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Perceptions of Partners' Problematic Alcohol Use Affect Relationship Outcomes Beyond Partner Self-Reported Drinking: Alcohol Use in Committed Romantic Relationships

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Alcohol use is prevalent among college students, including those who are in committed romantic relationships. Individuals' perceptions of their partner's alcohol use may have significant effects on how they view both their partner and their relationship. The current study examines the effect of one's perception of one's romantic partner's drinking as problematic on one's relationship satisfaction and commitment, and whether this varies as a function of one's partner's drinking. Both partners in romantic heterosexual relationships (N = 78 dyads) completed an online survey assessing alcohol use and problems, relationship satisfaction and commitment, and the perception that their partner's drinking was problematic. Analyses using Actor-Partner Interdependence Models (APIMs) revealed a partner-moderated actor interaction, such that partner self-reported drinking significantly moderated the association between the actor's perception of their partner's drinking as problematic and actor relationship outcomes. Results indicated that when partners drank at higher levels, perceiving their drinking as problematic did not have an effect. These individuals were less satisfied regardless of their perceptions. However, when partners drank at lower levels, perceiving their drinking as problematic was negatively associated with relationship outcomes. Furthermore, for alcohol consumption, three-way interactions with gender emerged, indicating that this effect was stronger for males. Results extend the literature on drinking in relationships and on interpersonal perception. Implications and future directions are discussed.

Keywords: alcohol, romantic relationships, relationship distress, relationship satisfaction, interpersonal perceptions

The influence partners have on each other is a defining feature of close relationships (Kelley & Thibaut, 1978). In a committed romantic relationship, alcohol use can serve as a source of fun and pleasure or of conflict and tension. Furthermore, the distinction between these two divergent functions depends at least partly on perceptions and evaluations regarding the quantity and frequency of one's partner's drinking and whether one's partner's alcohol use is perceived as problematic. This threshold of what defines problematic drinking may differ from person to person and from couple to couple. Using data from heterosexual couples in committed romantic relationships, the current research seeks to evaluate the effect of perceptions of one's partner's problematic alcohol use on relationship outcomes beyond the partner's self-reported alcohol use.

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Drinking and Satisfaction in Relationships

Romantic relationship partners are among the first to experience the consequences of their partner's problem drinking behavior. The negative effects of one's partner's problematic drinking have been well documented. Studies using cross-sectional and longitudinal designs have shown that compared with spouses of nonalcoholics, spouses of individuals with alcohol problems report elevated rates of anxiety, depression, and somatic concerns, as well as decreased levels of marital satisfaction and more frequent reports of mood disorders and physical and emotional abuse (Cronkite & Moos, 1984; Dawson, Grant, Chou, & Stinson, 2007; Halford, Bouma, Kelly, & Young, 1999; Jacob & Leonard, 1992; Leonard & Jacob, 1988; Leonard & Senchak, 1993, 1996; Maisto, McKay, & O'Farrell, 1998; Moos, Finney, & Cronkite, 1990; Van Hasselt, Morrison & Bellack, 1985). In fact, alcohol and substance use are among the most common reasons given for a divorce (Amato & Previti, 2003; Levinger, 1966).

There is a general consensus in the literature that rather than occurring unilaterally, the association between drinking and dyadic adjustment is reciprocal (Bamford, Barrowclough, & Booth, 2007; Fe Caces, Harford, Williams, & Hannah, 1999; Leonard & Homish, 2008; Levitt & Cooper, 2010; Marshal, 2003). That is, drinking has the potential to both affect and be affected by events within the relationship. Furthermore, the onset of both relationship problems and alcohol abuse may be precipitated by stressors such as family disruptions, financial problems, and job losses unrelated to

drinking problems (Duncan, 1978; Krueger, 1981; Noone, Dua, & Markham, 1999). Although the etiological associations are still unclear, once both problem drinking and relationship distress coexist, the reciprocal influence results in a negative feedback loop with detrimental consequences for each individual and for their relationship. It is clear that the link between alcohol problems and relationship outcomes is a dynamic one. The current research aims to extend previous work in this area by evaluating effects of perceptions of partner drinking as problematic on relationship outcomes, and whether this varies as a function of partner's self-reported alcohol use.

Alcohol Use, Relationship Distress, and Gender

The link between alcohol abuse and poorer relationship outcomes is well established (e.g., Dawson et al., 2007; Leonard & Eiden, 2007; Leonard & Rothbard, 1999; Marshal, 2003). However, it is currently unclear whether the effects of alcohol misuse on relationship functioning are the same for men and women. Much research has focused on relationships in which the husband drinks problematically, partly because of the difference in prevalence of alcohol use disorders (AUDs) in men and women (e.g., the number of males presenting with an AUD is more than twice the number of females in the population of married and cohabiting adults; Dawson et al., 2007; McCrady & Epstein, 1995; Nolen-Hoeksema & Hilt, 2006; Roberts & Linney, 2000). This research focus may also be because of the extent to which AUDs have historically been theorized as a "male" problem (Haber & Jacob, 1997). In fact, relationship functioning is reported to be the poorest in relationships with discordant alcohol consumption, such that husbands are heavy drinkers and wives are not (Roberts & Leonard, 1998). Such couples report higher rates of negative interactions and hostile behavior (Jacob, Leonard, & Haber, 2001). Also, in one study, wives' reports of husbands' drinking predicted wives' distrust of and perceived lack of support from husbands up to 5 years later (Wilsnack, & Wilsnack, 1991). In general, heavy and frequent drinking by the husband was predictive of lower relationship quality for the wife (Roberts & Linney, 2000).

Because research tends to focus on couples in which men drink problematically, data utilizing husbands as partners of female problem drinkers are relatively rare and underreported in the research context (Howells & Orford, 2006). Conclusions from the research that does exist are inconsistent. Some research has found that when the wife is alcohol dependent, husbands are likely to report poor partner support, verbal aggression, and physical violence (Blankfield & Maritz, 1990; Klee, Schmidt, & Ames, 1991; Miller, Downs, & Gondoli, 1989). Leonard and Roberts (1998) found that wives' heavy drinking and/or alcohol dependence was negatively associated with husbands' marital satisfaction, but other research has found wives' frequent (but not heavy) drinking was associated with better relationship quality (Roberts & Linney, 2000). Haber and Jacob (1997) performed one of few studies comparing the interactions of couples in which the husband was alcoholic, the wife was alcoholic, both were alcoholic, or neither was alcoholic. They found that couples with an alcoholic wife reported increased negativity and hostility relative to couples with an alcoholic husband and normal control couples. Cranford, Floyd, Shulenberg, and Zucker (2011) examined divorce over time as a function of husband and wife AUDs. Rates of resulting divorce were highest in couples where the wife had an AUD but the husband did not (40.0%), followed by concordant AUD couples (37.5%), and couples where neither had an AUD (30.4%). The lowest divorce rate occurred in couples where the husband had an AUD but the wife did not (26.5%). In addition, husbands' lifetime AUD was not predictive of wives' marital adjustment 9 years later. Wives' lifetime AUD, however, had direct negative associations with both their own and their husband's marital adjustment 9 years later. The authors note that marital adjustment in alcoholic couples may be driven more by the wives' than the husbands' AUD and marital behavior.

In short, it is currently unclear whether males experience the same or higher levels of distress as females in response to partner's problematic drinking. It is difficult to make predictions about specific gender effects in regard to how perceptions of partner problematic drinking will interact with partner-reported drinking in predicting relationship outcomes. It is, however, an important question that has received limited empirical attention.

Interpersonal Perception

Interpersonal perception involves studying the association between partners' perceptions of each other (Sillars, & Scott, 1983). Research has generally found that such interpersonal perceptions have important consequences for individuals, their interactions, and their relationship outcomes, sometimes even beyond actual reports (Acitelli, Douvan, & Veroff, 1993; Fiske, Gilbert, & Lindzey, 2010). Positive perceptions of one's partner have been associated with positive relationship outcomes, such as increased relationship satisfaction and commitment (Cobb, Davila, & Bradbury, 2001; Molden, Lucas, Finkel, Kumashiro, & Rusbult, 2009; Murray, Holmes & Griffin, 1996; Neff & Karney, 2005; Ruvolo & Fabin, 1999; Watson, Hubbard, & Wiese, 2000). Perceiving similarity of interests and attitudes between oneself and one's partner has been tied to relationship satisfaction and relationship longevity, especially when the interests and attitudes are highly valued (Lutz-Zois, Bradley, Mihalik, & Moorman-Eavers, 2006). Conversely, perceiving that one's partner falls short of one's ideals may lead to relationship dissatisfaction and dissolution (Fletcher, Simpson, Thomas, & Giles, 1999; Murray et al., 1996).

Interpersonal and partner perceptions present a relevant factor to consider when evaluating the bidirectional associations between problem drinking and relationship distress. Amato and Rogers (1997) were among the first to make a case for perceptions of alcohol problems in predicting divorce over time. They found that if either partner's drinking was an issue in the marital relationship early in the study, the couple was more likely to divorce in subsequent years. Results indicated that the perception of discrepancy or issue with regard to alcohol use is a significant predictor of later marital dissolution.

Other research has shown that generally, partners are in agreement when estimating more objective indicators of drinking behaviors (e.g., average number of drinks per week; Connors & Maisto, 2003). However, recent research suggests that when the focus of appraisal is more subjective (e.g., perceived temptation to drink, perceived marital satisfaction), the discrepancy between one's own rating and one's partner's perception is much greater (Antoine, Christophe, & Nandrino, 2009). For instance, married couples with one partner reporting alcohol problems misperceived

the degree to which their partner was satisfied in the relationship (Antoine et al., 2009). Specifically, problem drinkers overestimated the marital satisfaction of their partner, whereas spouses underestimated the marital satisfaction of the drinker. Implications of this can be better understood in light of research that has shown subjective perceptions may be better indicators of satisfaction than actual reports (Fiske et al., 2010; Saffrey, Bartholomew, Scharfe, Henderson, & Koopman, 2003). For example, the perception that one is similar to one's partner predicted relationship satisfaction better than actual similarity (Acitelli et al., 1993).

While the actual drinking behavior of relationship partners can be relatively objective, the perception of whether drinking is problematic is more subjective, particularly when partners' drinking is between the extreme ends of the continuum. One relevant factor shaping such perceptions may be attitudes toward drinking. What one partner perceives as constituting problematic drinking may not be what the other partner perceives as problematic (Bamford et al., 2007). This discrepancy in attitudes about what constitutes a drinking problem, and subsequent perceptions of problematic drinking, may have important implications for the amount of strain and dissatisfaction the couple experiences. Dissatisfaction may stem from the realization that partners hold dissimilar attitudes concerning appropriate and endorsed alcohol use. Furthermore, these attitudes may be strongly held and highly valued. In response to the realization of divergent attitudes and behaviors, individuals may engage in regulatory behaviors in an attempt to control their partner's drinking, and such regulation attempts may produce conflicts between partners (Antoine et al., 2009). Hence, how one views one's partner may be more important for relationship functioning than the partner's view of the self or objective reports.

Current Research

The current research evaluates how relationship satisfaction and commitment vary as a function of partner drinking and perceptions of partner drinking as problematic. Previous research shows that even when controlling for one's own problematic drinking, one's partner's problematic drinking predicts relationship outcomes (e.g., Cranford et al., 2011). The current research goes a step further to also evaluate perceptions of one's partner's drinking as problematic. Furthermore, the present research evaluates whether one's partner's actual drinking, as assessed by self-report, moderates the effects of perceptions of the partner's problematic drinking.

Data was collected from both partners in committed heterosexual romantic relationships. This dyadic design allows for simultaneous estimation of one person's outcome as a function of both their own (i.e., actor effects, as illustrated by the horizontal lines in Figure 1) and their partner's (i.e., partner effects, as illustrated by the cross-paths in Figure 1) predictors. Specifically, the current research utilized the Actor-Partner Interdependence Model (APIM; Kenny, Kashy, & Cook, 2006) to evaluate whether partner self-reported drinking moderates the association between perceptions of the partner's drinking as problematic and actors relationship outcomes. Furthermore, because the dyads are heterosexual, we are able to evaluate whether the dyads are distinguishable by gender and thus whether this effect differs for males and females.

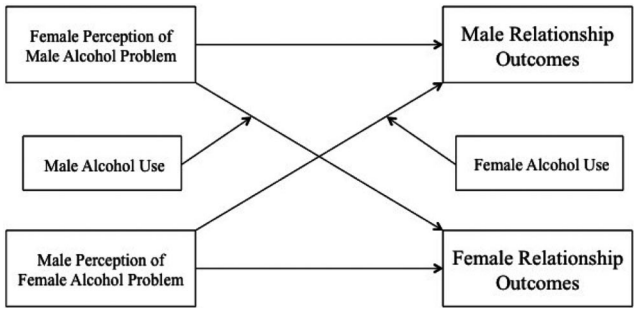

Figure 1. Hypothesized model.

First, based on previous research, we predicted that actor perceptions of partner drinking as problematic will be negatively associated with relationship outcomes. That is, as individuals perceive their partner to exhibit higher levels of drinking problems, they will be less satisfied and committed. Second, we hypothesized a partner effect such that one's partner's drinking would negatively affect one's own relationship outcomes. Third, we hypothesized that partner drinking would moderate the first effect, such that the association between perceiving one's partner to exhibit problematic drinking and one's relationship outcomes would depend on one's partner's self-reported drinking levels. We were also interested in examining whether effects would vary by gender, assuming dyads would be distinguishable by gender. However, given mixed previous findings, we did not propose directional hypotheses regarding gender. Figure 1 represents the hypothesized model. The gender effect is implicit in the model as it is specified with male and female predictors and outcomes.

Method

Participants and Procedure

Individuals in committed romantic relationships ($N = 78$ dyads) were recruited from psychology courses and were told that participation in the study required involvement from both themselves and their romantic partners (regardless of their partner's student status). Inclusion criteria consisted of participants being at least 21 years old and in a committed romantic relationship for at least 3 months. There was no alcohol use threshold included in the criteria to participate; 32% of men and 38% of women reported not drinking in the previous month. Participants ranged in age from 21 to 55 years ($M = 25.02$ years, $SD = 5.88$ years) and were ethnically diverse, with 28.8% Caucasian, 37.8% Hispanic, 16.7% Asian, 7.7% African American, and 9.0% reporting "Other." Average relationship length was 3.38 years ($SD = 4.08$ years). With regard to relationship status, 4% of the sample reported casually dating, 50% exclusively dating, 23% nearly engaged, 8% engaged, and 15% married.

Individuals were recruited via research assistants visiting classrooms, flyers posted around the psychology building, and the online research management system. Interested participants emailed the researcher for the link or began the survey through the link posted in the Psychology department online research management system. During the study, participants were asked for their partner's name and email address so they could be contacted to

participate. Thus, at least half of the participants were students, but student status was not directly assessed. Partners received emails to their respective email addresses with a link to the study. Upon clicking the link to the study, all participants were provided with informed consent information, and upon provision of consent, were subsequently routed to the survey. In the instructions, individuals were asked to complete the survey independently from their romantic partner. Those who were undergraduates were issued extra credit in exchange for their participation. A large proportion of partners did not complete the survey ($N = 151$), but data was only utilized in the analyses if both partners provided sufficient data ($N = 78$ dyads).

Measures

Alcohol use composite. Alcohol use and alcohol-related problems were evaluated separately in the current study. Drinks per week, drinking frequency, and typical quantity were z-scored and averaged to create an alcohol use composite ($\alpha_{Men} = .88$, $\alpha_{Women} = .88$).

Weekly drinking. The Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985) was used to measure number of drinks per week. Participants were asked to consider their drinking during the past month and to fill in the average number of standard drinks (e.g., 12 oz. beer, 5 oz. wine, 1.5 oz. liquor) consumed for each day of the week. Final scores represent the average number of drinks consumed for each week of the past month. Number of drinks per week has previously been shown to be a reliable index of alcohol-related problems among college students relative to other drinking indices (Borsari, Neal, Collins, & Carey, 2001).

Drinking frequency. The Quantity/Frequency/Peak Alcohol Use Index (Dimeff, Baer, Kivlahan, & Marlatt, 1999) includes an item assessing frequency of drinking over the previous month. Participants were asked how many days of the week they drank alcohol during the past month. Participants responded on a 12-point scale (1 = *I do not drink at all;* 2 = *about once per month*; 3 = *once per month*; 4 = *two times per month*; 5 = *three times per month*; 6 = *once a week*; 7 = *twice a week*; 8 = *three times a week*; 9 = *four times a week*; 10 = *five times a week*; 11 = *six times a week*; 12 = *every day*).

Typical quantity consumed. The Quantity/Frequency/Peak Alcohol Use Index (Dimeff et al., 1999) was used to identify typical drinking patterns over the past month. This measure also includes an item assessing average quantity of alcohol consumed on a typical occasion in the previous month. Participants responded with how much alcohol they typically consumed on a given weekend evening during the past month in a number of standard drinks (0 to 25+ drinks).

Alcohol-related problems. A modified version of the Rutgers Alcohol Problems Index (RAPI; White & Labouvie, 1989) assessed how often 25 alcohol-related problems have occurred over the previous three months. The RAPI was modified to include two additional items (i.e., "drove after having two drinks," "drove after having four drinks"). Response options for each item were on a five point scale (0 = *never*; 1 = *1 to 2 times*; 2 = *3 to 5 times*; 3 = *6 to 10 times*; 4 = *more than 10 times*). Scores were calculated by summing the 25 items ($\alpha_{Men} = .94$, $\alpha_{Women} = .91$).

Relationship satisfaction. The Quality of Marriage Index (QMI; Norton, 1983) consists of six items measuring relationship satisfaction. Because our sample included individuals in dating and married relationships, the items were modified in the current study such that "marriage" was changed to "relationship." The QMI asked partners to report the extent to which they agreed or disagreed with general statements about their relationship (e.g., "We have a good relationship," "My relationship with my partner makes me happy"). Partners responded according to a 7-point Likert-type scale (1 = *very strong disagreement*, 7 = *very strong agreement*). Higher scores reflect more relationship satisfaction ($\alpha_{Men} = .91$, $\alpha_{Women} = .93$).

Relationship commitment. The Investment Model Scale (IMS; Rusbult, Martz, & Agnew, 1998) consists of seven items measuring the extent to which individuals report being committed to their romantic relationships (e.g., "I am committed to maintaining my relationship with my partner," "I want our relationship to last forever"). Individuals responded to the items on a 9-point Likert-type scale (0 = *do not agree at all*, 8 = *agree completely*), with higher scores indicating greater commitment ($\alpha_{Men} = .85$, $\alpha_{Women} = .93$).

Actor's perception of partner's problematic alcohol use (PPP). Three items were created to assess the extent to which individuals perceived their partner to drink problematically. These included one cognitive and two behavioral indicators of perceiving one's partner's drinking as problematic. The first item asked participants, "To what extent do you think your partner has an alcohol problem?" Participants responded on a 7-point Likert-type scale (1 = *not at all*, 7 = *very much*; $M = 1.47$, $SD = 1.06$). The second and third items asked, "How often have you tried to control your partner's drinking?" and "How often do you and your partner argue about your partner's drinking?" Participants responded to both items on a 12-point scale (1 = *never;* 2 = *less than once per year*; 3 = *about once per year*; 4 = *two to three times per year*; 5 = *about once every two months*; 6 = *once a month*; 7 = *two times a month*; 8 = *three times a month*; 9 = *once or twice a week*; 10 = *three or more times a week*; 11 = *every day*; 12 = *more than once per day*; *M*s 2.06 and 1.72, *SD*s 1.94 and 1.53, respectively). Because the three items were not measured on the same response scale, responses were *z*-scored and averaged in creating the composite ($\alpha_{Men} = .80$, $\alpha_{Women} = .91$). Correlations among the three items ranged from .68 to .74.

Analytic Strategy: The Actor-Partner Interdependence Model

One consequence of interdependence is that the attributes and behaviors of one dyad member can affect the outcomes of the other dyad member. There is much support for the notion that the behavior of one partner predicts the behavior of the other partner (e.g., McNulty & Karney, 2002) and that measures tend to be correlated among relationship partners (e.g., relationship satisfaction). Commonly used statistical procedures, such as analysis of variance (ANOVA) and multiple regression, assume that the observations on the dependent variable are independent. When the assumption of independence is violated, however, the test statistic (e.g., *t* or *F*) and the corresponding degrees of freedom for the test statistic are inaccurate, thus biasing tests of statistical significance (i.e., the *p* value; Kenny, 1995; Kenny & Judd, 1986). Furthermore, because most researchers are more comfortable with intrapersonal effects and less so with strictly relational phenomena, actor

effects are estimated more often while partner effects are largely ignored (Kenny et al., 2006). By only estimating actor effects, however, any information to be gained about the dynamic processes occurring when one partner influences the other is lost.

The Actor Partner Interdependence Model (APIM; Kenny, 1996; Kenny et al., 2006) allows us to directly answer questions as presented by interdependence theory (Kelley et al., 2003; Wickham & Knee, in press). More specifically, APIM uses the dyad as the unit of analysis and simultaneously estimates a person's dependent variable score as affected both by his or her own independent variable score (i.e., the actor effect), but also by his or her partner's independent variable score (i.e., the partner effect). The partner effect directly models the ways in which one's partner's features influence one's outcomes, controlling for one's own features.

There are two approaches to estimating effects in APIM analyses: The interaction approach and the two-intercept approach. In the two-intercept approach, predictors for each member of the dyad (i.e., one male and one female) are entered separately, yielding two separate equations and two separate intercepts (Kenny et al., 2006; Wickham & Knee, in press). Here, the effects are directly interpretable by gender. In the interaction approach—the method used in these analyses—a single equation is specified, and actor and partner predictors are crossed with gender. In these analyses, gender must be added in order to obtain gender effects. When all main effects and all interactions are included, these two approaches are mathematically equivalent (Wickham & Knee, in press). The interaction approach was used in the current analyses because it directly tests whether the effect of interest (i.e., partner drinking × actor perception of partner drinking as problematic) is different for males and females, via the three-way interaction.

The alcohol use variables and the perception of partner's problematic drinking variable were considered mixed variables, meaning that they varied at both the between- and within-dyad levels. Gender was considered a within-dyad variable as it only varies within dyads (i.e., every dyad has one male and one female). The following analyses were specified with SAS Proc Mixed statements (Littell, Milliken, Stroup, & Wolfinger, 1996; Singer, 1998). All predictors were centered at the grand mean level. The nonindependence of dyad members was modeled as a covariance parameter between dyad member scores in the covariance matrix. As specified by Kenny and colleagues (2006), because the dyads were heterosexual and without having evidence to suggest that the variances should be constrained to be equal, covariance parameters were estimated using a REPEATED statement with the specification TYPE = UN, which allowed the covariance matrix to be unstructured and freely estimated by the data. The REPEATED statement specified the R matrix in the mixed model. Specifying gender in this statement allowed separate variance estimates and a covariance estimate to be output as a function of gender.

Results

Correlations among all major study variables, including means and standard deviations, are represented in Table 1. The correlations on the diagonal of the matrix in Table 1 (i.e., the Pearson bivariate correlations between dyad member responses) support the notion that males' and females' scores on variables of interest are not independent. At the bivariate level, perceiving one's partner's drinking as problematic was significantly and negatively associated with satisfaction and commitment for men; for women, the associations were not significant.

An omnibus test of distinguishability (Kashy & Donnellan, 2012) was run to empirically evaluate whether the dyads in our sample were distinguishable by gender. To perform this test, the −2 log likelihood from a model where the dyad members were distinguishable by gender was compared with a model where the dyad members were assumed to be indistinguishable.[1] The chi-square difference test was $\chi^2(5) = 26.19$, $p < .001$. The null hypothesis of this test (i.e., that the dyads are indistinguishable) was rejected, concluding that dyad members were empirically distinguishable by gender.

The current APIM analyses utilized a sequential approach with main effects and interactions added in subsequent steps. Analyses were tested using gender, actor perception of their partner's drinking as problematic (PPP), and partner drinking (i.e., the drinking composite or partner drinking problems) as predictors and actor relationship satisfaction and actor commitment as outcomes. Main effects of actor drinking, partner drinking, gender, and PPP were entered at Step 1 and are illustrated by the parameter estimates and tests of significance for the main effects in Tables 2 and 3. Two-way interactions were entered in Step 2, and the three-way interaction with gender was added in Step 3. In total, four models were run: (a) the drinking composite × PPP predicting satisfaction; (b) drinking composite × PPP predicting commitment; (c) drinking problems × PPP predicting satisfaction; and (d) drinking problems × PPP predicting commitment. Table 2 presents parameter estimates and tests of significance examining actor relationship satisfaction and actor commitment as a function of PPP and the partner drinking composite. Table 3 presents parameter estimates and tests of significance examining actor relationship satisfaction and actor commitment as a function of PPP and partner drinking problems. In each table, the intercept and main effects presented come from a main effects only model, the two-way interactions come from a model with main effects and two-way interactions, and results from the three-way interaction come from the full model. All analyses control for respective actor self-reported drinking variables.

In both models predicting relationship satisfaction, significant main effects of PPP revealed that perceiving that one's partner's drinking was serving a problematic role in the relationship (controlling for both partners' drinking) was negatively associated with satisfaction. In the model examining commitment as a function of the partner drinking composite (see Table 2), perceiving one's partner's drinking as problematic was also marginally associated with lower relationship satisfaction ($p = .071$). In contrast, the hypothesized partner effect of drinking on relationship satisfaction was not significant in any of the models. Thus, the perception of one's partner's drinking as problematic was more consistently associated with negative relationship outcomes than was the partner's objectively defined self-reported drinking.

The interaction representing the primary hypothesis of interest (i.e., actor perception of partner problematic drinking and partner

[1] The reported chi-square deviance difference test results come from the model utilizing the drinking composite and relationship satisfaction. The same test was run for the other three models with an identical pattern of results, suggesting the dyads should be treated as distinguishable.

Table 1
Zero-Order Correlations and Descriptive Statistics Among All Major Variables by Gender

	1	2	3	4	5
1. Drinking composite	.44***	.60***	−.07	−.15	.23*
2. Drinking problems	.51***	.44***	−.03	−.01	.33**
3. Relationship satisfaction	−.12	−.11	.50***	.62***	−.33**
4. Relationship commitment	−.08	−.09	.73***	.39***	−.24*
5. PPP	.20†	.43***	−.13	−.17	.23*
Full sample, *M* (*SD*)	0.00 (.90)	3.40 (6.54)	5.96 (1.23)	6.94 (1.54)	0.00 (.90)
Men, *M* (*SD*)	0.20 (1.02)	4.11 (7.47)	6.10 (1.02)	7.04 (1.40)	−0.15 (0.66)
Women, *M* (*SD*)	−0.20 (0.71)	2.69 (5.39)	5.82 (1.40)	6.85 (1.67)	0.15 (1.07)

Note. PPP = actor's perception that the partner's drinking is problematic. Correlations for men (N = 75–78) are above and correlations for women (N = 74–78) are below the main diagonal. Values on the main diagonal reflect the correlation between dyad member responses.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

drinking predicting actor relationship outcomes) was evaluated at Step 2, along with the two-way interaction between partner drinking and gender and the two-way interaction between PPP and gender. As can be seen under Step 2 in Tables 2 and 3, the two-way interaction of interest emerged in three of the four models (i.e., both models predicting relationship commitment and the model using the drinking composite to predict relationship satisfaction). For two of the significant models, however, the three-way interaction among the drinking composite, PPP, and gender was significant, indicating that the two-way of interest differed for males and females. Thus, we will explain the model where only the two-way interaction was significant, and then explain the models where the three-way was significant.

The model with the significant two-way interaction and nonsignificant three-way interaction was the model where drinking problems and PPP interacted to predict relationship commitment. This significant two-way interaction indicated that the associations between perceiving one's partner to have a drinking problem and actor commitment depended on the level of partner self-reported drinking problems. High and low values of partner drinking problems were specified as one standard deviation above and below their respective means in deriving predicted values for the parameter estimates for the figures (Cohen, Cohen, West, & Aiken, 2003). Specifically, simple slopes indicated that when the partner reported higher levels of drinking problems (+1 *SD*), the association between PPP and commitment was not significant ($b = -.244$, $p =$

Table 2
Actor-Partner Interdependence Models (APIM) Estimates for Drinking Composite Predicting Actor Relationship Outcomes

Parameter	Estimate	*SE*	*t*	*p*
Outcome: Relationship satisfaction				
Step 1: Main-effects only				
Intercept	5.921	.127	46.82	<.001
Actor drinking composite	−.022	.100	−.22	.824
Partner drinking composite	−.084	.131	−.65	.519
Gender	.102	.080	1.27	.207
Perception of partner drinking problem (PPP)	−.298	.121	−2.46	.015
Step 2: Addition of two-ways				
Partner drinking composite × PPP	.184	.091	2.02	.046
Partner drinking composite × Gender	.096	.111	.87	.386
PPP × Gender	−.066	.134	−.50	.621
Step 3: Addition of three-way				
Partner drinking composite × PPP × Gender	.294	.095	3.10	.003
Outcome: Relationship commitment				
Step 1: Main-effects only				
Intercept	6.898	.153	45.13	<.001
Actor drinking composite	−.151	.140	−1.08	.281
Partner drinking composite	−.061	.173	−.35	.724
Gender	.100	.109	.92	.362
Perception of partner drinking problem (PPP)	−.296	.163	−1.82	.071
Step 2: Addition of two-ways				
Partner drinking composite × PPP	.356	.114	3.11	.003
Partner drinking composite × Gender	−.109	.148	−.74	.460
PPP × Gender	.253	.178	1.42	.160
Step 3: Addition of three-way				
Partner drinking composite × PPP × Gender	.289	.140	2.07	.042

Note. PPP = actor's perception that the partner's drinking is problematic.

Table 3
Actor-Partner Interdependence Models (APIM) Estimates for Drinking Problems Predicting Actor Relationship Outcomes

Parameter	Estimate	*SE*	*t*	*p*
Outcome: Relationship satisfaction				
Step 1: Main-effects only				
Intercept	5.946	.126	47.02	<.001
Actor drinking problems	−.001	.013	−.08	.935
Partner drinking problems	.012	.017	.68	.495
Gender	.124	.079	1.58	.119
Perception of partner drinking problem (PPP)	−.307	.130	−2.35	.021
Step 2: Addition of two-ways				
Partner drinking problems × PPP	.011	.012	.89	.374
Partner drinking problems × Gender	.023	.017	1.34	.184
PPP × Gender	−.183	.157	−1.17	.245
Step 3: Addition of three-way				
Partner drinking problems × PPP × Gender	.015	.012	1.22	.226
Outcome: Relationship commitment				
Step 1: Main-effects only				
Intercept	6.939	.151	45.93	<.001
Actor drinking problems	−.000	.019	−0.00	.998
Partner drinking problems	−.000	.024	−0.00	.997
Gender	.103	.107	.97	.338
Perception of partner drinking problem (PPP)	−.212	.177	−1.20	.233
Step 2: Addition of two-ways				
Partner drinking problems × PPP	.039	.015	2.54	.013
Partner drinking problems × Gender	.015	.023	.68	.501
PPP × Gender	.155	.2100	.74	.461
Step 3: Addition of three-way				
Partner drinking problems × PPP × Gender	.015	.017	.87	.390

Note. PPP = actor's perception that the partner's drinking is problematic.

.164). Stated another way, when the partner's drinking problems were relatively high, individuals were less committed regardless of their perceptions of their partner's drinking as problematic. Conversely, when the partner reported lower levels of drinking problems (−1 *SD*), there was a significant negative association between PPP and actor relationship commitment ($b = -.636$, $p = .017$). In this case, as perceptions that one's partner's drinking was problematic increased, relationship commitment decreased.

To examine whether this interaction differed for males and females, the three-way interaction among partner drinking, PPP, and gender was added in Step 3. As mentioned previously, the interaction approach (Kenny et al., 2006; Wickham & Knee, in press) was used to evaluate whether the two-way interaction of interest was different for males and females. The three-way interaction among gender, PPP, and the drinking composite was significant for both relationship outcomes. The significant three-way interaction revealed that the two-way interaction between PPP and partner drinking predicting relationship outcomes was different for men and women (Figures 2a and 2b). Tests of simple slopes indicated that the two-way interaction between PPP and partner drinking predicting satisfaction was significant for men ($b = .600$, $p < .001$), but not for women ($b = .066$. $p = .497$). The interaction between PPP and partner drinking predicting commitment was significant for both men ($b = .842$, $p = .001$) and women ($b = .273$, $p = .025$), but was stronger for men.

Further breaking down the interaction predicting satisfaction within males (as can be seen in Figure 2a), when partner drinking was high (+1 *SD*), the effect of perceiving one's partner's drinking as problematic was not significant ($b = .088$, $p = .692$). When partner drinking was low (−1 *SD*), however, there was a strong negative association between perceiving one's partner's drinking as problematic and relationship satisfaction ($b = -1.108$, $p < .001$). That is, for males whose partners did not drink much, the effect of perceiving them to have a drinking problem was significant such that as perceptions increased, relationship satisfaction decreased. For women, however, as can be seen in Figure 2b, associations between PPP and satisfaction were not significant regardless of partner-reported drinking (high partner drinking $b = -.098$, $p = .601$; low partner drinking $b = -.236$, $p = .446$). To evaluate whether the findings were affected by age, relationship length, or relationship status, analyses were repeated controlling for these covariates. All results held with one exception that the three-way interaction of gender, PPP, and the drinking composite predicting relationship commitment became nonsignificant ($p = .105$). The significant two-way interactions of interest remained unchanged.

Discussion

Results from the current study suggest that the association between perceiving one's partner's drinking as problematic and relationship outcomes also depends on the partner's self-reported drinking. We also found this effect to differ by gender in the two models with the drinking composite. The overall pattern of results revealed that if one's partner consumed alcohol at higher levels, perceiving that one's partner had a drinking problem was inconsequential to relationship outcomes. The importance of perceptions arose when one's partner reported consuming alcohol at relatively

Figure 2. (a) For males, perceiving their female partner to have a drinking problem (PPP) moderated the association between the female partner's reported drinking and the male's relationship satisfaction. (b) For females, perceiving their male partner to have a drinking problem (PPP) did not moderate the association between the male partner's reported drinking and the female's relationship satisfaction.

lower levels. In that case, higher perceptions of partner problematic drinking were associated with reduced relationship satisfaction and commitment, and that was especially true for men. The exact mechanisms through which this effect occurs are currently unclear. It is possible that it is difficult for individuals to manage discrepancies between reality and perceptions, and this discrepancy is even more difficult for males to cope with. This might also reflect a kind of expectancy-violation process (e.g., Burgoon, 1993; Jones, 1986, 1990; Olson, Roese, & Zanna, 1996;) whereby individuals hold norms that dictate lower drinking is the socially accepted behavior (a prescriptive expectancy), and perceiving that their partner drinks more may violate their expectation of what is socially desired and/or accepted. Perceiving such violations places additional strain on the relationship; as the positive illusions about the partner may be broken, one sees one's partner through less rose-tinted glasses.

Another way of thinking about this is from the perspective of classical decision theory (e.g., Pollock, 2006) where different combinations of perceptions and reality have different psychological consequences. An individual may see his or her partner as having a problem with alcohol or not, and the partner may actually have a problem or not. The results suggest that correctly perceiving one's partner's drinking as nonproblematic was associated with the highest levels of satisfaction and commitment. However, primarily for men, incorrectly perceiving one's partner's drinking as problematic was associated with the lowest levels of satisfaction and commitment. Thus, if the partner's drinking was perceived to be problematic and the partner was not drinking much or often, this lack of understanding between the two partners may create additional problems for the relationship, resulting in reduced relationship outcomes.

Though additional research is needed in the domain of alcohol, relationships, and gender more generally, there are potential reasons why the interaction with the drinking composite variable was significantly different for men and women. Consistent with prevalence rates, AUDs have traditionally been viewed as a "male" problem (Haber & Jacob, 1997). Conceptualizing AUDs as occurring more often with males—and the corresponding norms about alcohol use and gender—may undermine emphasis on actual male problems and exaggerate emphasis on female drinking problems. The investment model of relationships (Rusbult, 1980, 1983; Rusbult & Martz, 1995) provides another framework through which to consider the gender effect. The investment model posits that relationship commitment is dependent upon the extent of one's investment in the relationship, satisfaction with the relationship, and the perceived quality of alternative partners. Generally, research has found that negative interactions between partners influence relationship satisfaction and commitment in a negative direction. However, others have theorized that the chronic experience of negative events, or previous chronic negative experiences in relationships, may lead to a heightened tolerance (or desensitization), such that those negative events yield little influence on one's commitment and satisfaction in the relationship (Cloitre, Cohen, & Scarvalone, 2002; Ehrensaft et al., 2003). This perspective would predict that to the extent that drinking—even problematic drinking—is viewed as more normative for men than women, female partners may not consider their partner's drinking to be problematic enough to warrant detriments to relationship outcomes.

It is interesting that the two-way interaction between drinking problems and PPP was not significant in predicting satisfaction. Moreover, the three-way interaction was not significant with partner drinking problems as a predictor for either relationship outcome. It is possible that the weaker influence of PPP on the association between drinking problems and relationship outcomes may be attributable to much of the subjectivity of what amount or frequency of drinking constitutes a problem being diminished when the partner is reporting concrete alcohol-related consequences (e.g., throwing up, driving after drinking several drinks). This could also be because of the relatively low levels of alcohol problems in the current sample.

Limitations, Future Directions, and Implications

Although the current study provides preliminary support for the role of partner drinking in the association between perceiving one's partner's drinking as problematic and relationship satisfaction, there are several limitations and avenues for future inquiry. Limitations include potential restrictions to generalizability (e.g., recruitment from a sample of college students; low partner response rate; relatively low alcohol use). In addition to the relatively low response rate, there may have been a potential bias during sample recruitment (possibly related to the low response rate). Furthermore, the cross-sectional nature of the current research prohibits conclusions about causal ordering. It is possible that relationships suffering from reduced levels of satisfaction and

commitment (for reasons unrelated to drinking) may cause increased drinking and modified perceptions of partner drinking and/or problematic alcohol use. Finally, the relatively low severity of alcohol-related problems in the sample is a limitation; future research should evaluate the effects of discrepancy in different levels of severity. It is plausible that at higher levels of severity, the discrepancy between own and partner perceptions may be reduced (e.g., as consequences such as DUIs become more apparent).

There are a number of important future directions raised from the topic of interpersonal perceptions in the alcohol and relationships domain. This research is among the first to evaluate interpersonal perceptions in the arena of drinking and relationships. Our results suggest that perceiving one's partner's drinking as problematic was a more consistent predictor of negative relationship outcomes than was the partner's self-reported drinking. The literature does not currently provide clear guidance in terms of what kinds of behaviors predict perceptions of partner problematic alcohol use. What constitutes where someone draws the line between acceptable and unacceptable drinking behavior? What kinds of behaviors elicit individuals to become more sensitive to their partner's drinking? Are certain individuals simply more aware of their partner's health behaviors? Do relationship conflicts unrelated to drinking exaggerate the sensitivity with which people pay attention to their partner's drinking? Future research should further explore the specific determinants of perceptions of partner problematic drinking, and how those determinants influence various aspects of dyadic adjustment. In addition, future research should implement a longitudinal study paradigm, because it is able to provide temporal inferences concerning alcohol's effect on the development and maintenance of the relationship over time. Together, these future directions can help answer complex questions regarding for whom and under what circumstances drinking is harmful or beneficial for each partner and the relationship.

Interactions like those presented here embody the dynamic influences relationship partners have upon one another and are what is meant when it is said that relationships are contexts for interaction (Hinde & Stevenson-Hinde, 1987; Lollis & Kuczinski, 1997). Among the practical implications suggested by this research is the potential importance of communication and discussion regarding what each partner views as acceptable and unacceptable with respect to drinking behavior. It is important to note that although an individual may not see his or her own behavior as problematic, from the relational perspective, perceptions of problems within the relationship represent actual problems within the relationship, regardless of the objective validity of those perceptions. Raitasalo and Holmila (2005) report that the association between the drinker's own concerns and the pressure exerted by the partner may be particularly distressing when the individual's own evaluation of his or her own drinking is not supported by the partner. This may be the case when an individual believes that his or her own drinking is not a problem, but the partner believes differently and attempts to regulate the drinker's behavior using various strategies. A worthwhile potential line of research would be to evaluate differences in partners' perceptions of both their own and their partner's problematic alcohol use, and the ramifications of the discrepancies between each dyad member's perceptions of their own problematic alcohol use and their partner's perception of their own problematic alcohol use. The current research did not include a measure of perceptions of one's own problematic alcohol use, but integrating it into this line of research and examining such discrepancies could be very productive.

Regarding clinical implications, current alcohol therapy approaches recognize that both partners' involvement is more beneficial than that of a singular individual and that treatment is more effective with an additional focus on improving relational functioning (e.g., Epstein & McCrady, 1998; McCrady & Epstein, 1995; McCrady, Epstein, Cook, Jensen, & Hildebrandt, 2009; McCrady et al., 1986; McCrady, Stout, Noel, & Abrams, 1991). Research has also shown that similar (i.e., concordant) drinking levels between partners have been associated with better outcomes than couples whose drinking is discordant (e.g., Homish & Leonard, 2007; Homish, Leonard, Kozlowski, & Cornelius, 2009; Levitt & Cooper, 2010; Mudar, Leonard, & Soltysinski, 2001). Future research would benefit from a test of actor consumption $\times$ partner consumption $\times$ PPP, as this test would illuminate the effect of partner perceptions in relationships where the partners are concordant in their drinking levels versus relationships where the drinking levels are discordant. This line of research seems particularly informative in cases where the correlations between partners' reports of their own alcohol use and of their partner perceptions are not high ($r = .44$ for alcohol use and .23 for PPP in the current sample). The nonsignificant result of this three-way interaction in the present sample, $t(95) = 0.02$, $p = .983$, may be because of the relatively small sample size and reduced drinking levels and should be replicated with larger samples.

The present research sheds new light on how perceptions of partners' drinking contribute to relationship satisfaction and commitment. Couples interventions may also benefit from having couples discuss drinking-related values and what constitutes problematic drinking. Identifying discrepancies between the drinking levels and values in the dyad members and paying particular attention to resolving these differences (e.g., coming to an agreement upon what drinking behavior is acceptable within the relationship) may be of particular importance in improving the drinking behaviors and relationships of couples in which one or both partners present with drinking problems, relationship problems, or both. The current research is a first step toward identifying perceptions of one's partner's alcohol use as problematic as a determinant of one's own relationship outcomes beyond one's partner's own self-reported drinking levels.

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Correction to Rodriguez, Øverup, and Neighbors (2013)

In the article "Perceptions of Partners' Problematic Alcohol Use Affect Relationship Outcomes Beyond Partner Self-Reported Drinking: Alcohol Use in Committed Romantic Relationships," by Lindsey M. Rodriguez, Camilla S. Øverup, and Clayton Neighbors (*Psychology of Addictive Behaviors*, Advance online publication. February 25, 2013. doi: 10.1037/a0031737), the name of author Camilla S. Øverup was misspelled as Camilla S. Overup. All versions of this article have been corrected.

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