Drinking and Desired Self-Images: Path Models of Self-Image Goals, Coping Motives, Heavy-Episodic Drinking, and Alcohol Problems

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Abstract

Coping motives for drinking initiate alcohol-related problems. Interpersonal goals, which powerfully influence affect, could provide a starting point for this relation. Here we tested effects of self-image goals (which aim to construct and defend desired self-views) and compassionate goals (which aim to support others) on heavy-episodic drinking and alcohol-related problems. Undergraduate drinkers (*N*=258) completed measures of self-image and compassionate goals in academics and friendships, coping and enhancement drinking motives, heavy-episodic drinking, and alcohol-related problems in a cross-sectional design. As predicted, self-image goals, but not compassionate goals, positively related to alcohol-related problems. Path models showed that self-image goals relate to coping motives, but not enhancement motives; coping motives then relate to heavy-episodic drinking, which in turn relate to alcohol-related problems. Self-image goals remained a significant predictor in the final model, which accounted for 34% of the variance in alcohol-related problems. These findings indicate that self-image goals contribute to alcohol-related problems in college students both independently and through coping motives. Interventions can center on reducing self-image goals and their attendant negative affect.

Keywords

Alcohol; College Students; Drinking Motives; Goals; Path Analysis

Alcohol use among college students constitutes a public health threat in the United States (Hingson, Heeren, Winter, & Wechsler, 2005). Representative national surveys show that approximately 44% of college students report heavy-episodic drinking (Wechsler et al., 2002), and that 18% percent of US college students (24% of men, 13% of women) suffer from clinically significant alcohol-related problems (Slutske, 2005). Successful intervention requires understanding the psychosocial antecedents underlying drinking behavior that precipitate dangerous alcohol-related outcomes (Ham & Hope, 2003). The current study therefore investigated whether two interpersonal goals, self-image goals and compassionate goals, relate to drinking motives, heavy-episodic drinking, and alcohol-related problems.

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Uncovering the interpersonal goals associated with drinking provides a possible point of intervention other than alcohol-related beliefs and motivations. In particular, because these interpersonal goals encompass broader outcomes related to college than alcohol-related beliefs and motivations, interventions that target such goals might reduce problematic drinking while concurrently promoting positive outcomes in other aspects of students' lives.

Self-image goals refer to goals in which people seek to construct, maintain, and defend positive self-views (Crocker & Canevello, 2008), often to gain or obtain something for the self (Schlenker, 2003). People can have self-image goals for many domains of life, including academics (e.g., getting others to see one as smart and competent) and friendships (e.g., getting others to see one's desirable qualities). Dispositionally, people with chronic self-image goals are self-conscious, entitled, socially anxious, insecurely attached, competitive, low in self-compassion, and view their relationships as zero-sum (success for one person detracts from the successes of others) (Crocker & Canevello, 2008; Moeller, Crocker, & Bushman, in press). Importantly, people with chronic self-image goals chronically experience a constellation of negative affective states, including fear, pressure, ambivalence, and confusion as a consequence of having those goals (Crocker & Canevello, 2008; Moeller, Crocker, & Canevello, 2009).

We predict that college students with chronic academic and friendship self-image goals will drink heavily and experience more alcohol-related problems. Drinking alcohol can dampen the self-relevant negative affect that accompanies self-image goals, affording escape from self-awareness and evaluation anxiety (Baumeister, 1997; Higgins & Marlatt, 1975; Hull, 1981; Hull & Young, 1983). However, because drinking to cope with negative affect predicts heavy drinking and alcohol-related problems (Cooper, 1994; Cooper, Frone, Russell, & Mudar, 1995; Neighbors, Lee, Lewis, Fossos, & Larimer, 2007; C. L. Park & Levenson, 2002; Simons, Gaher, Oliver, Bush, & Palmer, 2005), people with self-image goals may be susceptible to such problems. Thus, we expected an association between self-image goals and problematic drinking outcomes (e.g., heavy drinking and alcohol-related problems) mediated through coping motives, but not other drinking motives such as enhancement motives (Cooper, 1994; Cooper et al., 1995), which do not involve self-relevant negative affect.

Whereas we predict that college students with chronic self-image goals will experience alcohol-related problems, we predict that college students with chronic compassionate goals will not. *Compassionate goals* refer to goals in which people seek to support others and contribute to their well-being (Crocker & Canevello, 2008). People can also have compassionate goals for many domains of life. When people have chronic compassionate goals, they want to be a constructive force in their interactions with others and avoid harming them. People with chronic compassionate goals have high self-compassion, feel cooperative with others, are high in agreeableness and extroversion, and view their relationships as nonzero-sum (success for one person does not detract from the successes of others). As a result, people with chronic compassionate goals chronically report feeling clear, calm, peaceful, empathic, and connected to others (Crocker & Canevello, 2008; Moeller et al., 2009). Because compassionate goals do not foster negative affect, they should be unrelated to drinking to cope and alcohol-related problems.

Accordingly, the current study tested self-image and compassionate goals as correlates of heavy-episodic drinking and alcohol-related problems. We predicted that self-image goals relate to heavy-episodic drinking and alcohol-related problems, both directly and indirectly through coping motives; these coping motives then relate to heavy-episodic drinking, which in turn relate to alcohol-related problems. This hypothesized path model rests on the assumption that people with self-image goals drink alcohol to reduce their negative affect, in

line with previous research suggesting that dispositional variables promote risky behaviors by shaping emotional experiences (Baumeister & Scher, 1988; Cooper, Agocha, & Sheldon, 2000). And because coping motives might better explain drinking behavior of women than men (Beck, Thombs, Mahoney, & Fingar, 1995; Ham & Hope, 2003; Stewart, Zvolensky, & Eifert, 2001), we also explored whether our hypothesized effects of goals and motives on problematic drinking outcomes differ by gender. Conversely, because compassionate goals do not elicit negative affect, we did not expect them to relate to coping motives for drinking, heavy-episodic drinking, or alcohol-related problems. In summary, we predicted that self-image goals are associated with alcohol-related problems through drinking to cope with negative affect (but not through drinking to enhance positive affect); compassionate goals, which do not elicit negative affect, should not be associated with alcohol-related problems, either directly or indirectly.

Method

Participants

Three hundred fifty-nine undergraduates from a large Midwestern University participated in exchange for course credit. We restricted our analyses to students who reported drinking alcohol within the previous semester. This sample included 258 undergraduates (133 women; $M_{\text{age}} = 18.9$; 76% Caucasian, 5% African American, 12% Asian or Asian American), who reported engaging in a median of two heavy drinking episodes per month (Min = none; Max = more than three per week; see heavy-episodic drinking measure below). This reduced sample did not differ in age or ethnicity (Hispanic or not Hispanic) from the full sample, but included fewer females (χ^2 (1, $N = 358$) = 4.67, $p < .05$) and fewer non-White minorities (encompassing African Americans, Asian Americans, and Latinos) (χ^2 (1, $N = 359$) = 16.64, $p < .001$). Moreover, this reduced sample did not differ from the full sample on self-image- or compassionate goals (Fs < 0.01, ps > .94).

Measures

Self-image goals for academics and friendships—We assessed self-image goals for academics and friendships, following previous research (Moeller et al., in press, Study 1B). Participants reported their most important academic goal (e.g., "Maintain a 3.6 GPA," "Make the Dean's list," "Get into business school") and friendship goal (e.g., "Make as many friends as I can," "Form new friendships while maintaining old ones," "Have a close group of friends") for the current semester; they then responded to six items with the lead-in statement "Does having that [academic] [friendship] goal...?" Following previous research conducted in our laboratory (Crocker & Canevello, 2008; Moeller et al., 2009), we selected academic and friendship goal domains based on their importance for first-semester college students. Items included "make you afraid to risk failure," "make you critical or judgmental of others," "make you want to project a certain image to others," "make you feel responsible for achieving it," "make you wish others would stop getting in the way of achieving it," and "make you feel competitive with others." Academic and friendship items were separated by other measures not reported in the current study. All items were rated on a Likert-type scale ranging from 1 (*not at all*) to 5 (*always*). Because previous research suggests that people have high chronic self-image goals in both academics and friendships (Moeller et al., 2009), and because in the current study the self-image items loaded on a single factor across the goal domains according to exploratory factor analysis, we collapsed the academic and friendship self-image items into a single self-image goal composite ($\alpha = .78$).

Compassionate goals for academics and friendships—We also assessed compassionate goals for academics and friendships. While thinking of their important academic and friendship goals, participants responded to five items with the lead-in

statement "Does having that [academic] [friendship] goal..." Items included "help you make a difference for other people," "increase your compassion for others' weaknesses or mistakes," "make you feel close to others," "expand your capacities as a person," and "make you feel collaborative with others." Items were rated on a Likert-type scale ranging from 1 (*not at all*) to 5 (*always*). We again collapsed the compassionate items across the academic and friendship domains (α =.73).

Coping and enhancement motives for drinking—We assessed coping and enhancement motives for drinking with two subscales of the Drinking Motives Questionnaire (Cooper, 1994), which asks respondents why they typically drink alcohol. In accordance with our a priori hypotheses, we were particularly interested in coping motives: "to forget your worries," "because it helps you when you feel depressed or nervous," "to cheer up when you are in a bad mood," "because you feel more self-confident and sure of yourself," and "to forget about your problems" (α = .79). We also assessed enhancement motives to establish the specificity of coping motives. Enhancement items included: "because you like the feeling," "because it's exciting," "to get high," "because it gives you a pleasant feeling," and "because it's fun" (α = .86). All items were rated on a 1 to 4 scale (1 = *almost never/never*, 2 = *sometimes*, 3 = *often*, and 4 = *almost always/always*), a slightly altered response scale from the original measure (which used a 5-point scale).

Heavy-episodic drinking—Participants responded to an item asking how often they engage in heavy-episodic drinking, with the number of drinks differing slightly for men and women, respectively: "How often, on the average, did you have 5 [4] or more drinks in a row [during the previous semester]?" Response options included: "(0) never," "(1) once," "(2) twice," "(3) 3 times," "(4) once a month," "(5) twice a month," "(6) 3 times a month," "(7) once a week," "(8) twice a week," "(9) 3 times a week," or "(10) more than 3 times a week." The 5/4 method has been used extensively over the past 15 years as a measure of heavy-episodic drinking (Wechsler & Nelson, 2001).

Alcohol-related problems—We assessed alcohol-related problems with the Young Adult Alcohol Problems Screening Test (YAAPST), which measures potential negative consequences of alcohol use occurring in the past 12 months (Hurlbut & Sher, 1992). Items were rated on a Likert-type scale from 1 (*never*) to 5 (*always*) to maintain response consistency with the measures of self-image and compassionate goals. The YAAPST has a single-factor structure, good internal consistency (α = .79 in the current study), and good concurrent validity with indices of drinking, alcohol expectancies, and alcohol abuse and dependence symptoms (Hurlbut & Sher, 1992).

Social desirability—We assessed social desirability as a potential covariate with the Marlowe-Crowne Social Desirability Scale (α = .73). The measure asks respondents to choose between 33 pairs of socially desirable (e.g., "I am always courteous, even to people who are disagreeable") or socially undesirable (e.g., "I sometimes think when people have a misfortune they only got what they deserved") statements. People with higher composite scores are more likely to respond in ways that gain them social approval (e.g., underreporting heavy drinking episodes or alcohol-related problems). Thus, controlling for social desirability increases confidence in participants' self-reports.

Analytic Approach

All analyses were conducted using Mplus 5 (Muthen & Muthen, 2007), which estimates model parameters and accounts for missing data using full information maximum likelihood estimation (in the current study less than 2% of all participant data was missing). To evaluate overall fit of our path models reported below, we report the chi-square test of

model fit, the comparative fit index (CFI) and the root mean square error of approximation (RMSEA). A CFI value greater than or equal to 0.95 and a RMSEA value less than or equal to 0.05 indicate adequate fit (Browne & Cudeck, 1992; Hu & Bentler, 1999). Analyses of indirect effects, for which we report Sobel's *z*, were calculated independently using the parameter estimates provided by M-plus.

Preliminary analyses—We first regressed heavy-episodic drinking and alcohol-related problems on self-image goals and compassionate goals (entered simultaneously) in two separate regression equations. Although chronic self-image and compassionate goals predict very different behavioral outcomes, they often correlate in our data because both are interpersonal goals. Thus, to uncover unique effects of each goal, we typically enter both goals as predictors simultaneously (Crocker & Canevello, 2008). In addition, we explored potential goal × gender and motive × gender interactions on our outcome variables (motives, heavy-episodic drinking, and alcohol-related problems; we deemed the sample size insufficient to conduct multiple group analysis).

Path analyses—We then tested our hypothesized model depicted in Figure 1 through path analysis. We predicted that self-image goals relate to coping motives for drinking (Figure 1, Path A), which relate to heavy-episodic drinking episodes (Figure 1, Path B), which in turn relate to alcohol-related problems (Figure 1, Path C). To further quantify the relation between self-image goals, heavy-episodic drinking, and alcohol-related problems, we conducted Sobel tests to inspect potential indirect effects of self-image goals on heavy-episodic drinking and alcohol-related problems through coping motives. A final path model tested the specificity of the coping motives hypothesis by replacing coping motives with enhancement motives, which like coping motives predict heavy drinking and alcohol-related problems (Cooper et al., 1995). However, because enhancement motives involve positive affect, we hypothesized that they would not relate to self-image goals (i.e., we hypothesized that Path A in Figure 1 would be nonsignificant with enhancement motives as the outcome).

Results

Table 1 presents the means, standard deviations, and zero-order correlations among all variables included in the analyses. Social desirability significantly correlated with all measures included in the models; we therefore included social desirability as a covariate in all analyses. Self-image goals correlated with compassionate goals; we therefore controlled for compassionate goals in all analyses that included self-image goals as a predictor. No significant goal × gender or motive × gender interactions emerged on any variable included in Table 1, so gender will receive no further consideration in the Results.

Preliminary Analyses

As expected, heavy-episodic drinking was associated with alcohol-related problems, controlling for social desirability ($B = 1.13$, $SE = 0.12$, $p < .001$, $\beta = .49$). We next entered self-image goals and compassionate goals simultaneously as predictors of coping motives, heavy-episodic drinking, and alcohol-related problems, controlling for social desirability. Compassionate goals were not associated with any of these outcomes (Bs < 0.99, SEs > 0.76, ps > .19, βs < .09). Self-image goals were associated with coping motives ($B = 0.29$, $SE = 0.07$, $p < .001$, $\beta = .27$) and alcohol-related problems ($B = 2.14$, $SE = 0.73$, $p < .01$, $\beta = .19$), but not heavy-episodic drinking ($B = -0.08$, $SE = 0.33$, $p > .79$, $\beta = -.02$) (see Table 1 for the complete list of bivariate correlations).

Path Analyses

We next tested through path analysis whether self-image goals relate to coping motives, which relate to heavy-episodic drinking, which then relate to alcohol-related problems; social desirability and compassionate goals were included in the model as covariates. This model did not adequately fit the data, χ^2 (6, N = 258) = 26.35, p < .001; CFI = 0.857; RMSEA = 0.115. Because previous analyses indicated that self-image goals directly related to alcohol-related problems, we included a direct path from self-image goals to alcohol-related problems in the model; we also included a direct path from coping motives to alcohol-related problems, in accordance with theory and research on coping motives. These modifications improved model fit to acceptable criteria, χ^2 (4, N = 258) = 4.65, p = .33; CFI = 0.995; RMSEA = 0.025. This final model accounted for 34% of the variance in alcohol-related problems.

Figure 2 presents the path coefficients for the final model; social desirability and compassionate goals, although included as covariates, are not depicted. As predicted, significant paths emerged from self-image goals to coping motives, from coping motives to heavy-episodic drinking, and from heavy-episodic drinking to alcohol-related problems. The direct association between self-image goals and alcohol-related problems remained significant even with the potential mediators (coping motives and heavy-episodic drinking) included in the model (B = 2.25, SE = 0.59, p < .001, β = .21). Nevertheless, consistent with our predictions, self-image goals were indirectly associated with alcohol-related problems through coping motives (Sobel's z = 2.29, p < .05). Self-image goals were also indirectly associated with episodes of heavy drinking through coping motives (Sobel's z = 2.19, p < .05), even though the bivariate correlation between self-image goals and heavy-episodic drinking was not significant.

Finally, we tested the specificity of our final model by replacing coping motives with enhancement motives; this model is depicted in Figure 3. Although this path model fit the data well, χ^2 (4, N = 258) = 3.81, p = .43; CFI = 1.000; RMSEA = 0.000, self-image goals were not associated with enhancement motives (B = 0.08, SE = 0.09, p > .33, β = .07). Further, enhancement motives were not associated with alcohol-related problems in this sample (B = 0.17, SE = 0.49, p > .73, β = .02). The high model fit likely stems from the strong association between enhancement motives and heavy-episodic drinking (B = 1.53, SE = 0.22, p < .001, β = .41). Thus, as predicted, enhancement motives do not explain the association between self-image goals and alcohol-related problems.

Discussion

As predicted, the current study found that self-image goals are associated with alcohol-related problems. A model with significant paths from self-image goals (averaged across academics and friendships) to coping motives, from coping motives to heavy-episodic drinking, and from heavy-episodic drinking to alcohol-related problems fit the data well; direct paths from self-image goals and coping motives to alcohol-related problems were also included. Analyses of the indirect effects suggested that self-image goals contribute to heavy-episodic drinking and alcohol-related problems through coping motives for drinking. Finally, nonsignificant interactions with gender suggest that men and women do not differ on how self-image goals contribute to problems with alcohol.

Particularly pertinent to the current study, a significant path from self-image goals to coping motives was expected based on previous research suggesting that chronic self-image goals predict chronic negative affect (Crocker & Canevello, 2008; Moeller et al., 2009), and further extends the finding that people who base their self-worth on others' approval experience problems with alcohol in the freshman year of college (Luhtanen & Crocker,

2005). This finding is particularly important in light of research suggesting that college students often perceive that existing social norms condone heavy drinking (Borsari & Carey, 2003; A. Park, Sher, & Krull, 2008; Pedersen, LaBrie, & Lac, 2008; Perkins & Berkowitz, 1986). Not only may students with high self-image goals drink alcohol to alleviate negative affect, but they may think such behavior is common among their peers. Interactions between self-image goals, coping motives, and norm misperceptions could lead students to drink especially high quantities of alcohol (and potentially experience especially high numbers of alcohol-related consequences), predictions that remain to be tested in future studies.

In contrast to our initial hypotheses, the direct effect of self-image goals on heavy-episodic drinking was nonsignificant. Nevertheless, our results revealed that self-image goals indirectly contribute to heavy drinking through coping motives. Although these indirect effects analyses did not show that coping motives account for a previously significant association between self-image goals and heavy-episodic drinking as required by some mediational approaches (e.g., Baron & Kenny, 1986), analyses of the indirect effects still provide a sufficient test of the intervening variable hypothesis (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Thus, even without an initially significant correlation, self-image goals can still indirectly influence heavy-episodic drinking through coping motives, as our analyses suggest.

The direct effect of self-image goals on alcohol-related problems was significant, however. And even when we included in the final model coping motives and heavy-episodic drinking, which themselves carry negative consequences associated with drinking (Cooper et al., 1995; C. L. Park & Levenson, 2002), self-image goals remained a significant predictor of alcohol-related problems. This finding indicates that self-image goals are directly associated with YAAPST alcohol problems, in addition to their indirect association through coping motives. This significant direct effect suggests contributions from additional mechanisms. Because self-image goals predict interpersonal conflict and hostility (Moeller et al., in press), and because the YAAPST includes conflict-related items (e.g., physical altercations, destruction of property, problems involving loved ones, and unintended sexual encounters), conflict may also contribute to the association between self-image goals and alcohol-related problems. In particular, we speculate that interpersonal conflict may account for the direct effect of self-image goals on alcohol-related problems, further elucidating how self-image goals contribute to alcohol-related problems even though they did not significantly correlate with heavy-episodic drinking. Future studies that specifically measure interpersonal conflict, especially during drinking episodes, can test this hypothesis (e.g., Westmaas, Moeller, & Woicik, 2007).

Both direct and indirect associations between self-image goals and alcohol-related problems highlight the importance of modifying how students pursue academic and friendship goals. Pursuing academic and friendship goals while trying to construct and defend desired self-views leads to chronic negative affect, which people may attempt to reduce through problematic drinking. Consequently, interventions aimed at reducing self-image goals associated with academic and friendship goals may reduce chronic negative affect, and consequently reduce problematic drinking. Reducing self-image goals and ensuing negative affect could even extend beyond problematic drinking, as suggested by previous research showing that motivation to escape negative affect may underlie other risky behaviors as well (Cooper, Wood, Orcutt, & Albino, 2003). And reducing self-image goals could simultaneously improve students' interpersonal (Crocker & Canevello, 2008; Moeller et al., in press) and mental health (Crocker, Canevello, Breines, & Flynn, 2008; Moeller & Crocker, 2009) outcomes, thus promoting positive affect that may buffer problematic drinking (Mohr, Brannan, Mohr, Armeli, & Tennen, 2008; Wills, Sandy, Shinar, & Yaeger, 1999).

The correlational nature of the data prevents any conclusions about the causal direction of the effects; previous alcohol use or motivations for drinking may shape students' interpersonal goals. We note, though, that research and theory typically view motivations and goals as causes, not consequences, of drinking (Cooper, 1994; Cox & Klinger, 1988). Another limitation involves reliance on retrospective self-reports, which may be distorted by social desirability concerns, self-deception, or inaccurate recall. Although controlling for social desirability increases confidence in the current findings, we cannot completely rule out concerns about the accuracy of self-report. Finally, these results await replication in a prospective design with a larger, more representative sample of students and more refined measures of alcohol use.

In summary, the current study supported the hypothesis that self-image goals contribute to alcohol-related problems through coping motives for drinking. No other study we know of has linked goals to construct and defend desired self-views to problems with alcohol. Yet this link makes sense, given that such goals elicit negative affect, and people sometimes drink to escape from negative affect. We consider these results promising, both theoretically and practically, because a path model that began with self-image goals accounted for 34% of the variance in alcohol-related problems in this sample of undergraduates. Reducing the self-image goals of college students may substantially attenuate their risky alcohol consumption.

Acknowledgments

References

Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology 1986;51(6):1173–1182. [PubMed: 3806354]

Baumeister RF. Esteem threat, self-regulatory breakdown, and emotional distress as factors in self-defeating behavior. Review of General Psychology 1997;1(2):145–174.

Baumeister RF, Scher SJ. Self-defeating behavior patterns among normal individuals: Review and analysis of common self-destructive tendencies. Psychological Bulletin 1988;104(1):3–22. [PubMed: 3043527]

Beck KH, Thombs DL, Mahoney CA, Fingar KM. Social context and sensation seeking: Gender differences in college student drinking motivations. International Journal of the Addictions 1995;30(9):1101–1115. [PubMed: 7591351]

Borsari B, Carey KB. Descriptive and injunctive norms in college drinking: A meta-analytic integration. Journal of Studies on Alcohol 2003;64(3):331–341. [PubMed: 12817821]

Browne MW, Cudeck R. Alternative ways of assessing model fit. Sociological Methods & Research 1992;21(2):230–258.

Cooper ML. Motivations for alcohol use among adolescents: Development and validation of a four-factor model. Psychological Assessment 1994;6(2):117–128.

Cooper ML, Agocha VB, Sheldon MS. A motivational perspective on risky behaviors: The role of personality and affect regulatory processes. Journal of Personality 2000;68(6):1059–1088. [PubMed: 11130732]

Cooper ML, Frone MR, Russell M, Mudar P. Drinking to regulate positive and negative emotions: A motivational model of alcohol use. Journal of Personality and Social Psychology 1995;69(5):990–1005. [PubMed: 7473043]

Cooper ML, Wood PK, Orcutt HK, Albino A. Personality and the predisposition to engage in risky or problem behaviors during adolescence. Journal of Personality and Social Psychology 2003;84(2):390–410. [PubMed: 12585812]

Cox WM, Klinger E. A motivational model of alcohol use. Journal of Abnormal Psychology 1988;97(2):168–180. [PubMed: 3290306]

Crocker J, Canevello A. Creating and undermining social support in communal relationships: The role of compassionate and self-image goals. Journal of Personality and Social Psychology 2008;95(3): 555–575. [PubMed: 18729694]

Crocker, J.; Canevello, A.; Breines, JG.; Flynn, H. Manuscript submitted for publication. 2008. Interpersonal goals and change in anxiety and dysphoria: Effects of compassionate and self-image goals.

Ham LS, Hope DA. College students and problematic drinking: A review of the literature. Clinical Psychology Review 2003;23(5):719–759. [PubMed: 12971907]

Higgins RL, Marlatt GA. Fear of interpersonal evaluation as a determinant of alcohol consumption in male social drinkers. Journal of Abnormal Psychology 1975;84(6):644–651. [PubMed: 1194525]

Hingson R, Heeren T, Winter M, Wechsler H. Magnitude of alcohol-related mortality and morbidity among U.S. college students ages 18-24: Changes from 1998 to 2001. Annual Review of Public Health 2005;26:259–279.

Hu, L.-t.; Bentler, PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling 1999;6(1):1–55.

Hull JG. A self-awareness model of the causes and effects of alcohol consumption. Journal of Abnormal Psychology 1981;90(6):586–600. [PubMed: 7320328]

Hull JG, Young RD. Self-consciousness, self-esteem, and success-failure as determinants of alcohol consumption in male social drinkers. Journal of Personalilty and Social Psychology 1983;44:1097–1109.

Hurlbut SC, Sher KJ. Assessing alcohol problems in college students. Journal of American College Health 1992;41(2):49–58. [PubMed: 1460173]

Luhtanen RK, Crocker J. Alcohol Use in College Students: Effects of Level of Self-Esteem, Narcissism, and Contingencies of Self-Worth. Psychology of Addictive Behaviors 2005;19(1):99–103. [PubMed: 15783284]

MacKinnon DP, Lockwood CM, Hoffman JM, West SG, Sheets V. A comparison of methods to test mediation and other intervening variable effects. Psychological Methods 2002;7(1):83–104. [PubMed: 11928892]

Moeller, SJ.; Crocker, J. Manuscript submitted for publication. 2009. Linking contingencies of self-worth to distress: Mediating roles of self-image goals and shame.

Moeller SJ, Crocker J, Bushman BJ. Creating hostility and conflict: Effects of entitlement and self-image goals. Journal of Experimental Social Psychology. in press.

Moeller, SJ.; Crocker, J.; Canevello, A. Manuscript submitted for publication. 2009. Compassionate goals and feeling connected: Enhancing self-regulation and goal progress.

Mohr CD, Brannan D, Mohr J, Armeli S, Tennen H. Evidence for positive mood buffering among college student drinkers. Personality and Social Psychology Bulletin 2008;34(9):1249–1259. [PubMed: 18550862]

Muthen, LK.; Muthen, BO. Mplus User's Guide. Fifth Edition. Muthen & Muthen; Los Angeles, CA: 2007.

Neighbors C, Lee CM, Lewis MA, Fossos N, Larimer ME. Are social norms the best predictor of outcomes among heavy-drinking college students? Journal of Studies on Alcohol and Drugs 2007;68(4):556–565. [PubMed: 17568961]

Park A, Sher KJ, Krull JL. Risky drinking in college changes as fraternity/sorority affiliation changes: A person-environment perspective. Psychology of Addictive Behaviors 2008;22(2):219–229. [PubMed: 18540719]

Park CL, Levenson MR. Drinking to cope among college students: Prevalence, problems and coping processes. Journal of Studies on Alcohol 2002;63(4):486–497. [PubMed: 12160108]

Pedersen ER, LaBrie JW, Lac A. Assessment of perceived and actual alcohol norms in varying contexts: Exploring Social Impact Theory among college students. Addictive Behaviors 2008;33(4):552–564. [PubMed: 18068308]

Perkins HW, Berkowitz AD. Perceiving the community norms of alcohol use among students: Some research implications for campus alcohol education programming. International Journal of the Addictions 1986;21(9):961–976. [PubMed: 3793315]

Schlenker, BR. Self-presentation. In: Leary, MR.; Tangney, JP., editors. Handbook of self and identity. Guilford Press; New York, NY, US: 2003. p. 492-518.

Simons JS, Gaher RM, Oliver MNI, Bush JA, Palmer MA. An Experience Sampling Study of Associations between Affect and Alcohol Use and Problems among College Students. Journal of Studies on Alcohol 2005;66(4):459–469. [PubMed: 16240553]

Slutske WS. Alcohol Use Disorders Among US College Students and Their Non-College-Attending Peers. Archives of General Psychiatry 2005;62(3):321–327. [PubMed: 15753245]

Stewart SH, Zvolensky MJ, Eifert GH. Negative-reinforcement drinking motives mediate the relation between anxiety sensitivity and increased drinking behavior. Personality and Individual Differences 2001;31(2):157–171.

Wechsler H, Lee JE, Kuo M, Seibring M, Nelson TF, Lee H. Trends in college binge drinking during a period of increased prevention efforts. Journal of American College Health 2002;50(5):203–217. [PubMed: 11990979]

Wechsler H, Nelson TF. Binge drinking and the American college students: What's five drinks? Psychology of Addictive Behaviors 2001;15(4):287–291. [PubMed: 11767258]

Westmaas J, Moeller S, Woicik PB. Validation of a measure of college students' intoxicated behaviors: Associations with alcohol outcome expectancies, drinking motives, and personality. Journal of American College Health 2007;55(4):227–237. [PubMed: 17319329]

Wills TA, Sandy JM, Shinar O, Yaeger A. Contributions of positive and negative affect to adolescent substance use: Test of a bidimensional model in a longitudinal study. Psychology of Addictive Behaviors 1999;13(4):327–338.
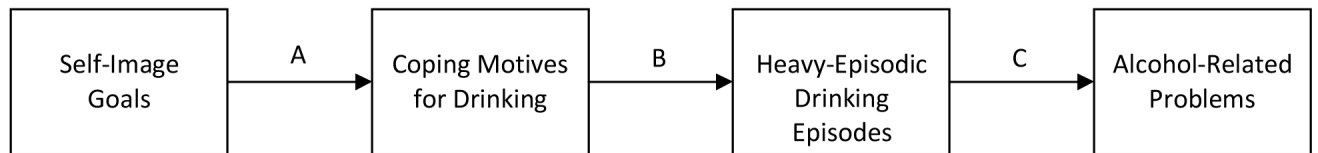
Figure 1.
Hypothesized model. Self-image relate to coping motives for drinking (Path A), which relate to heavy-episodic drinking episodes (Path B), which in turn relate to alcohol-related problems (Path C).
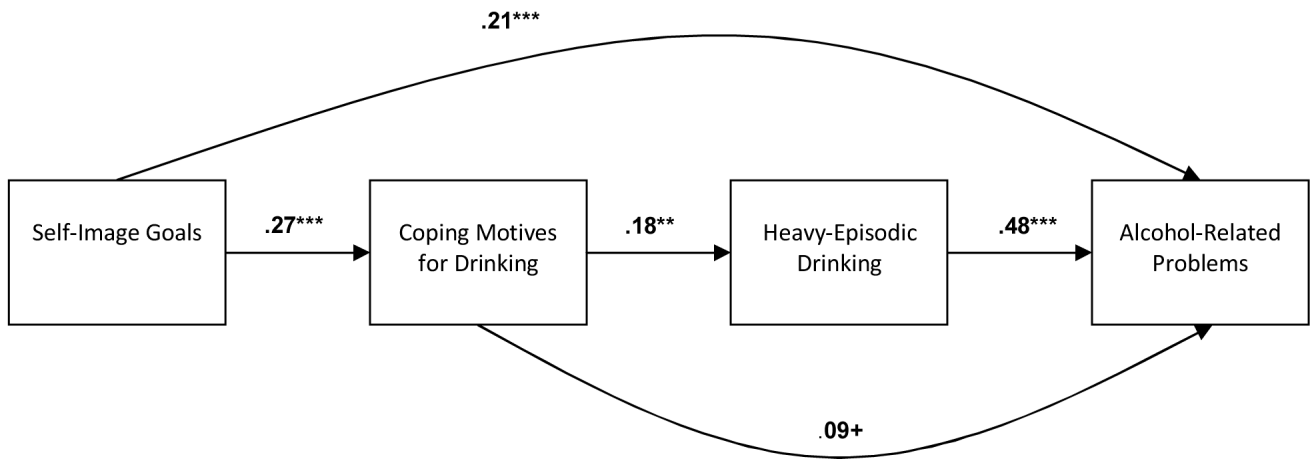
Figure 2.
Path model, χ^2 (4, $N = 258$) = 4.65, $p = .33$; CFI = 0.995; RMSEA = 0.025, showing standardized regression coefficients for associations between self-image goals and coping motives, coping motives and heavy-episodic drinking, and heavy-episodic drinking and alcohol-related problems. Paths are also included from self-image goals and coping motives to alcohol-related problems (the latter association is a trend). Compassionate goals and social desirability are included as covariates, though they are not depicted in the model; $+ p < .09$, $* p < .05$, $** p < .01$, $*** p < .001$.
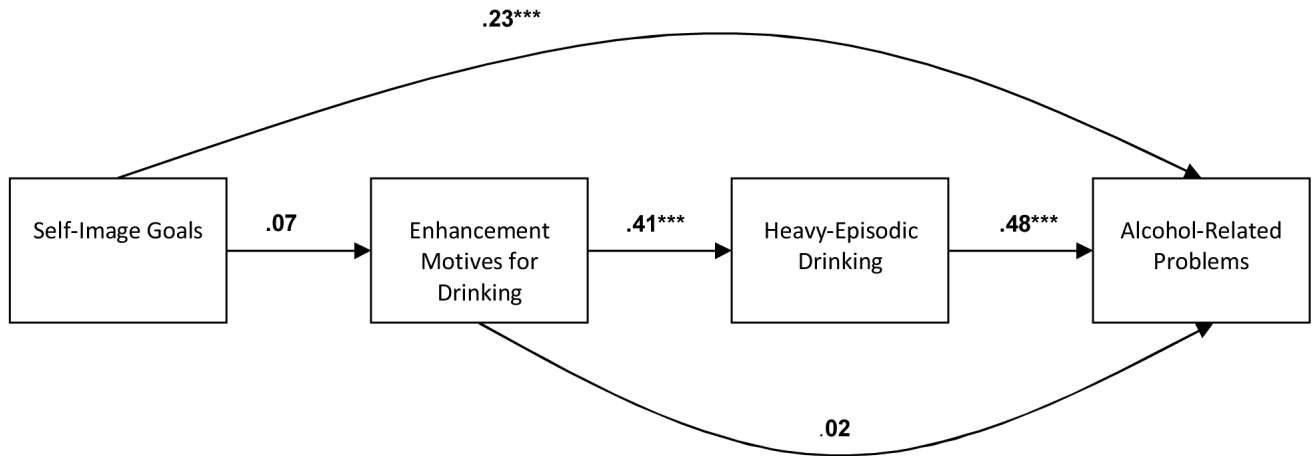
Figure 3.
Path model, χ^2 (4, $N = 258$) = 3.81, $p = .43$; CFI = 1.000; RMSEA = 0.000, showing standardized regression coefficients for associations between self-image goals and enhancement motives (nonsignificant), enhancement motives and heavy-episodic drinking, and heavy-episodic drinking and alcohol-related problems. Paths are also included from self-image goals and enhancement motives to alcohol-related problems (the latter association is also nonsignificant). Thus, enhancement motives do not explain how self-image goals contribute to alcohol-related problems. Compassionate goals and social desirability are included as covariates, though they are not depicted in the model; *** $p <$ .001.

Table 1

Means, standard deviations, and zero-order correlations among variables included in the models

	M	SD	1	2	3	4	5	6	7
1. Self-Image Goals	2.89	0.58	--						
2. Compassionate Goals	3.21	0.55	.35 **	--					
3. Coping Motives	1.82	0.64	.31 **	.10	--				
4. Enhancement Motives	2.67	0.73	.15 *	.14 *	.32 **	--			
5. Heavy-Episodic Drinking	5.25	2.76	.03	.01	.18 **	.41 **	--		
6. YAAPST Alcohol Problems	26.93	6.39	.27 **	.12	.26 **	.27 **	.51 **	--	
7. Social Desirability	0.44	0.15	-.23 **	.17 **	-.20 **	-.15 *	-.13 *	-.24 **	--

Note. Self-image and compassionate goals were averaged across academic and friendship domains

*
p < .05

**
p < .01.