Published in final edited form as:

Psychol Addict Behav. 2009 June ; 23(2): 329–333. doi:10.1037/a0015704.

Alcohol Expectancy Priming and Drinking Behavior: The Role of Compatibility between Prime and Expectancy Content

Ronald S. Friedman,

Department of Psychology, University at Albany;

Denis M. McCarthy,

Department of Psychological Sciences, University of Missouri

Sarah L. Pedersen, and

Department of Psychological Sciences, University of Missouri

Joshua A. Hicks

Department of Psychological Sciences, University of Missouri

Abstract

According to information-processing models of alcohol use, alcohol expectancies constitute representations in long-term memory that may be activated in the presence of drinking-related cues, thereby influencing alcohol consumption. A fundamental implication of this approach is that primed expectancies should affect drinking only for those individuals who possess the specific expectancies primed. To test this notion, in the present study, participants were initially assessed on three distinct domains of positive alcohol expectancies. Approximately one week later, they completed an ad libitum drinking study during which only a single expectancy domain (sociability) was primed in the experimental condition. Consistent with predictions, following exposure to sociability primes, but not control primes, individuals with stronger expectancies that alcohol would enhance sociability uniquely showed increased placebo consumption of nonalcoholic beer. These results, which demonstrate the moderating role of compatibility between the specific content of primes and that of underlying expectancies, offer new, direct support for memory network-based models of drinking behavior.

Keywords

alcohol expectancies; drinking behavior; memory; priming

More than a quarter-century of research has firmly established that alcohol expectancies are robustly associated with the onset and maintenance of alcohol use (Goldman, Darkes, & Del Boca, 1999; Jones, Corbin, & Fromme, 2001; Sher, Wood, Wood, & Raskin, 1996). Research aimed at elucidating this relationship has tended to employ an information-processing

Correspondence concerning this article should be addressed to Ronald S. Friedman, Department of Psychology, University at Albany, 1400 Washington Avenue, Albany, NY, 12222 or to Denis M. McCarthy, 210 McAlester Hall, Columbia, MO, 65211. rfriedman@albany.edu.

Mailing Address: Ronald S. Friedman, Department of Psychology, University at Albany, 1400 Washington Avenue, Albany, NY 12222, Phone: (518)442-4858, rfriedman@albany.edu

Publisher's Disclaimer: The following manuscript is the final accepted manuscript. It has not been subjected to the final copyediting, fact-checking, and proofreading required for formal publication. It is not the definitive, publisher-authenticated version. The American Psychological Association and its Council of Editors disclaim any responsibility or liabilities for errors or omissions of this manuscript version, any version derived from this manuscript by NIH, or other third parties. The published version is available at www.apa.org/journals/adb

approach. Here, alcohol expectancies are conceived of as representations in long-term memory (LTM) that may be activated in the presence of drinking-related cues, increasing the likelihood that they will factor into decisions regarding alcohol consumption (Goldman, 1999; Stacy, 1997). In support of this notion, research has shown that alcohol-related contextual cues influence the accessibility of alcohol expectancies (e.g., Chenier & Goldman, 1992; Krank, Wall, Stewart, Wiers, & Goldman, 2005; Wall, Hinson, McKee, & Goldstein, 2001) as well as memory for alcohol expectancy words (Reich, Goldman, & Noll, 2004). Moreover, the specific expectancy constructs (e.g., arousal vs. sedation) rendered accessible in the face of alcohol cues has been found to empirically discriminate between heavier and lighter drinkers (e.g., Weingardt, Stacy, & Leigh, 1996; Kramer & Goldman, 2003; Reich & Goldman, 2005).

Word association studies of this sort have been essential in supporting the underlying assumptions of the information-processing approach and have prompted the question of whether expectancy activation actually influences alcohol consumption. Findings strongly consistent with this possibility were offered by Roehrich and Goldman (1995). As part of an ostensible “memory study”, participants were exposed to both video primes (alcohol or non-alcohol clips) and word primes of either common positive alcohol expectancies (e.g., “confident”, “funny”, “horny”, “talkative”) or expectancy-irrelevant words (e.g., “hammer”) using a variation of the Stroop (1935) paradigm. Afterward, in what was described as a separate and unrelated “consumer survey”, they measured consumption of nonalcoholic beer that participants were falsely convinced contained alcohol. Results indicated an additive effect of both alcohol and expectancy primes. Findings of expectancy priming were conceptually replicated by Carter, McNair, Corbin, and Black (1998), who also found that negative expectancy primes (e.g., “sick”, “dizzy”) decreased drinking responses, and by Stein, Goldman, and Del Boca (2000), who additionally manipulated mood, thereby ruling out the possibility that expectancy primes facilitated drinking simply by engendering positive affect. Stein et al. (2000) also found that the expectancy-priming effect was most pronounced among heavier drinkers.

These studies suggest that alcohol expectancy representations are primed by expectancy cues, thereby facilitating drinking. However, these studies do not unambiguously support an information-processing account because they intermixed expectancy primes from varied content domains (e.g., sexuality, sociability, tension reduction). A fundamental implication of the information-processing approach is that expectancy activation should only influence behavior in an expectancy-consistent fashion; therefore, specific primes should influence drinking only for those individuals who possess the specific expectancies primed.

The current study was designed to conceptually replicate Roehrich and Goldman’s (1995) seminal study, while testing the specificity of the expectancy priming effect. Approximately one week prior to participation in an experimental ad libitum drinking study, participants were assessed on three distinct domains of positive alcohol expectancies. During the laboratory session, participants were primed with only a single expectancy domain (sociability) in the experimental condition. We predicted that following exposure to sociability primes, but not control primes, individuals with stronger expectancies that alcohol would enhance sociability would uniquely demonstrate increased drinking.

Method

Participants

Participants were 46 undergraduates at the University of Missouri-Columbia, aged 21–26, who responded to a flyer advertising a paid “study of motivation, personality characteristics, and behavior”. Eight participants who either voiced suspicions regarding the nature of the

experiment or the alcohol content of the drinks, or reported that external factors influenced how much they drank (e.g., had a test the next day) were excluded from the analysis. This left a sample of 38 participants (24 female). Participants received \$30 for participation.

Procedure

Study design was based on the procedures of Roehrich and Goldman (1995). Participants were informed they would be involved in several unrelated studies. They were not told that either of the studies involved alcohol. Laboratory space and information (e.g., names of personnel, phone number) used for this study had not been used in previous alcohol studies. Prior to their lab appointment, participants completed online survey questionnaires including three subscales of the 68-item version of the the Alcohol Expectancy Questionnaire (AEQ; Goldman, Greenbaum, & Darkes, 1997): Sexual Enhancement, Social Assertiveness, and Relaxation; the Sociability subscale of the Comprehensive Effects of Alcohol Questionnaire (CEOA; Fromme, Stroot, & Kaplan, 1993); and measures of typical frequency and quantity of alcohol use (days during the past month on which drinking occurred, average number of drinks consumed on those days). Several filler questionnaires (approx. 200 items) related to personality and identity were also included to enhance the plausibility of the cover story.

During the subsequent lab session, participants were first greeted by two experimenters and reminded they would be completing two unrelated tasks, each to be conducted by one of the experimenters. To further bolster the cover story, the experimenters discussed which experiment would be run first, although the priming portion was run first for all participants. The experimenter in charge of this experiment then introduced him/herself to the participant as a cognitive psychology graduate student and explained to the participant that he/she would first complete a Stroop color naming task (which would serve as the vehicle for priming). Participants then completed a practice session to familiarize them with the task. Here, they were sequentially presented via computer with a series of neutral words (e.g., types of automobiles), each appearing with roughly equal frequency in 4 different colors, and were asked to indicate as quickly as possible the color of each word using a labeled keypad. No instructions were provided to attend to word meaning. Afterward, participants randomly assigned to the expectancy prime condition completed a block of Stroop trials containing the word “sociable” and 6 other closely associated trait words (“friendly”, “talkative”, “outgoing”, “humorous”, “energetic”, “extraverted”), whereas those in the control condition completed a block with furniture words (“loveseat”, “bookshelf”, “recliner”, “mantelpiece”, “tabletop”, “footstool”, “bed frame”). A total of 42 trials were included in each block (6 trials/word).

Immediately after completing the Stroop task, participants were told they would be completing a second “product marketing” study. They were escorted to an adjacent office and met with a new experimenter who was purportedly a graduate student in the Department of Marketing. To reinforce the cover story, the first experimenter thanked the participant and left the laboratory. Participants were then told that the study involved evaluating different types of foods and beverages, that they had been assigned to evaluate types of beer and chips, and that they would complete their evaluation of the beer first. To bolster the cover story, bowls of chips were kept in the laboratory in view of the participant. Following Roehrich and Goldman’s (1995) procedure (cf. Marlatt, Demming, & Reid, 1973), pre-poured 12 oz. servings of 3 different brands of non-alcoholic beer were then presented in clear glasses marked A, B, and C. Participants were also given an ostensible marketing survey that asked about their perception of each drink (e.g., its crispness, tastiness, wateriness). They were told to take their time and drink as much as necessary to evaluate each beverage. The experimenter then left the participant alone for 15 minutes. Afterward, participants were probed for suspicion either concerning the connection between the two studies or the alcohol content of the drinks using a “funneled” debriefing procedure (Aronson, Carlsmith, Ellsworth, & Gonzales, 1990). For each participant,

the remaining alcohol was poured into graduated cylinders and measured. The amount consumed (in ml) served as the dependent variable.

Results

Mean scores on all alcohol expectancies, as well as self-reported drinking, and ad-lib alcohol consumption are reported in Table 1. Table 2 reports correlations among these variables. Analyses revealed no main effects of experimental condition on any of these measures. There were also no effects of gender.

The main prediction was a 2-way interaction between Prime (sociability vs. control) and sociability-related alcohol expectancies on amount of ad-lib consumption. This was posited to reflect that sociability primes activate sociability-related alcohol expectancies, selectively promoting drinking among those who specifically hold such expectancies. To test this prediction, we computed two simultaneous multiple regression analyses on amount of consumption, each entering a distinct measure of sociability expectancies as a predictor and including alternative expectancy measures (AEQ Relaxation and Sexual Enhancement) as covariates. The first analysis, using AEQ Social Assertiveness (AEQ-SA), revealed a Prime X AEQ-SA interaction, $b = 58.72$, $t(28) = 2.63$, $p < .03$, $\eta^2 = 0.19$ (see Table 3). As predicted, decomposition of this effect uncovered a trend toward a positive association between AEQ-SA scores and ad-lib consumption in the sociability primed group, $\beta = 0.53$, $t(12) = 2.15$, $p = .053$, but no such association in the control group, $p > .78$. Mirroring these findings, the second analysis, using CEOA Sociability (CEOA-S), revealed a Prime X CEOA-S interaction, $b = 92.62$, $t(27) = 3.27$, $p < .004$, $\eta^2 = 0.22$ (see Table 4), also reflecting a positive association between CEOA-S scores and drinking in the sociability primed group, $\beta = 0.74$, $t(11) = 3.70$, $p < .004$, but not in the control group, $p > .23$. In line with predictions, supplementary analyses revealed no interactions between Prime and non-sociability-related expectancies on amount of consumption in either case. In addition, both interactive effects remained reliable after inclusion of a drinking index (composite of typical frequency and quantity scores; cf. Stein et al., 2000), as a covariate. There were no interactive effects of drinking on ad-lib consumption.

Discussion

According to information processing-based models of alcohol consumption, alcohol outcome expectancies constitute mental representations in LTM that can be primed and activated in the same manner as other types of stored knowledge, enabling them to shape decisions regarding whether to drink. The present study offers among the most direct evidence for this notion to date by showing that primes specific to a particular expectancy domain selectively promote drinking among individuals with expectancy-consistent beliefs. In documenting the moderating role of compatibility between the specific content of contextual primes and that of underlying expectancies, these results also uniquely support the information processing approach by providing relatively compelling evidence for the operation of a memory-based mechanism. Moreover, they are consistent with results of expectancy challenge studies, which have demonstrated that reductions in drinking behavior track with changes in expectancies following expectancy-based interventions (Dunn, Lau, & Cruz, 2000; Wiers, van de Luitgaarden, van den Wildenberg, & Smulders, 2005).

The present results also complement recent studies showing that rudimentary alcohol-related cues (e.g., photos of alcoholic beverages, suboptimally-presented alcohol beverage words) automatically engender expectancy-consistent non-consumptive behavior (Bartholow & Heinz, 2006; Friedman, McCarthy, Forster, & Denzler, 2005; Friedman, McCarthy, Bartholow, & Hicks, 2007). To illustrate, Friedman et al. (2007) found that following exposure to verbal alcohol cues but not non-alcohol cues, participants with stronger expectancies that

alcohol reduces tension, were more willing to interact with a female stranger under relatively stressful circumstances. This effect was specific to alcohol expectancies regarding tension reduction—it was not obtained using alternative expectancies that were less applicable within the experimental context. Friedman et al. (2007) also found that exposure to alcohol cues selectively triggered more hostile responses to a mild provocation among individuals who more strongly endorsed expectancies that alcohol fuels aggression. In light of such findings, the present results take on new weight by suggesting that cognitive links between memory representations of drinking and its expected outcomes are bidirectional: expectancy cues may prompt alcohol consumption, just as alcohol cues prompt expectancy-consistent action.

Despite its assets, the present research leaves a number of unanswered questions in its wake. First, there are a few noteworthy discrepancies between the current findings and those of related prior studies. Unlike studies by Roehrich and Goldman (1995) and Carter et al. (1998), the present study did not reveal a main effect of expectancy priming on consumption. This may stem from the fact that prior manipulations combined expectancy primes from numerous content domains. This presumably increased the accessibility of a range of alcohol expectancies and thereby bolstered the likelihood that the particular array of expectancies held by any given participant would be activated. In contrast, the priming manipulation at hand was designed to specifically facilitate activation of sociability expectancies. As such, individuals with weaker expectancies in this single domain should not have been, and indeed were not, influenced by the primes.

The present results also differ from those of Stein et al. (2000) in that they did not reveal an intensified priming effect among heavier drinkers. Theoretically speaking, there is good reason to predict such an effect: Since alcohol expectancies are more accessible among heavier drinkers (Goldman, 1999; Stacy, 1995) they should be more readily activated by expectancy primes (Rather & Goldman, 1994; Higgins, 1996), thereby facilitating their role in drinking behavior. However, inasmuch as drinking is positively associated with alcohol expectancy endorsement (Table 2), it is also possible that heavier drinkers in Stein et al.'s study were not more affected by the primes because of their drinking history, but because they possessed stronger alcohol expectancies. Since Stein et al. did not measure expectancies, this alternative account can not be ruled out.

An important limitation of the present study is the small sample size, which resulted in the study being underpowered to detect small effects (.14). Power to detect a change in R^2 representing a medium effect size was adequate (.64). The low power of the study prevented us from conducting supplementary analyses testing for moderation of expectancy priming effects by variables such as drinking or gender.

Another unresolved issue concerns the role played by conscious awareness and/or deliberation. These and related findings suggest that drinking behavior may be elicited by expectancies that are primed 'implicitly', that is, in the absence of both alcohol-related contextual cues as well as the deliberate intention to retrieve expectancy contents from LTM (Goldman, 1994). However, it remains unclear as to whether primed alcohol expectancies must nonetheless be brought into conscious awareness when alcohol is ultimately made available in order to influence consumption. Along similar lines, it is currently unknown whether alcohol expectancy primes must be consciously perceived in order to bear upon subsequent drinking. Models of knowledge activation (see Higgins, 1996, for a review) propose that even near-subliminal primes should suffice to increase the accessibility of stored expectancy constructs. If so, this would suggest that even expectancy-related cues that receive comparatively little attention, for instance, the minimally-processed contents of advertisements, may surreptitiously impact the propensity to imbibe.

Another unanswered question pertains to the role of motivation in expectancy priming effects: To what extent are the effects of alcohol expectancy cues on ad libitum drinking moderated not only by the degree to which individuals expect that alcohol consumption will engender expectancy-consistent outcomes, but by the extent to which these anticipated outcomes are deemed subjectively valuable? Future studies could address this issue by utilizing measures that assess expectancy evaluations (e.g., Fromme, Stroot, & Kaplan, 1993) or domain-specific measures of drinking motives (e.g., Cooper, Russell, Skinner, & Windle, 1994) alongside idiographic measures of alcohol expectancies. Studies of this nature stand to enhance our understanding of the interplay between memory processes and engagement in addictive behaviors.

Acknowledgments

The research reported in this article was supported by a grant from the Alcoholic Beverage Medical Research Foundation to Ronald Friedman and Denis McCarthy, and by National Institute on Alcohol Abuse and Alcoholism grant T32 AA13526. We would like to thank Ken Sher for his advice regarding this project.

References

- Aronson, E.; Ellsworth, PC.; Carlsmith, JM.; Gonzales, MH. Methods of research in social psychology. Vol. 2. New York: McGraw-Hill; 1990.
- Bartholow BD, Heinz A. Alcohol and aggression without consumption: Alcohol cues, aggressive thoughts, and hostile perception bias. *Psychological Science* 2006;17:30–37. [PubMed: 16371141]
- Carter JA, McNair LD, Corbin WR, Black DH. Effects of priming positive and negative outcomes on drinking responses. *Experimental and Clinical Psychopharmacology* 1998;6:399–405. [PubMed: 9861554]
- Chenier, G.; Goldman, MS. Implicit priming of an alcohol expectancy network. Paper presented at the 100th Annual Convention of the American Psychological Association; Washington, DC. 1992 Aug.
- Cooper ML, Russell M, Skinner JB, Windle M. Development and validation of a three-dimensional measure of drinking motives. *Psychological Assessment* 1994;4(2):123–132.
- Dunn ME, Lau HC, Cruz IY. Changes in activation of alcohol expectancies in memory in relation to changes in alcohol use after participation in an expectancy challenge program. *Experimental and Clinical Psychopharmacology* 2000;8:566–575. [PubMed: 11127428]
- Friedman RS, McCarthy DM, Bartholow BD, Hicks JA. Interactive effects of alcohol outcome expectancies and suboptimal alcohol cues on non-consumptive behavior. *Experimental and Clinical Psychopharmacology* 2007;15:102–114. [PubMed: 17295589]
- Friedman RS, McCarthy DM, Forster J, Denzler M. Automatic effects of alcohol cues on sexual attraction. *Addiction* 2005;100(5):672–681. [PubMed: 15847625]
- Fromme K, Stroot EA, Kaplan D. Comprehensive effects of alcohol: Development and psychometric assessment of a new expectancy questionnaire. *Psychological Assessment* 1993;5:19–26.
- Goldman MS. The alcohol expectancy concept: Application to assessment, prevention, and treatment of alcohol abuse. *Applied and Preventive Psychology* 1994;3:131–144.
- Goldman MS. Risk for substance abuse: Memory as a common etiological pathway. *Psychological Science* 1999;10(3):196–197.
- Goldman, MS.; Darkes, J.; Del Boca, FK. Expectancy mediation of biopsychosocial risk for alcohol use and alcoholism. In: Irving Kirsch, E., editor. *How expectancies shape experience*. Washington, DC: American Psychological Association; 1999. p. 233–262.
- Goldman MS, Greenbaum PE, Darkes J. A confirmatory test of hierarchical expectancy structure and predictive power: Discriminant validation of the Alcohol Expectancy Questionnaire. *Psychological Assessment* 1997;9:145–157.
- Higgins, ET. Knowledge activation: Accessibility, applicability, and salience. In: Higgins, ET.; Kruglanski, AW., editors. *Social psychology: Handbook of basic principles*. New York: Guilford; 1996. p. 133–168.

- Jones BT, Corbin W, Fromme K. A review of expectancy theory and alcohol consumption. *Addiction* 2001;96:57–72. [PubMed: 11177520]
- Kramer DA, Goldman MS. Using a modified Stroop task to implicitly discern the cognitive organization of alcohol expectancies. *Journal of Abnormal Psychology* 2003;112:171–175. [PubMed: 12653426]
- Krank M, Wall A, Stewart SH, Weirs RW, Goldman MS. Context effects on alcohol cognitions. *Alcoholism: Clinical and Experimental Research* 2005;29:196–206.
- Marlatt GA, Demming B, Reid JB. Loss of control drinking in alcoholics: An experimental analogue. *Journal of Abnormal Psychology* 1973;81:233–241. [PubMed: 4710045]
- Rather BC, Goldman MS. Drinking-related differences in the memory organization of alcohol expectancies. *Experimental and Clinical Psychopharmacology* 1994;2:167–183.
- Reich RR, Goldman MS. Exploring the alcohol expectancy memory network: The utility of free associates. *Psychology of Addictive Behaviors* 2005;19:317–325. [PubMed: 16187812]
- Reich RR, Goldman MS, Noll JA. Using the false memory paradigm to test two key elements of alcohol expectancy theory. *Experimental and Clinical Psychopharmacology* 2004;12:102–110. [PubMed: 15122954]
- Roehrich L, Goldman MS. Implicit priming of alcohol expectancy memory processes and subsequent drinking behavior. *Experimental & Clinical Psychopharmacology* 1995;3:402–410.
- Sher KJ, Wood MD, Wood PK, Raskin G. Alcohol outcome expectancies and alcohol use: A latent variable cross-lagged panel study. *Journal of Abnormal Psychology* 1996;105:561–574. [PubMed: 8952189]
- Stacy AW. Memory association and ambiguous cues in models of alcohol and marijuana use. *Experimental and Clinical Psychopharmacology* 1995;3:183–194.
- Stacy AW. Memory activation and expectancy as prospective predictors of alcohol and marijuana use. *Journal of Abnormal Psychology* 1997;106:61–73. [PubMed: 9103718]
- Stein KD, Goldman MS, Del Boca FK. The influence of alcohol expectancy priming and mood manipulation on subsequent alcohol consumption. *Journal of Abnormal Psychology* 2000;109:106–115. [PubMed: 10740941]
- Stroop JR. Studies of interference in serial verbal reactions. *Journal of Experimental Psychology* 1935;18:643–662.
- Wall AM, Hinson RE, McKee SA, Goldstein A. Examining alcohol outcome expectancies in laboratory and naturalistic bar settings: A within-subject experimental analysis. *Psychology of Addictive Behaviors* 2001;15:219–226. [PubMed: 11563799]
- Weingardt KR, Stacy AW, Leigh BC. Automatic activation of alcohol concepts in response to positive outcomes of alcohol use. *Alcoholism: Clinical and Experimental Research* 1996;20:25–30.
- Wiers RW, van de Luitgaarden J, van den Wildenberg E, Smulders FTY. Challenging implicit and explicit alcohol-related cognitions in young heavy drinkers. *Addiction* 2005;100:806–819. [PubMed: 15918811]

Table 1

Descriptive Statistics Indexed by Experimental Condition

Measure	Prime			
	Expectancy (<i>n</i> = 18)		Control (<i>n</i> = 20)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
AEQ-Relaxation	3.42	0.82	3.33	0.98
AEQ-Sexual Enhancement	2.79	1.11	2.65	1.03
AEQ-Social Assertiveness	3.70	1.01	3.59	0.95
CEOA-Sociability	3.14	0.72	3.32	0.50
Quantity-Frequency	40.53	88.28	39.25	44.01
Amount of Consumption (ml)	175.15	165.50	167.20	135.53

Note. AEQ = Alcohol Expectancy Questionnaire; CEOA = Comprehensive Effects of Alcohol Questionnaire. Values for the AEQ scale means can range from 1–5, while values for the CEOA can range from 1–4. Quantity-Frequency is a composite variable of past month frequency use X drinks per occasion (observed range 0 – 350).

Table 2

Correlations among Measured Variables

	1	2	3	4	5	6
1 AEQ-Relaxation	(.81)					
2 AEQ-Sexual Enhancement	0.58**	(.85)				
3 AEQ-Social Assertiveness	0.57**	0.60**	(.91)			
4 CEOA-Sociability	0.38*	0.51**	0.74**	(.89)		
5 Quantity-Frequency	0.34*	0.27	0.35*	0.40*	(--)	
6 Amount of Consumption (ml)	0.10	-0.08	0.20	0.36*	0.53**	(--)

* p < .05;
** p < .01

Note. AEQ = Alcohol Expectancy Questionnaire; CEOA = Comprehensive Effects of Alcohol Questionnaire; Cronbach's alphas (α) entered along diagonal.

Table 3

Regression Analysis of Prime X AEQ-SA Interaction

Measure	<i>b</i>	<i>SE</i>	<i>t value</i>	<i>p</i>
Prime	−188.23	88.10	0.40	0.69
AEQ-Relaxation	73.26	31.53	2.32	0.03
AEQ-Sexual Enhancement	−76.66	25.41	−3.02	0.005
AEQ-Social Assertiveness	21.21	27.97	0.76	0.45
Prime X AEQ-Social Assertiveness	58.72	22.37	2.63	.02

Note. R^2 change for interaction step = .22; $F(5, 28) = 3.18$, $p < .03$; AEQ = Alcohol Expectancy Questionnaire

Table 4

Regression Analysis of Prime X CEOA-S Interaction

Measure	<i>b</i>	<i>SE</i>	<i>t value</i>	<i>p</i>
Prime	−286.81	92.38	−3.10	0.004
AEQ-Relaxation	70.65	22.04	3.20	0.003
AEQ-Sexual Enhancement	−75.45	19.02	−3.97	0.0005
CEOA-S	−3.18	31.21	−0.10	0.9196
Prime X CEOA-S	92.62	28.31	3.27	0.003

Note. R^2 change for interaction step = .16; $F(5, 27) = 3.18, p < .005$; AEQ = Alcohol Expectancy Questionnaire; CEOA = Comprehensive Effects of Alcohol Questionnaire