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Delineating Potential Mechanisms of Implicit Alcohol Cognitions: Drinking Restraint, Negative Affect, and their Relationship with Approach Alcohol Associations

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Abstract

Problem drinkers may use alcohol to avoid negative mood states and may develop implicit cognitive associations between negative emotional states and reinforcing properties of drinking. Ironically, attempts to control drinking, such as among those high in drinking restraint, may inadvertently increase desire to drink and subsequent alcohol consumption, and this may be exaggerated under times of emotional distress when urges to drink are high. We examined whether individuals who are high on drinking restraint would demonstrate stronger alcohol-related thoughts elicited by stimuli that represent the desire to use alcohol, in response to stronger versus weaker negative mood arousal. Seventy hazardous drinkers completed measurements of drinking restraint, alcohol consumption, and consequences of use. After being randomized to view negative or positive pictures sets, participants completed an Implicit Association Task (IAT) to test differences in the strength of the association between desire to approach or avoid alcohol or water cues, and then a measurement of subjective craving following the IAT. Regression analyses showed that trait restriction, but not temptation, was positively related to IAT scores, after controlling for relevant covariates and explained 7% of the total variance. Trait temptation, but not IAT, predicted subjective craving. Negative affect was unrelated to IAT scores, singly or in conjunction with measures of drinking restraint, contrary to predictions. In sum, implicit alcohol cognitions are related to attempts to restrict drinking, but not temptation to drink, and are less strongly influenced by mood state.

Keywords

Implicit cognitions; drinking restraint; urges; alcohol consumption

According to the negative reinforcement model of addiction, alcohol use is maintained by the avoidance of conditioned aversive stimuli (Baker, Piper, McCarthy, Majeskie, & Fiore,

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2004), such as negative affect. Drinkers who use alcohol to avoid negative emotions may develop implicit cognitive associations between emotional states and reinforcing properties of drinking, which may elicit strong thoughts and urges to drink. Associations among these factors may become so strongly paired that they automatically trigger a maladaptive self-regulatory process wherein negative mood leads to alcohol use or the desire to drink even in the absence of conscious or deliberate intention (Wiers & Stacy, 2006).

Drinking restraint is an important trait-like aspect of self-regulation that has been associated with heightened risk for alcohol problems and risky consumption (Collins, 1993; Connor, Young, Williams, & Ricchardelli, 2000). Drinking restraint refers to attempts to cognitively regulate one's desire for and consumption of alcohol (Collins, 1993; Ruderman & McKirnan, 1984), and is typically measured by The Temptation and Restraint Inventory (TRI; Collins et al., 1989). The TRI assesses two separate dimensions of drinking restraint: Cognitive and Emotional Preoccupation (CEP), which refers to excessive concern about drinking (temptation); and Cognitive and Behavioral Control (CBC), which refers to attempts to limit and control one's drinking (restriction). Multiple studies have shown that CBC and CEP represent distinct factors, showing divergent associations to measures of alcohol consumption, consequences of use, and self-reported reasons for drinking (e.g. Lyvers et al., 2010; MacKillop et al., 2006; Stewart & Chambers, 2000).

The desire to avoid certain cognitive processes may be one mechanism linking drinking restraint to problematic alcohol use under time of emotional distress. As explained by the ironic process theory, attempts to deliberately avoid or inhibit thoughts reveal an ironic effect in that they rebound and intensify over time (e.g. Wegner & Zanakos, 1994), which may exacerbate problem behavior (Hayes & Gifford, 1997; Palfai, Colby, Monti, & Rohsenow, 1997). Thus, as outlined by the negative reinforcement model of addiction, negative emotional states may automatically elicit strong thoughts and urges to drink among those motivated to use alcohol to cope with distress (Baker, Piper, McCarthy, Majeskie, & Fiore, 2004). However, individuals who attempt to control their alcohol consumption (i.e., high on drinking restraint) may view thoughts about alcohol as a "danger" cue, and increase their attempts to avoid those types of thoughts. This may intensify the activation of alcohol-related cognitions and paired associations between negative mood states and urges to drink (Carter & Tiffany, 1999; Tiffany, 1990; Wiers & Stacy, 2006).

The Implicit Association Task (IAT; Greenwald, McGee & Schwartz, 1998) has increasingly been used to study underlying cognitive mechanisms of drug and alcohol use behavior (Ostafin & Palfai, 2006; Wiers, Houben, & Kraker, 2007). The IAT is a performance-based computer categorization task that measures the relative strength of associations between two mental concepts, such as alcohol stimuli and approach or avoidance stimuli (Greenwald et al., 1998). The primary assumption of the approach/avoid IAT is that it is easier and thus faster for problem drinkers to categorize congruent mental concepts (approach + alcohol stimuli or water + avoid stimuli) than incongruent mental concepts (approach + water stimuli or avoid + alcohol stimuli). For example, Palfai and Ostafin (2003) found that an IAT measuring implicit alcohol-approach associations was related to difficulty controlling alcohol use and appetitive responses to alcohol cues. In a subsequent study using the same IAT paradigm, IAT scores were found to be related to self-reported drinking motives (coping and enhancement) and heavy episodic drinking (Ostafin & Palfai, 2006). While these studies primarily conceptualized the IAT as a trait-like measure of implicit attitudes, findings also suggest that situation-specific characteristics, including emotional state, can influence the associative pattern between IAT stimuli (Desteno et al., 2004; Gawronski & Bodenhausen, 2006; Gemar et al., 2001; Hermans et al., 2002; Hermans et al., 2005; Mitchell et al., 2003; Rudman & Lee, 2002; Wiers & Stacy, 2006; Wiers et al., 2006; Wiers et al., 2010). Few, if any studies to our knowledge have examined differences

in implicit alcohol-approach attitudes as a function of context-based emotional arousal and stable individual difference factors in a community sample of drinkers.

This study examined the unique and interactive associations between drinking restraint factors (TRI CBC and CEP), negative affect arousal, and implicit alcohol-approach associations in a sample of hazardous drinkers. We hypothesized positive associations between the CBC (trait restriction) and CEP (trait temptation) subscales of the TRI to the strength of implicit alcohol-approach associations. A second aim was to examine the moderating effects of experimentally-induced negative mood on associations between drinking restraint factors and implicit alcohol cognitions. We hypothesized that associations between drinking restraint factors and implicit alcohol-approach associations would be stronger for those who report greater negative affect arousal versus weaker negative affect arousal. A final aim was to investigate the association between implicit alcohol-approach associations and subjective craving given literature suggesting that implicit alcohol cognitions may tap into an acute activation of the appetitive desire to drink (Palfai & Ostafin, 2003). We proposed a positive association between implicit alcohol cognitions and reports of subjective craving assessed following completion of an IAT.

Method

Participants

Seventy hazardous drinkers (50% male; mean age = 25.7, $SD = 8$; range 18-55) were recruited from via flyers, newspaper advertisements, and the internet. Participants were included in the study if they were 21 years or older; considered “at-risk drinkers” who consumed at least 4 or more standard drinks (3 or more drinks for women) per occasion at least twice per month in the past 90-days, or 14 or more drinks per week for men (7 or more drinks per week for women); did not report a significant medical disorder or substance dependence (other than nicotine and caffeine); and were not currently in substance abuse treatment. Approximately half were single (57%, $n = 39$), full-time students (54%, $n = 38$), and Caucasian (61%, $n = 43$).

Measures

Modified Quantity/Frequency Index of Alcohol Consumption (QFI; Hagman, Noel, & Clifford, 2007) assessed drinking behavior in the prior 90-days. An overall alcohol consumption index was created by multiplying together (a) the quantity of wine, beer, and liquor consumed per drinking episode with (b) the frequency of wine, beer, and liquor consumed. We also assessed for knowledge or insight about consequences of one’s drinking, coded as a dichotomous yes/no variable. To do this, participants reported whether, in the past year, they had continued drinking despite knowledge of a recurrent physical or psychological problem that was caused or exacerbated by their drinking. This item was used to determine whether explicit and subjective assessments of drinking problems are correlated with implicit attitudes about drinking.

Temptation and Restraint Inventory (TRI; Collins & Lapp, 1992). The TRI is a 15-item measure of trait temptation and restriction to drink, administered on a 9-point Likert scale (1 = *Never* to 9 = *Always*). The current study used the Cognitive and Emotional Preoccupation subscale (CEP; $\alpha = .90$) and the Cognitive and Behavioral Control subscale (CBC; $\alpha = .81$).

Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). The PANAS was used to assess changes in positive affect (PA; 10 items) and negative affect (NA; 10 items), following the experimental manipulation (see below). Participants were asked to rate their current mood using a 5-point Likert scale, where 1 = *Very slightly* and 5 = *Extremely*.

Reliability estimates were high (PA pre-task $\alpha = .92$, post-task $\alpha = .92$; NA pre-task $\alpha = .85$, post-task $\alpha = .89$).

Alcohol Urge Questionnaire (AUQ; Bohn et al., 1995) is an 8-item self-report questionnaire that measures the immediate state of alcohol craving. It was administered after participants completed the IAT ($\alpha = .80$).

Procedure

After completing a brief telephone screen, eligible individuals were invited to an experimental session that lasted approximately one hour. Upon arrival, a breath sample was taken to assure abstinence. After signing informed consent, participants were randomly assigned to either a negative mood prime ($n = 41$) or a positive mood prime ($n = 29$) and then completed the battery of questionnaires, followed by a mood induction (below), and then the IAT task.

Mood induction—Positive and negative pictures were selected from International Affective Picture System (IAPS; Lang, Bradley, & Cuthbert, 2001). For each block, a set of 30 pictures were presented once, with the order of picture presentation randomized within each set of picture blocks. Pictures were presented for 5 seconds each, with 5 second intervals in between. Block presentation lasted for 5 minutes. The positive picture set manipulation was used to differentiate the influence of affect valence on alcohol memory networks (Steinmetz, Addis, & Kensinger, 2010). Participants completed the PANAS immediately before and after viewing the pictures.

Implicit Association Task (IAT)—Following the second administration of the PANAS, participants completed a 10-minute IAT. The paradigm for the current study was presented in accordance with the recommendations of Greenwald, Nosek, and Banaji (2003).¹ Participants were presented with word and picture categories on the computer and asked to classify the stimuli into a target category (approach or avoid, alcohol or water) based on pre-defined rules by pressing the “D” or “K” key on the keyboard. Reaction times for correctly classifying a word were recorded and analyzed. The stimuli for the IAT consisted of seven approach-related words and seven avoidance-related words, six alcohol picture stimuli (pitcher, bottle, or glass of beer), and six water picture stimuli (pitcher, bottle, or glass of water). Participants had to correctly classify the word or picture before moving on to the next word or picture (Appendix A).

Participants completed the AUQ after the IAT to obtain a measurement of subjective craving. Participants received \$20. All procedures were approved by the institutional IRB.

Data Reduction—IAT data were transformed according to scoring guidelines set forth by Greenwald, Nosek, and Banaji (2003). No trials were deleted for extremely high or low

¹The IAT paradigm consisted of: (a) a 20-trial target discrimination block (presented on the screen: left = alcohol pictures and right = water pictures); (b) a 20-trial attribute discrimination block (presented on the screen: left = approach words and right = avoid words); (c) a 20-trial practice congruent combination block (left = alcohol pictures + approach words and right = water pictures + avoid words); (d) a 40-trial critical/test block of the same combination; (e) a 20-trial target discrimination block in which the target categories were reversed (left = water pictures and right = alcohol pictures); (f) a 20-trial practice incongruent combination block (left = water pictures + approach words and right = alcohol pictures + avoid words); and (g) a 40-trial critical/test block of the same combination in (f). The stimuli for the target and attribute discrimination blocks were presented randomly, and the stimuli for the combination blocks were presented randomly with the restriction that the trials alternated between target and attribute stimuli. Each stimulus was presented twice in the critical combination blocks. Two lead-in trials preceded each of the critical combination blocks and a 250-ms interval separated each trial after a response was made in all blocks. Two IAT orders were used: one with the alcohol and approach (and water and avoid) combination (the congruent block) first and one with the water and approach (and alcohol and avoid) combination (the incongruent block) first. IAT order was counterbalanced across participants and error feedback was not provided.

response times (e.g., greater than 10,000 ms and less than 300 ms). IAT order varied between the incongruent first block ($M = -0.35$, $SD = 0.36$) and incongruent second block ($M = -0.17$, $SD = 0.36$), $F(1, 69) = 3.42$, $p > .05$, and was covaried in multiple regression analyses. The analysis of IAT data used the D measure (Greenwald et al., 2003), which takes into account the number of errors and average response latency and calculates the IAT score by dividing the difference between test block means by the standard deviation of all the response latencies in the two test blocks yielding a total “reaction time” variable. A larger D score reflects a stronger association between alcohol and approach stimuli (also termed the “IAT effect”).

Results

Manipulation Check

Mood condition assignment was equivalent across gender, and measures of drinking restraint and alcohol consumption. ANOVA tests revealed that the mood manipulation was successful in that NA and PA did change in the expected directions². Mood condition assignment (NA versus PA) did not vary as a function of demographics, drinking characteristics, or reports of drinking restraint and was unrelated to IAT scores and.

Alcohol Use Characteristics

Participants consumed an average of 4 standard drinks per weekday drinking episode ($SD = 3.54$), and 7 per weekend drinking episode ($SD = 4.03$); and reported an average of 38 drinking days (42%) out of the 90-day reporting period. There were no gender differences on alcohol consumption (quantity $\times$ frequency) [$F(1,68) = 0.54$, $p > .05$].

Pearson correlation coefficients showed that TRI CBC was positively related to knowledge of drinking problems ($r = .45$, $p < .01$) and TRI CEP was positively related to alcohol consumption ($r = .50$, $p < .01$), subjective craving ($r = .38$, $p < .01$), and knowledge of drinking problems ($r = .45$, $p < .01$). A partial correlation, controlling for IAT order effects, showed that IAT scores were marginally significantly correlated with alcohol consumption ($pr = .21$, $p = .09$) and significantly correlated with knowledge of drinking problems ($pr = .25$, $p < .05$).

Moderation Analyses: Drinking Restraint and Negative Affect

Following Ostafin and Palfai (2006), hierarchical regression analyses were used to examine the incremental value of two measures of drinking restraint, TRI CBC (trait restriction) and TRI CEP (trait temptation) as predictors of IAT scores (controlling for order effects and alcohol consumption), and the moderating effect of NA arousal.³ IAT scores were separately regressed onto the two TRI subscales (CEP or CBC). A product term was then computed between the independent variable of interest and the moderator (e.g., $z\text{-CBC} \times z\text{-NA}$). Variables were first standardized (i.e., z -transformed) to reduce multicollinearity and to account for scale invariance (Aiken & West, 1991; Cohen & Cohen, 1983; Jaccard & Turrissi, 2003). Unstandardized regression coefficients are reported (See Aiken & West, 1991). Results of the first model showed that, after controlling for covariates, only TRI CBC emerged as a unique correlate of IAT scores ($b = .10$, $p < .05$). NA was unrelated to IAT

²Those in the negative mood condition reported greater increases in negative affect [$M\Delta = 5.67$, $SD = 7.04$; $F(1, 69) = 25.30$, $p < .01$], relative to those in the positive mood condition [$M\Delta = -1.23$, $SD = 3.21$], and greater decreases in positive affect, [$M\Delta = -5.61$, $SD = 8.00$; $F(1, 69) = 10.80$, $p < .01$] compared to those in the positive mood condition [$M\Delta = -0.80$, $SD = 4.50$].

³We also included gender as a covariate in regression models due to its association with weekend drinking, but it was not significantly related to IAT scores and inclusion did not appreciably alter the findings.

scores and the $CBC \times NA$ interaction was not significant. No other significant effects were found (Table 1).

To test the alternative hypothesis that perhaps implicit alcohol cognitions are more strongly influenced by positive affect arousal, rather than negative affect, we examined a $CBC \times PA$ interaction, as well as a $CEP \times PA$ interaction on IAT scores. Multiple regression analyses were used, controlling for relevant covariates mentioned above. PA was unrelated to implicit alcohol cognitions at the main effect level, and in conjunction with measures of drinking restraint for both models testing CBC and CEP.

IAT and Subjective Craving

A partial correlation, controlling for order effects and trait restriction (CBC) showed that IAT scores were positively related to urges to drink following the IAT ($pr = .22, p < .05$); but this effect was no longer significant after controlling for gender ($pr = .12, p = .16$). Trait temptation (CEP) was positively correlated to subjective craving, after controlling for trait restriction and gender ($pr = .44, p < .01$). NA was unrelated to subjective craving after controlling for gender and trait temptation ($pr = .08, p = .25$).

Discussion

The primary aim of the current study was to examine the association between drinking restraint, a known risk factor for alcohol dependence and problem drinking, and implicit alcohol-approach associations. A second aim, in line with the negative reinforcement model of addiction, was to examine whether negative mood would moderate the relationship between drinking restraint and implicit cognitions. Consistent with our first hypothesis, we found that self-reported attempts to restrict drinking (CBC) were significantly and uniquely associated with implicit associations between alcohol stimuli and approach-related words and accounted for approximately 7% of the variance in IAT scores. This study replicates prior research, suggesting drinkers who attempt to control their drinking are predisposed to alcohol-related thoughts (Palfai & Ostafin, 2003; Ostafin & Palfai, 2006), and that such attempts may lead to an unanticipated rebound effect of thoughts about drinking (Wenzlaff et al., 1988). This relationship may be at least partially explained by ironic process theory, which indicates that more frequent and intense attempts to control unwanted thoughts actually leads to an increase in those thoughts (Wenzlaff et al., 1988). Over time, attempts to restrict alcohol consumption may ultimately reduce self-regulatory capacity to restrain future drinking episodes and thus, may explain why restrained drinkers are more likely to demonstrate drinking problems (Connor et al 2004; 2007; Muraven et al., 2006). Further, our results partially support prior research showing that laboratory measures of implicit alcohol cognitions validly assess drinking-related attitudes (Ostafin & Palfai, 2006), in that we found a significant and positive association between approach-alcohol attitudes and knowledge of drinking problems (controlling for IAT order effects), and a marginally significant association between IAT scores and alcohol consumption ($p = .09$).

Contrary to our second hypothesis, we did not find that the relationship between drinking restraint factors and implicit alcohol-approach associations was moderated by greater negative affect arousal. In testing an alternative model, we did not find that positive affect arousal was related to implicit alcohol-approach attitudes, either singly or in conjunction with measures of drinking restraint. These findings suggest that alcohol-approach associations may not be influenced as strongly by contextual factors, such as mood, as they are by dispositional factors, such as drinking restraint. Recently, Ostafin and Brooks (2011) demonstrated that negative affect strengthened alcohol-approach associations only in those with high coping motives, suggesting that the influence of negative affect arousal on automatic alcohol motivation may be contingent upon individual differences in explicitly-

reported drinking motives (Ostafin & Brooks, 2011), which we did not examine in the present study. While implicit cognitions have been regarded as trait-like and hard-to-change, findings from a growing number of studies suggest that the IAT can measure a combination of trait and state (subject to changes in response to situation-specific circumstances) characteristics (Dasgupta & Greenwald, 2001; Wiers et al., 2010; Gawsoski & Bodenhausen, 2006). Given previous research indicating that negative affect is strongly tied to addictive processes (Cooper et al., 1995), more research is needed to clarify the exact relationship of various mood states and motives for drinking on implicit alcohol cognitions.

As a final aim, we investigated whether engaging in an IAT would “activate” appetitive desire to drink and thus be associated with higher subjective ratings of alcohol craving. Findings from partial correlations did support this hypothesis. This is consistent with other research showing that implicit attitudes about alcohol use are incrementally valid over explicit measures of alcohol use (Ostafin & Palfai, 2006). However, the association between IAT scores and subject craving was no longer significant after controlling for differences between men and women’s reports of craving, suggesting that gender may play a role in the link between alcohol-approach cognitions and acute urges to drink. Perhaps men are more willing to self-report their desire to drink than women because women perceive greater social sanctions from drinking (Nolen-Hoeksema, 2004). It would be important to measure gender differences in acknowledgment of, or degree of, stigma attached to substance use behavior as they relate to implicit alcohol-cognitions in future studies. Finally, trait temptation (CEP) was also positively related to subjective craving, after controlling for trait restriction and gender, which is consistent with theory and research (Collins et al., 1982; Collins, 1993). Overall, results support prior research that implicit associations about alcohol-related cues are strongly connected in a cognitive or neural “network” and are correlated with desire to drink (Carter & Tiffany, 1999; Tiffany, 1990).

These results have several important implications. First, our findings are consistent with previous research that problem-drinking individuals hold implicit cognitions about alcohol use (Ostafin & Palfai, 2006); which can be used as targets in future cognitive-behavioral interventions. It would be important to uncover whether implicit alcohol cognitions are a consequence or precursor of heavy drinking and drinking restraint in future research so that intervention efforts may be tailored more effectively. Second, our findings indicate that restrained drinkers showed evidence of a strong associative cognitive network between alcohol-related stimuli and motivations to drink, consistent with ironic process theory. This is noteworthy in light of our results showing only a marginally significant association between drinking behavior and IAT scores; suggesting perhaps that trait-like risk factors for drinking are better predictors of implicit attitudes than alcohol consumption. Results also suggest that individuals with stronger approach-alcohol attitudes experience more intense cravings for alcohol “in the moment.” Third, this is the first study to our knowledge that has examined the interaction of state negative affect and drinking restraint on implicit alcohol cognitions. Future studies should assess real-time alcohol use following exposure to an IAT among drinkers high and low on drinking restraint and under various mood conditions to further replicate findings.

There were several limitations. First, findings may not generalize to clinically affected populations with alcohol dependence, as we measured a sample of risky drinkers. Second, because of the cross-sectional nature of our data, causal interpretations about associations between drinking restraint and implicit alcohol cognitions are cautioned. This should be examined longitudinally in future studies. Third, our measure of implicit attitudes was only marginally correlated with alcohol consumption, which is not consistent with prior studies using the same the alcohol-approach paradigm (Ostafin & Palfai, 2003; Palfai & Ostafin, 2006). This may be because our sample consisted primarily of heavy drinkers, thereby

reducing the variability in our measurement of alcohol consumption and restricting the range of response options.

Our results have implications for using cognitive attention disengagement training in CBT treatments for alcohol use disorders. Information learned through assessment of implicit cognitions could be used as feedback in brief interventions to teach problem drinkers about the role of unconscious process that arise in response to alcohol cues as a function of certain dispositional characteristics. Ultimately, such feedback could be used by individuals who are attempting to abstain from drinking to identify triggers that provoke an intense desire to use alcohol.

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Appendix A

<u>Alcohol Stimuli (Pictures)</u>	<u>Water Stimuli (Pictures)</u>
Glass of beer	Glass of water
Bottle of beer	Bottle of water
Pitcher of beer	Pitcher of water
Glass and bottle of beer	Glass and bottle of water
Glass and pitcher of beer	Glass and pitcher of water
Bottle and pitcher of beer	Bottle and pitcher of water
<u>Approach Stimuli (Words)</u>	<u>Avoid Stimuli (Words)</u>
Approach	Avoid
Closer	Escape
Forward	Further
Toward	Leave
Near	Flee
Want	Away
Desire	Repel
Attract	Reject

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Summary of Hierarchical Regression Analyses of the Moderating Effect of Negative Affect on Associations between Drinking Restraint Variables and Implicit Association Task (IAT) Scores ^a

Table 1

Step	Variable	β	SE	p	R ²	ΔR^2	F Δ	(df)
Model 1								
1	IAT order	.18*	.08	.04	.06	.06	4.11	(1, 68)
2	Alcohol consumption	.02	.01	.09	.10	.04	2.92	(2, 67)
3	TRI CBC	.40*	.04	.03	.16	.07	5.08	(3, 66)
4	NA	.04	.04	.93	.17	.01	0.87	(4, 65)
5	CBC $\times$ NA	.05	.04	.32	.18	.01	1.54	(5, 64)
Full Model : $F(5, 64) = 2.85, p = .02$								
Model 2								
1	IAT Order	.18*	.08	.04	.06	.06	4.11	(1, 68)
2	Alcohol consumption	.02	.01	.09	.10	.04	2.92	(2, 67)
3	TRI CEP	.03	.05	.75	.10	.01	2.21	(3, 66)
4	NA	.03	.05	.54	.11	.01	1.65	(4, 65)
5	CEP $\times$ NA	.03	.04	.57	.11	.01	1.34	(5, 64)
Full Model: $F(5, 64) = 1.67, p = .17$								

Note. Alcohol consumption = average number of standard drinks consumed per drinking episode of wine, beer, and liquor in the past 90-days multiplied by the frequency of wine, beer, and liquor consumed over past 90-days; TRI CBC = Temptation and Restraint “Cognitive and Behavioral Concern” subscale; TRI CEP = Temptation and Restraint “Cognitive and Emotional Preoccupation” subscale; NA = changes in negative affect before and after experimental manipulation.

^aData represent z-transformed scores

* $p < .05$