behaviors or positive events with one's partner were the outcomes, or for gender by drinking with one's partner for any relationship functioning outcome. Thus, those coefficients are not shown.

Table 5. Effects of relationship variables on drinking behavior.

	Outcome		
Predictor	**Drink Y/N**	**Drunk**	**Drink with Partner** [a]
AM Intimacy (Self Report)	-.028	**-.045***	**-.294***
AM Intimacy (Part Report)	-.119	-.031	-.085
Neg Part Behavs (Self Report)	**.283****	**.053***	**.352****
Neg Own Behavs (Part Report)	.160	.014	.174

Note: t $p < .10$; * $p < .05$; ** $p < .01$.
Ns of Level 1 self reports for these analyses range from 2202-2529.
Ns of Level 1 partner reports for these analyses range from 2076-2276.
No significant results were found when negative or positive events were predictors. Thus, those coefficients are not shown.
[a] Analyses in which drinking with partner was the outcome controlled for whether individuals drank at all. Additionally, equations predicting dichotomous outcomes used Bernoulli estimation. Thus, coefficients from these models can be thought of as probabilities.

Table 6. Cross Level Gender Interactions with Relationship Functioning Variables

	Outcome	
Predictor	**Drunk**	**Drink with Partner** [a]
AM Intimacy (Self Report) x Gen	**.076***	**.361t**
AM Intimacy (Part Report) x Gen	ns	ns
Neg Part Behavs (Self Report) x Gen	ns	**-.465***
Neg Own Behavs (Part Report) x Gen	ns	ns

Note: t $p < .10$; * $p < .05$; ns = not significant.
Ns of Level 1 self reports for these analyses range from 2202-2529.
Ns of Level 1 partner reports for these analyses range from 2076-2276.
No significant cross-level interaction effects were found for gender by negative or positive events, or for when Drink Y/N was the outcome. Thus, those coefficients are not shown.
[a] Analyses in which drinking with partner was the outcome controlled for whether individuals drank at all. Additionally, equations predicting dichotomous outcomes used Bernoulli estimation. Thus, coefficients from these models can be thought of as probabilities.

Figure Caption

Figure 1. General schematic of the expected associations between alcohol use and relationship functioning.

Figure 2. Top panel is next day self-reported intimacy as a function of drinking or not moderated by gender. Middle panel is next day self-reported intensity of negative events as a function of drinking or not moderated by gender. Bottom panel is next day self-reported intensity of negative events as a function of intoxication moderated by gender. X and Y axes differ among panels.

Figure 3. Next day self-reported intimacy as a function of intoxication moderated by gender.

Figure 4. Top panel is schematic summary of significant self-reported effects for men. Bottom panel is schematic summary of significant self-reported effects for women. Solid lines represent effects common to both genders. Dashed lines represent effects unique to that gender. Intimacy and negative events were negatively correlated, but not shown due to space limitations.

Figure 5. Schematic summary of significant partner-reported effects for both men and women. Intimacy and negative events were negatively correlated, but not shown due to space limitations.

Figure 6. Top panel is current day intoxication as a function of self-reported intimacy moderated by gender. Bottom panel is the probability of drinking with one's partner as a function of self-reported intimacy moderated by gender. Y axes differ between panels. The plotted lines in the bottom panel are non-linear because logit values were converted into probabilities.

Figure 7. Probability of drinking with one's partner as a function of self-reported perceptions of negative partner behaviors moderated by gender. The plotted lines are non-linear because logit values were converted into probabilities.

Figure 1.

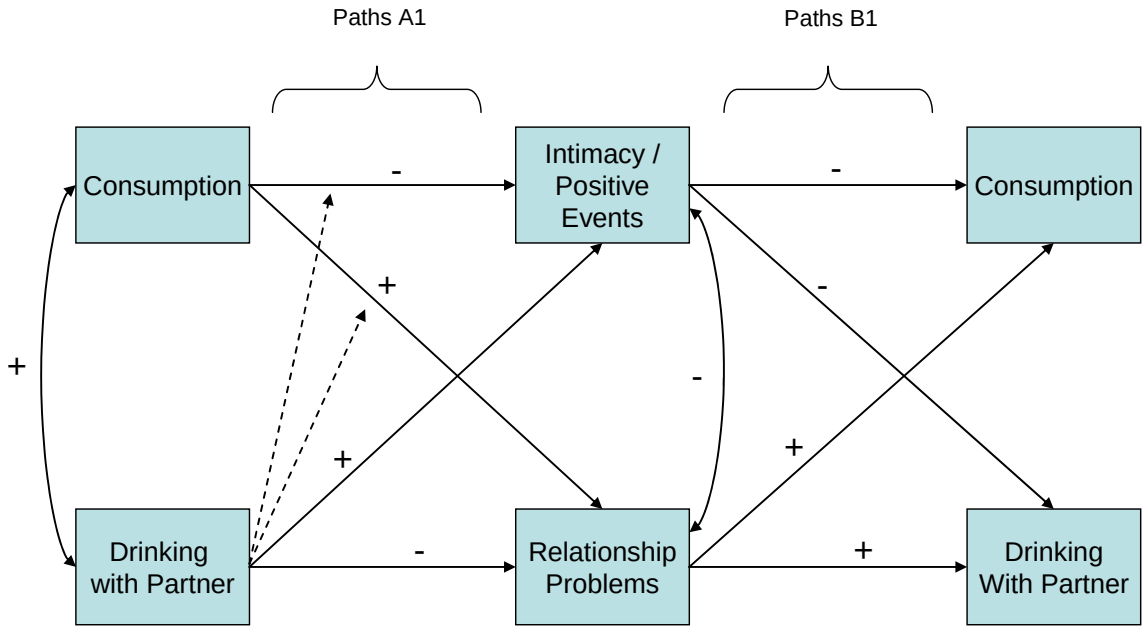
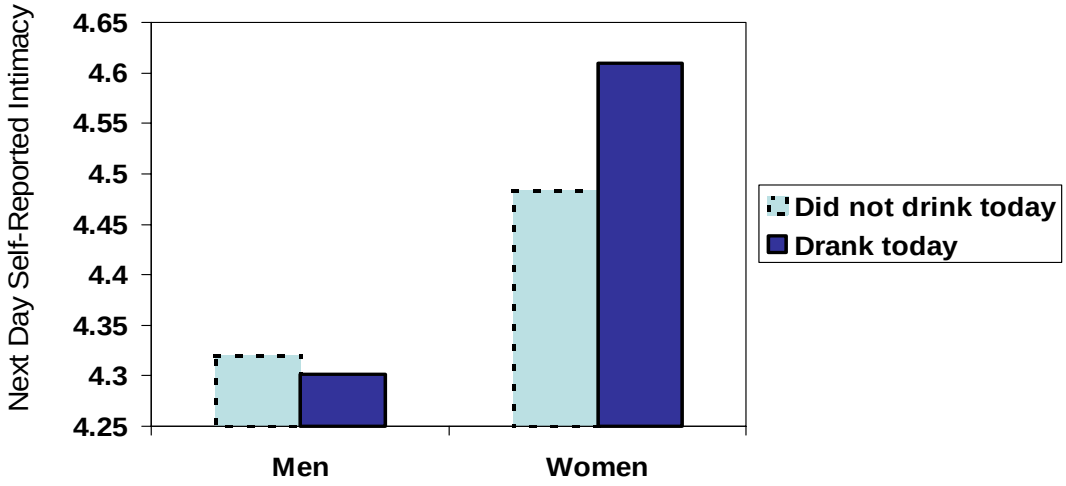
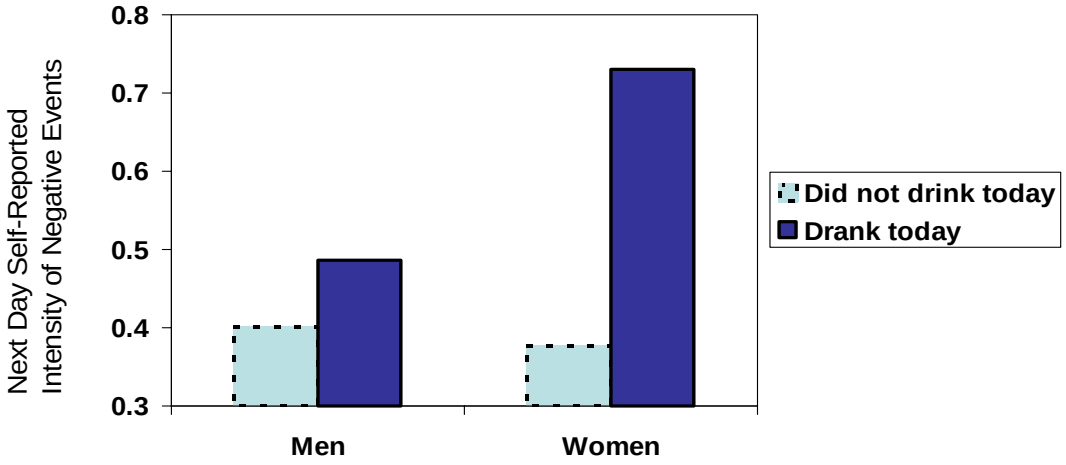

Paths A1
Paths B1
Consumption
Intimacy / Positive Events
Consumption
Drinking with Partner
Relationship Problems
Drinking With Partner
-
-
+
-
+
-
+
+
-

Figure 2.


Next Day Self-Reported Intimacy
4.65
4.6
4.55
4.5
4.45
4.4
4.35
4.3
4.25
Men
Women
Did not drink today
Drank today


Next Day Self-Reported Intensity of Negative Events
0.8
0.7
0.6
0.5
0.4
0.3
Men
Women
Did not drink today
Drank today

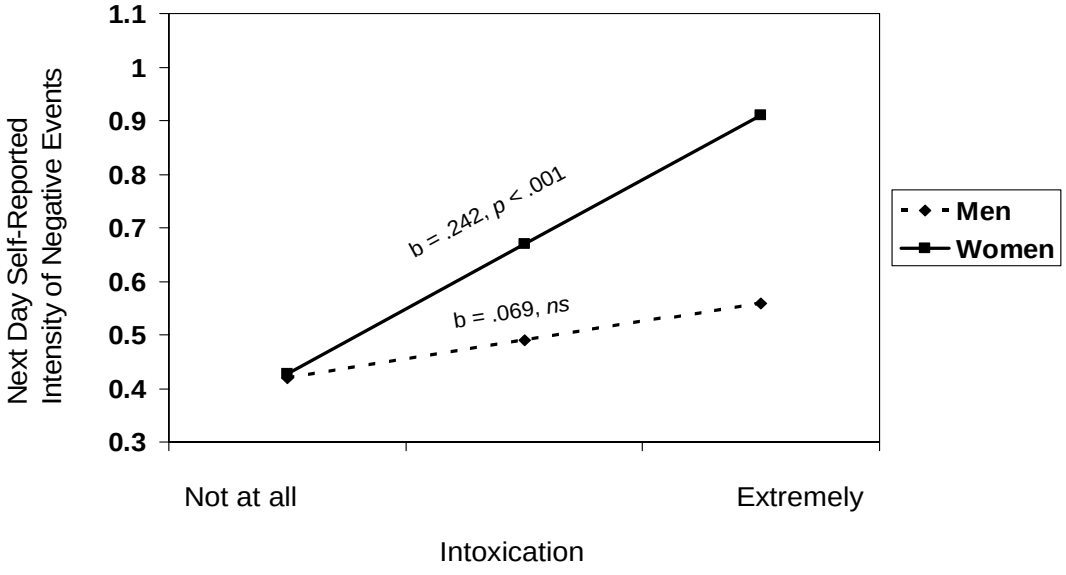

Next Day Self-Reported Intensity of Negative Events
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
b = .242, p < .001
b = .069, ns
Men
Women
Not at all
Extremely
Intoxication

Figure 3.

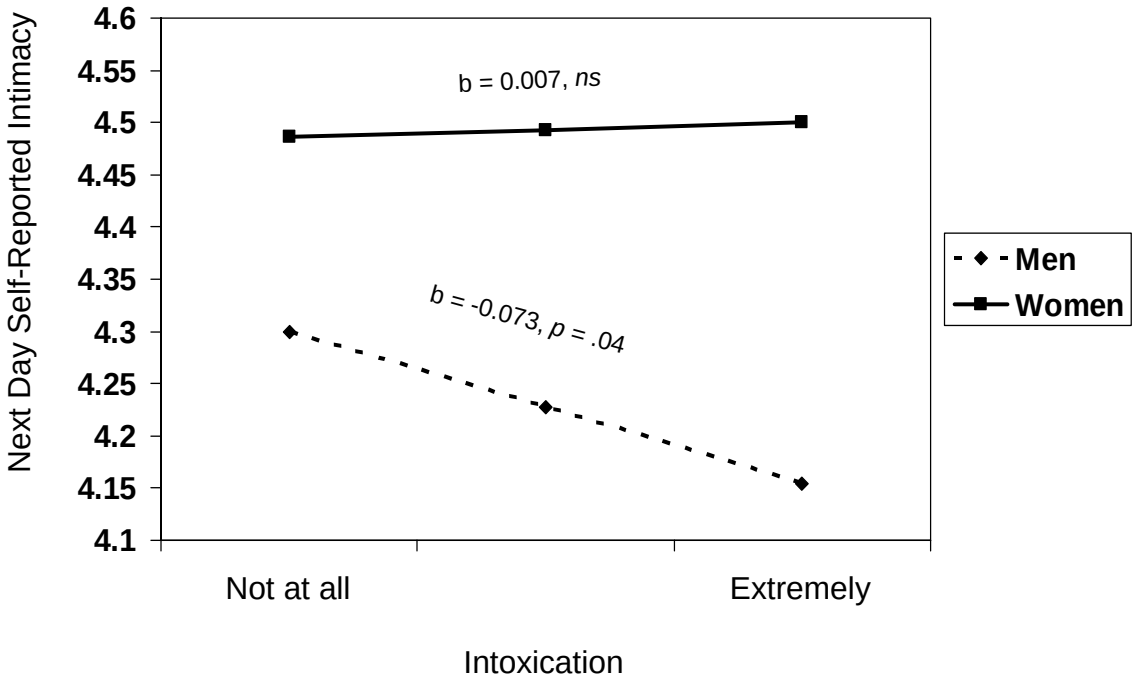
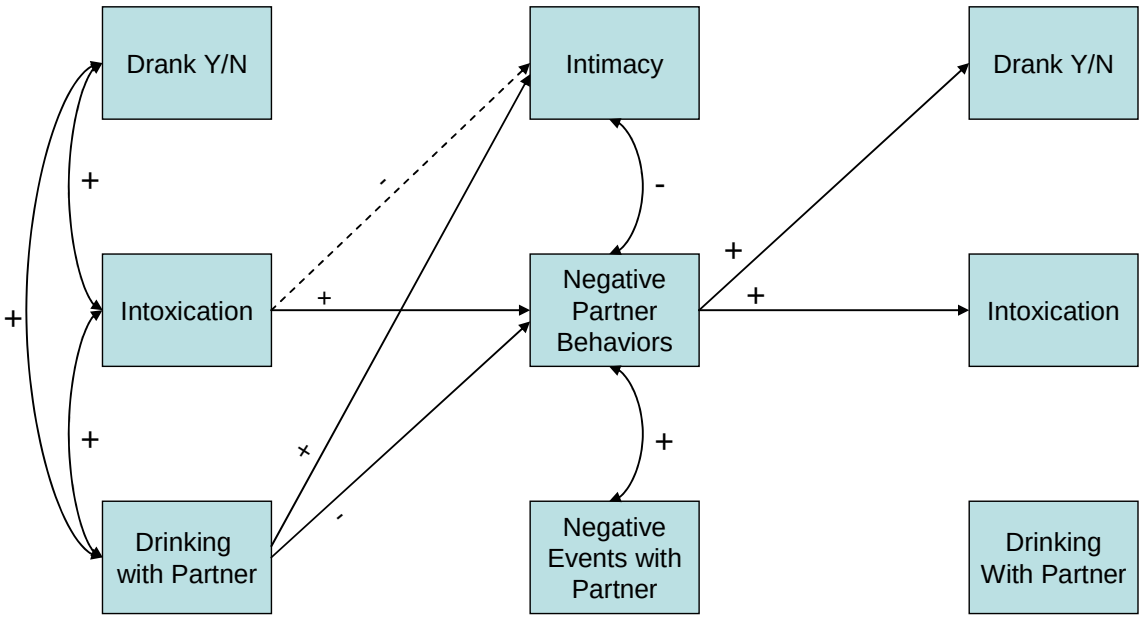

Next Day Self-Reported Intimacy
4.6
4.55
4.5
4.45
4.4
4.35
4.3
4.25
4.2
4.15
4.1
b = 0.007, ns
b = -0.073, p = .04
Men
Women
Not at all
Extremely
Intoxication

Figure 4.


Drank Y/N
Intimacy
Drank Y/N
Intoxication
Negative Partner Behaviors
Intoxication
Drinking with Partner
Negative Events with Partner
Drinking With Partner

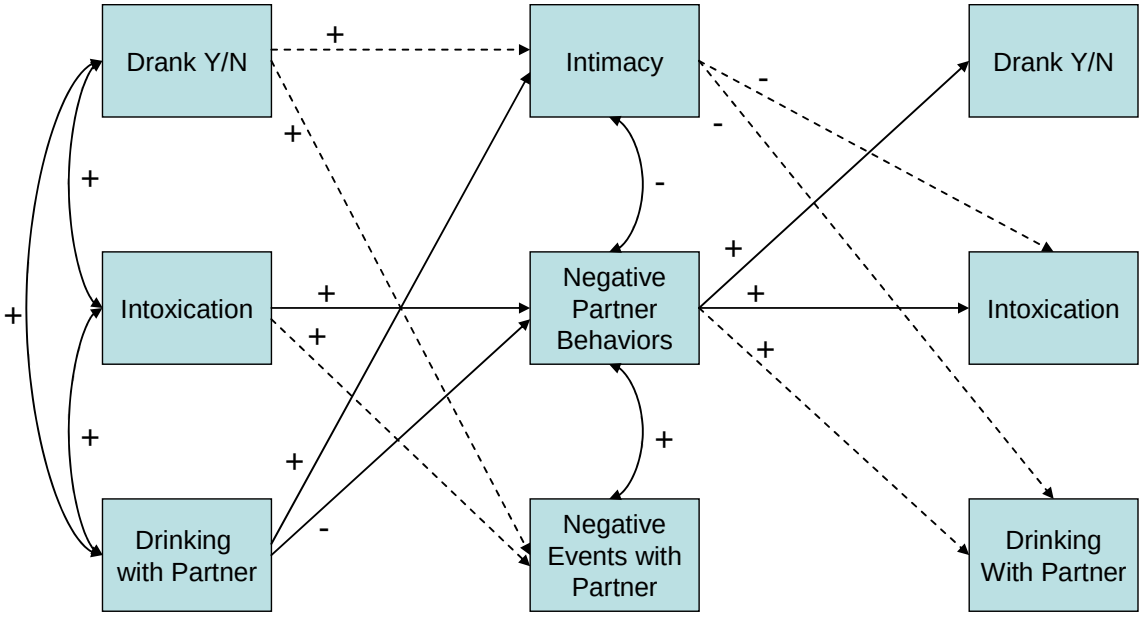

Drank Y/N
Intimacy
Drank Y/N
Intoxication
Negative Partner Behaviors
Intoxication
Drinking with Partner
Negative Events with Partner
Drinking With Partner

Figure 5.

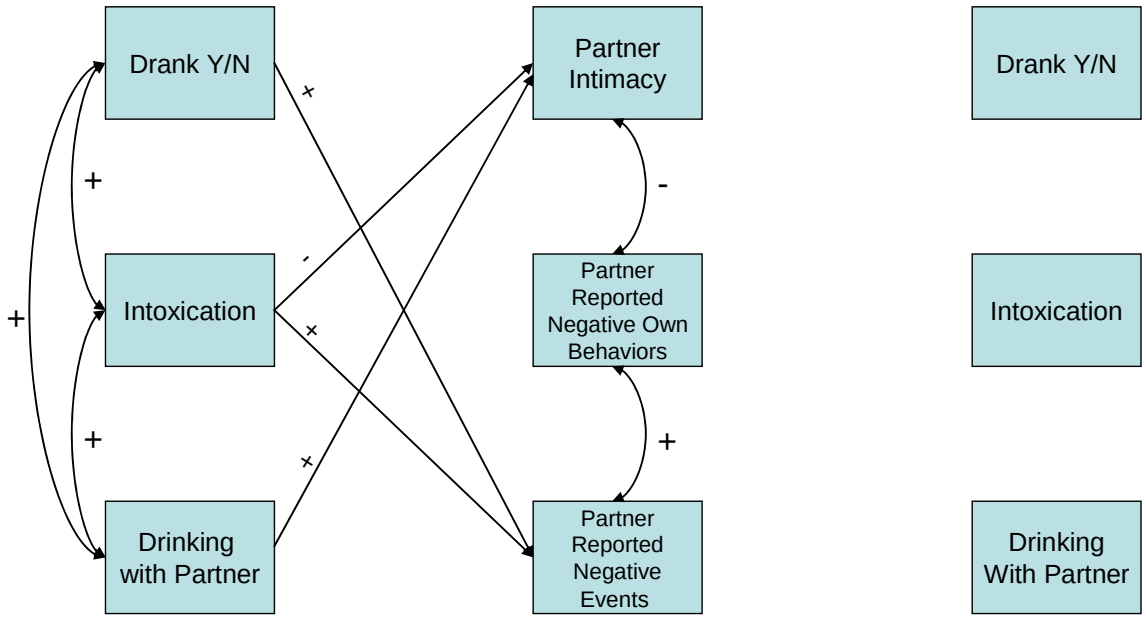
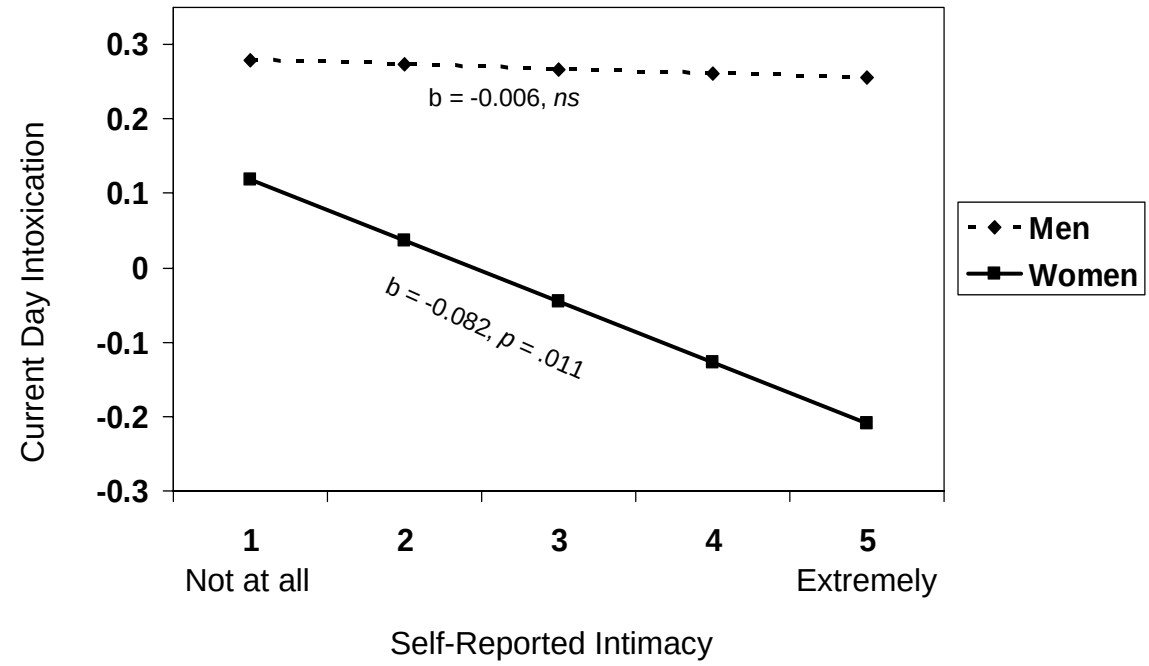

Drank Y/N
Intoxication
Drinking with Partner
Partner Intimacy
Partner Reported Negative Own Behaviors
Partner Reported Negative Events
Drank Y/N
Intoxication
Drinking With Partner
+
+
+
+
+
+
-
-
+

Figure 6.


0.3
0.2
0.1
0
-0.1
-0.2
-0.3
Current Day Intoxication
b = -0.006, ns
b = -0.082, p = .011
Men
Women
1
2
3
4
5
Not at all
Extremely
Self-Reported Intimacy

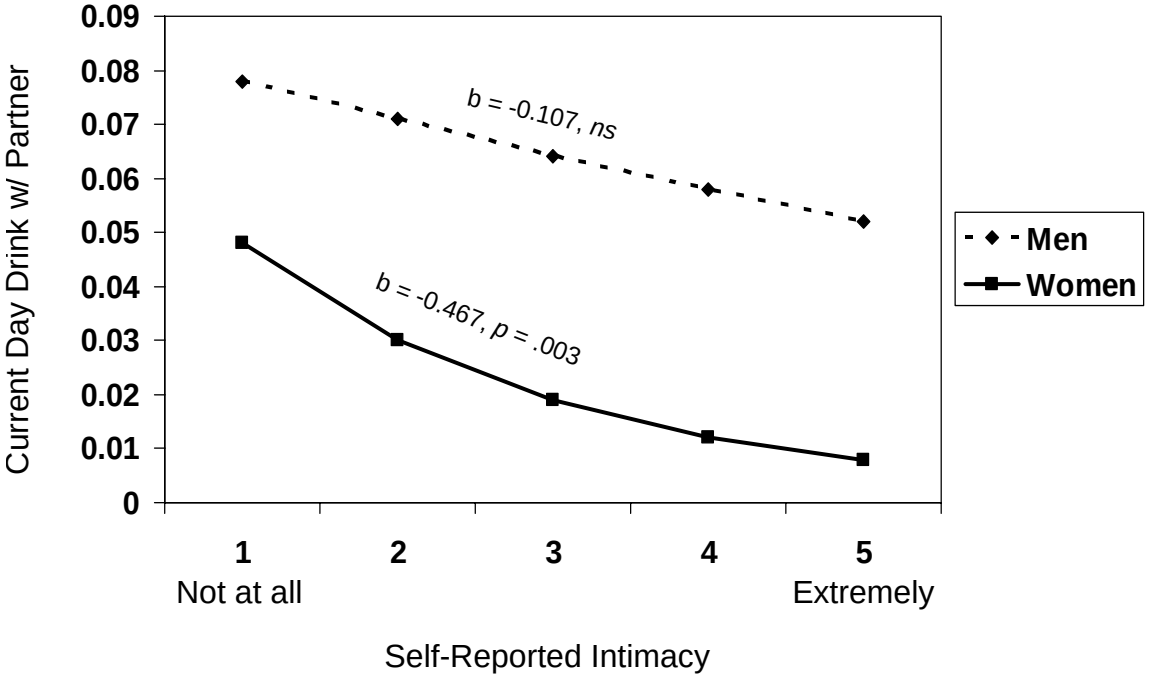
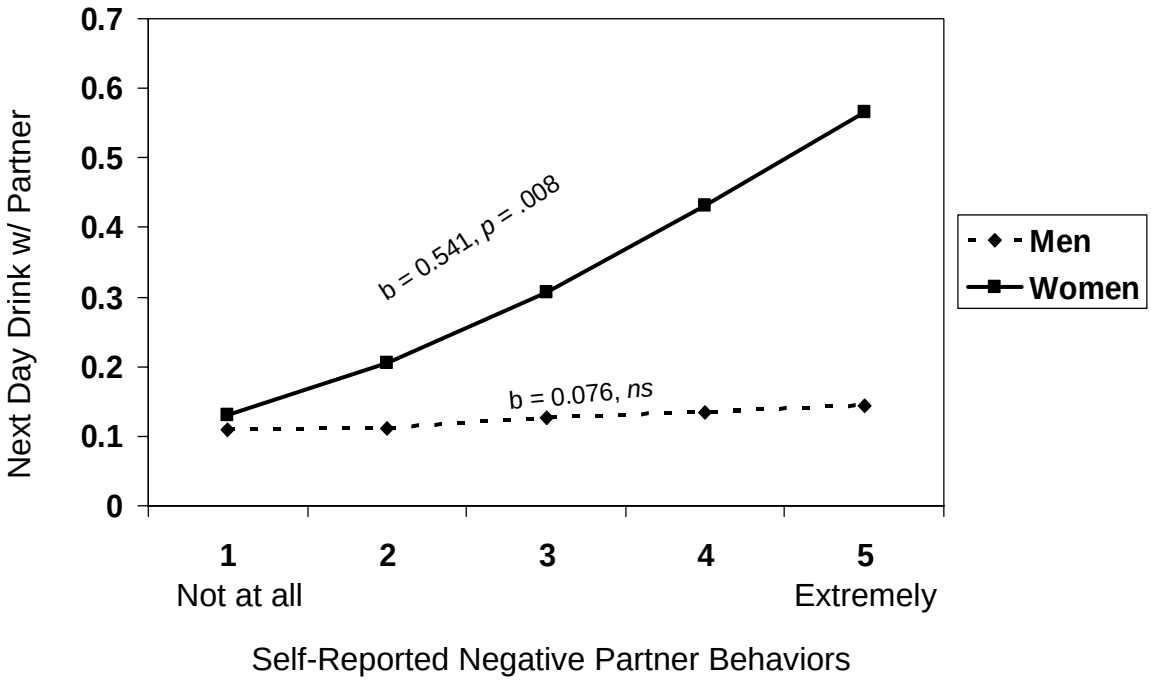

0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Current Day Drink w/ Partner
b = -0.107, ns
b = -0.467, p = .003
Men
Women
1
2
3
4
5
Not at all
Extremely
Self-Reported Intimacy

Figure 7.


0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Next Day Drink w/ Partner
b = 0.541, p = .008
b = 0.076, ns
Men
Women
1
2
3
4
5
Not at all
Extremely
Self-Reported Negative Partner Behaviors