Examinations of gender differences in alcohol expectancies among college drinkers typically have used self-report measures to assess single expectancy dimensions and often have been confounded by drinking level. This study examined gender differences in alcohol expectancies using 2 assessment methods. College students (N = 88) completed self-report questionnaires, including expectancy likelihood and subjective evaluation endorsements of expectancies, and a computerized expectancy accessibility task. Expectancy accessibility and endorsement were modestly correlated, with higher alcohol consumption and female gender linked to greater accessibility and endorsement of social enhancement expectancies. Gender moderated the relation between consumption and sociability expectancy accessibility; among men, heavier drinking was associated with more rapid activation of expectancies. Findings suggest complexity in associations among these variables and underscore the need to capture the multidimensionality of the expectancy construct and its relationship to alcohol use.

Although heavy drinking is prevalent in both men and women on U.S. college campuses (O’Malley & Johnston, 2002; Presley, Meilman, Cashin, & Lyerla, 1996; Wechsler, Lee, Kuo, & Lee, 2000), etiological processes underlying drinking in this population may differ for the two genders (e.g., Mooney, Fromme, Kivlahan, & Marlatt, 1987; Read, Wood, Davidoff, McLacken, & Campbell, 2002; Walitzer & Sher, 1996; A. Williams & Clark, 1998). Among the processes that may be affected differentially by gender are alcohol expectancies—cognitions about alcohol and its effects (Edgar & Knight, 1994; Mooney et al., 1987; Rather, Goldman, Roehrich, & Brannick, 1992)—which are among the strongest predictors of college drinking behavior (C. N. Johnson & Fromme, 1994; Wood, Sher, & Strathman, 1996).

The desire to regulate affect is among the most central of motivations for alcohol use, and many alcohol expectancy types commonly are categorized along affective dimensions (Goldman, Del Boca, & Darkes, 1999; Lang, Patrick, & Stritzke, 1999). Expectations that alcohol will stimulate or enhance a positive affective experience are known as positive reinforcement (e.g., social facilitation or enhancement) expectancies. Negative reinforcement (e.g., tension reduction) expectancies anticipate that alcohol consumption will decrease an aversive affective stimulus such as stress or anxiety. Expectancies that are affectively relevant may have particular importance for the onset and maintenance of drinking behavior, though mechanisms will differ depending on whether alcohol is expected to enhance positive affect or to reduce negative affect.

Gender differences in alcohol expectancies have been noted, yet the precise nature of these differences has proven difficult to isolate. Some studies show greater positive reinforcement expectancies in women (Edgar & Knight, 1994; Lundahl, Davis, Adesso, Berger, & Milligan, 1992; Lundahl, Davis, Adesso, & Lukas, 1997), whereas other studies show men to report greater positive reinforcement expectancies (Brown, Goldman, Inn, & Anderson, 1980). Findings have been similarly mixed for negative reinforcement expectancies: Some studies have found men to report greater tension reduction expectancies (e.g., Brown et al.,
1980; Rohsenow, 1983), whereas other studies have failed to demonstrate such a relationship (Mooney et al., 1987; O’Hare, 1990).

In addition to their hypothesized etiologic relevance, gender differences in alcohol expectancies have potentially important implications for preventive interventions. Expectancy-based interventions such as expectancy challenge (e.g., an intervention designed to influence alcohol use by modifying beliefs about alcohol) have shown some initial promise in altering alcohol expectancies and in decreasing alcohol consumption in college drinkers (Darkes & Goldman, 1993, 1998). However, recent evidence indicates that these interventions may be more effective for men than for women (Corbin, McNair, & Carter, 2001; Dunn, Lau, & Cruz, 2000; Wiers et al., 2003). These findings, coupled with the somewhat discrepant etiological literature on gender differences in expectancies, suggest a need for closer examination of expectancies in understanding drinking among female college students.

Disentangling Expectancies and Alcohol Consumption

Examinations of gender differences in alcohol expectancies commonly are confounded by drinking level (Wilson, 1988). Heavy drinkers tend to endorse positive (e.g., Brown et al., 1980; Mooney et al., 1987) and negative (Hittner, 1995; Rohsenow, 1983) reinforcement expectancies more than lighter drinkers. Though men tend to drink more than their female counterparts, because men generally are larger in size, metabolize alcohol more rapidly, and have a greater volume of distribution for alcohol (Lo, 1996; Ray & Ksir, 1996), they may achieve similar blood alcohol levels despite consuming larger amounts of alcohol. As studies of gender and expectancies typically have not controlled for alcohol quantity, it is difficult to determine whether gender differences in expectancies, when detected, simply reflect differences in alcohol consumption (see Mulligan-Rauch & Bryant, 2000; Wilson, 1988). Research examining the independent and interactive contributions of gender and alcohol consumption on alcohol expectancies is needed.

Measuring and Evaluating Expectancies

Measurement approaches also may affect the identification of potentially important gender differences in alcohol expectancies. Historically, the most widely used approach to expectancy measurement has been self-report (e.g., Brown et al., 1980; Fromme, Stroot, & Kaplan, 1993; Kushner, Sher, Wood, & Wood, 1994; Leigh & Stacy, 1993; Rohsenow, 1983). These measures require respondents to endorse the likelihood of experiencing alcohol’s effects and ostensibly reflect various dimensions of alcohol expectancies. Other measures and studies have augmented these likelihood ratings with subjective self-report evaluations of desirability and immediacy of experiencing alcohol’s effects (e.g., Fromme et al., 1993; Wood et al., 1996).

Problems inherent in relying solely on self-report methods to evaluate cognitive processes have been noted (cf. Nisbett & Wilson, 1977). It has been suggested that this approach alone may not accurately and comprehensively capture the domain of alcohol expectancies or the implicit manner in which beliefs may influence alcohol use (Goldman et al., 1999). These assertions are bolstered by findings demonstrating unique and interactive relations for different dimensions of expectancies and alcohol use (Palfai & Wood, 2001; Stacy, Leigh, & Weingardt, 1994). Increasingly, researchers have sought out alternative methodologies that will allow for a more comprehensive evaluation of a range of expectancy dimensions. Derived largely from cognitive psychology, such methodologies include semantic priming, incidental recall, self-generated expectancies, and Stroop tasks (Stetter, Ackermann, Bizer, Straube, & Mann, 1995; J. M. G. Williams, Mathews, & MacLeod, 1996; Wood et al., 1996).

One dimension that has been suggested to be important to understanding how expectancy processes may influence drinking behavior is that of accessibility, defined as how readily available expectancies are in memory (Leigh, 1989; Leigh & Stacy, 1994; Palfai, Monti, Colby, & Rohsenow, 1997). Derived from the social cognition literature (see Fazio, 2001; Fazio & Olson, 2003), methods for assessing expectancy accessibility have built on those used for research on attitude activation and rely on reaction time (RT) in response to a target “attitude object” to index the importance or value of the target object to the individual. According to Fazio and colleagues (Fazio, 1995, 2001; Fazio, Sanbonmatsu, Powell, & Kardes, 1986), such RT paradigms index the strength of association between beliefs and behaviors; more accessible attitudes are those most likely to influence behaviors. Unlike self-report approaches, automatic RT tasks do not require deliberate or explicit evaluation or assessment. Indeed, the participant is unaware that his or her RT is indexing the strength of that belief.

Data from Fazio and others (Bassili, 1995, 1996; Fazio, 2000; Fazio, Powell, & Williams, 1989; Fazio & Williams, 1986) suggest that those cognitions that are most accessible are those that serve to motivate behavior. This may be illustrated with respect to alcohol expectancies and alcohol consumption. Specifically, an individual might maintain particular beliefs about the effects of alcohol (i.e., expectancies), but if those beliefs are not readily accessible, then they will not influence drinking behavior. As such, the accessibility of alcohol-relevant attitudes such as alcohol expectancies may be critical to understanding alcohol use behaviors.

To assess the accessibility of alcohol-relevant cognitions, Palfai and colleagues (Palfai et al., 1997) developed a computerized alcohol expectancy accessibility task. In this task, participants respond “yes” or “no” to a series of expectancy word stimuli that are presented on a computer screen in accordance with whether they feel that the word applies to them. This task has been used to evaluate the accessibility of both alcohol and smoking expectancies in several published studies (cf. Palfai, 2002; Palfai, Monti, Otafin, & Hutchison, 2000; Palfai et al., 1997).

The issue of expectancy accessibility may have particular importance for understanding the relationship between gen-
nder and expectancies. It has been suggested that gender differences in expectancies may be based on the salience of expected outcomes (P. B. Johnson & Glassman, 1999; Leigh & Stacy, 1991, 1994; Mulligan-Rauch & Bryant, 2000). As more salient outcomes ostensibly are more easily accessible in memory, it may be that evaluation of the accessibility dimension of the expectancy construct will shed new light on what is currently known about the expectancies of men and women and how they may relate to alcohol use behaviors.

In the present study, we sought to address some of the existing gaps in the literature by examining the role of gender across positive and negative reinforcement expectancies and by comparing methods that appear to tap different dimensions of the expectancy process. Importantly, we sought to understand these associations while simultaneously considering alcohol consumption, assessing the unique and interactive effects of gender and alcohol involvement on the accessibility of positive and negative reinforcement alcohol expectancies in a sample of regularly drinking college students.

**Method**

**Participants**

Participants (N = 88; 46 women) were regularly drinking college students at a midsize public university in the northeastern United States. Participants were predominantly White (94.3%; n = 83: 45 women, 38 men). Approximately 41% (n = 36: 24 women, 12 men) were freshmen, 16% (n = 14: 6 women, 8 men) were sophomores, 26% (n = 23: 7 women, 16 men) were juniors, and 17% (n = 15: 9 women, 6 men) were seniors. Average age was just under 20 years (M = 19.8, SD = 1.3; for women, M = 19.5, SD = 1.2; for men, M = 20.1, SD = 1.36). Participant ages ranged from 18 to 23 years. The majority of participants lived independently (i.e., away from their families), either in a campus-based residence (50%; n = 44: 26 women, 18 men) or in a house or an apartment (not with family) off campus (38.6%; n = 34: 15 women, 9 men).

**Procedure**

Participants were recruited through in-class announcements made in introductory and upper level psychology courses for a study purportedly on college students’ health attitudes. Those who indicated an interest in study participation (via in-class sign-up sheets) were telephoned and screened to determine study eligibility. To be eligible, students had to be between the ages of 18 and 24 and to have consumed alcohol at least monthly over the 3 months prior to screening. Upon completion of the telephone screen, eligible participants were scheduled for an experimental session.

Experimental sessions were conducted on weekdays between 10 a.m. and 7 p.m. After providing informed consent, participants completed self-report measures. Following this, the computerized expectancy accessibility task (EA task) was conducted. Experimental sessions lasted approximately 1 hr. Upon completion of the session, participants were debriefed and were paid $25 for their participation.

**Measures**

The assessment battery consisted of both paper-and-pencil self-report measures and a computerized RT task designed to assess expectancy accessibility (each described below). To maintain the perception that the study was focused on a variety of health behaviors (e.g., exercise, nutrition, cancer prevention) and was not specific to drinking or alcohol expectancies, expectancy and drinking self-report measures were embedded within a battery of self-report measures on health behaviors.

**Expectancy self-report.** The 38-item Comprehensive Effects of Alcohol Questionnaire (CEOQ; Fromme et al., 1993) assessed the expected effects of alcohol use and the subjective evaluation of these effects. Individuals rated the extent to which they agreed with each item (e.g., “If I were under the influence of alcohol, I would be . . .”) on a 4-point Likert-type scale (1 = disagree, 4 = agree) and made subjective evaluations of each item on a 5-point Likert-type scale (1 = bad, 5 = good). This measure has demonstrated adequate internal consistency, temporal stability, and construct validity (Fromme & D’Amico, 2000; Fromme et al., 1993). In this study, we used the Social Enhancement (eight items) and Tension Reduction (three items) subscales of this measure, which captured the positive and negative reinforcement expectancies that were of conceptual interest. Items from these subscales are presented in Table 1. Respective coefficient alphas for the Social Enhancement and Tension Reduction subscales were .88 and .65 (endorsement subscales) and .87 and .67 (subjective evaluation) in this sample.

**EA task.** Expectancy accessibility was assessed with a task designed by Fazio et al. (1986) and adapted by Palfai et al. (1997). This method uses RTs to expectancy words as a measure of the accessibility in the participants’ memory of each expectancy item. This consisted of a sentence stem completion task in which participants responded to a series of verbal stimuli presented in random order on a computer screen. Verbal stimuli were words derived from Fromme et al.’s (1993) expectancy measure. Each expectancy word was preceded by the prompt, “When I’m under the influence of alcohol . . . .” This prompt stayed on the screen for 2 s, followed by a 1-s interval and then the target expectancy (e.g., “it is easier to talk to people”). Participants clicked either “yes” or “no” with the computer mouse in accordance with whether they felt that description applied to them when they are under the influence of alcohol. Participants were instructed to respond as quickly as possible without compromising response accuracy. Consistent with Palfai et al. (1997, 2000), an equal number of personality trait items (matched on syllabic content) also were included in the task. Response latency to these personality items was used solely to control for individual differences in RT. Response latency to “yes” endorsement of expectancy items (controlling analytically for RT to personality items) was used as a measure of expectancy accessibility (Fazio et al., 1986; Palfai, 2002; Palfai et al., 1997). Quicker responses represented greater accessibility. From this task, we also derived the number of expectancy accessibility items that were endorsed. Personality words were used to provide an internal control for speed of responding.

**Alcohol use.** Prior to administration of questionnaires, the term standard drink was operationalized (1 oz of hard liquor, 4 oz of wine, or 12 oz of beer). Students were asked to think in these measurement terms when responding to questions about alcohol consumption and to query the research assistant with any questions. Alcohol quantity was assessed with a single item: “In the past year, when you were drinking alcohol, how many drinks did you usually have on any one occasion?” Response options for this item ranged from 1 (less than one can of beer, glass of wine, wine
cooler, and/or drink of liquor) to 9 (nine or more cans of beer, glasses of wine, wine coolers, and/or drinks of liquor).

Analytic Plan

Descriptive statistics. Descriptive statistics were conducted to describe past year drinking patterns in this sample and to examine univariate distributions of study variables. Bivariate correlations were calculated to determine degree of association among various dimensions of expectancies and alcohol use. These associations are presented in Table 2.

Expectancy accessibility. Two sets of hierarchical multiple regression analyses were conducted to examine the effects of (a) alcohol consumption, (b) gender (female gender coded as higher), and (c) the Consumption × Gender interaction on expectancy accessibility. The accessibility of positive reinforcement (RT for social enhancement) expectancies was the dependent variable in the first set of analyses, and the accessibility of negative reinforcement (RT for tension reduction) expectancies was the dependent variable in the second set. All regression analyses with accessibility as the dependent variable controlled for RT to personality items in the first step. Prior to creating the interaction term, means for each independent variable were centered to reduce collinearity (Aiken & West, 1991). We examined associations between gender, alcohol consumption, and total number of yes responses (personality and expectancy items). Neither gender nor alcohol consumption was associated with number of yes responses. Thus, we did not control for response set (i.e., general tendency to respond either “yes” or “no”) in subsequent analyses.

Expectancy endorsement. To examine relations among gender, alcohol consumption, and expectancy endorsement, we conducted the same regression analyses as for expectancy accessibility, but with positive (social enhancement) and negative (tension reduction) expectancy endorsement (SOC_END and TR_END) as the dependent variables in the first set of analyses (SOC_EA and TR_EA) as the dependent variables in the second set of analyses (SOC_END and TR_END) as the dependent variables in the second set of analyses.

Table 1
Expectancy Constructs and Measurement Approaches

<table>
<thead>
<tr>
<th>Expectancy type</th>
<th>Items</th>
<th>Expectancy construct and measurement approach (variable label)</th>
</tr>
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<tr>
<td>Positive</td>
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<tr>
<td>reinforcement</td>
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</tr>
<tr>
<td>Social</td>
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<td></td>
</tr>
<tr>
<td>enhancement</td>
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<td></td>
</tr>
<tr>
<td>reinforcement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>reduction</td>
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Table 2
Pearson Correlations for Gender, Accessibility and Endorsement of Alcohol Expectancies, and Alcohol Consumption

<table>
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<th>4</th>
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<th>6</th>
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<td>.02</td>
<td>.22*</td>
<td>.09</td>
<td>.04</td>
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<td>.10</td>
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<td>.10</td>
<td>.29*</td>
<td>.12</td>
<td>.25*</td>
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<tr>
<td>TR_EA</td>
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<td></td>
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<td>.28**</td>
<td>.31***</td>
<td>.36**</td>
<td>.36**</td>
<td></td>
</tr>
<tr>
<td>SOC_END</td>
<td></td>
<td></td>
<td></td>
<td>.27*</td>
<td>.49***</td>
<td>.29**</td>
<td>.29**</td>
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</tr>
<tr>
<td>TR_END</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.15</td>
<td>.39***</td>
<td>.15</td>
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<tr>
<td>SOC_EVAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.70***</td>
<td>.37***</td>
<td></td>
</tr>
<tr>
<td>Consumption</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. SOC_EA = enhancement expectancy accessibility; TR_EA = tension reduction expectancy accessibility; SOC_END = endorsement of enhancement expectancies; TR_END = endorsement of tension reduction expectancies; SOC_EVAL = self-reported subjective evaluation of enhancement expectancies; TR_EVAL = self-reported subjective evaluation of tension reduction expectancies.

*p < .05. **p < .01. ***p < .001.
from the CEOA questionnaire), respectively, as the dependent variables. We also conducted a set of regression analyses with the self-report subjective evaluations of social enhancement and tension reduction expectancies as the dependent variables to determine how the self-report evaluation of the importance of the anticipated effects of alcohol compared with our RT assessment represented by the EA task.

Results

Descriptive Statistics

Alcohol use. All participants reported drinking at least once monthly for the past 3 months, and 90% (n = 79) reported drinking at least monthly for the past year. The modal number of drinking occasions was 1–2 times per week (31%, n = 27). Twenty-three percent (n = 20: 12 men, 8 women) reported drinking at least 3 days a week, and approximately 70% (n = 61: 24 men, 37 women) reported a drinking pattern that would be conceptualized as “heavy episodic” drinking (5 or more drinks on a “usual” drinking occasion for men, 4 or more for women; Wechsler et al., 2000).

Bivariate associations. Female gender was shown to be associated with more rapid accessing (r = −.23, p < .05) and greater endorsement of enhancement expectancies (r = .22, p < .05). Accessibility of both social enhancement (r = −.25, p < .05) and tension reduction (r = −.35, p < .001) expectancies, as assessed by our computerized task, was significantly associated with self-reported alcohol quantity. Endorsement of social enhancement (r = .29, p < .01) but not tension reduction expectancies was significantly associated with self-reported alcohol consumption. All correlations among expectancy dimensions and alcohol consumption are presented in Table 2.

Patterns of responding to EA task. The average RT for social enhancement expectancies was 1.94 s (SD = 0.54) and for tension reduction expectancies was 2.40 s (SD = 1.05). In this sample, the average number of social enhancement expectancies endorsed (i.e., by a response of “yes”) on the EA task was 7.4 (SD = 1.2), and the average number of tension reduction expectancies endorsed was 2.4 (SD = 0.9). Participants differed significantly by gender with respect to number of specific types of expectancies endorsed on the computerized task. Women endorsed more social enhancement expectancies (M = 7.63, SD = 0.61) than did men (M = 7.07, SD = 1.52), t(86) = −2.30, p < .05. No gender differences were observed for number of tension reduction expectancies endorsed. In bivariate correlations, the number of sociability expectancies endorsed on the computerized EA task was significantly associated with accessibility of these expectancies (r = −.42, p < .001). Similarly, the number of tension reduction expectancies endorsed was significantly associated with accessibility of tension reduction expectancies (r = −.25, p < .05).

Regression Analyses: Gender, Alcohol Consumption, and Expectancy Accessibility

Social enhancement expectancies. Results of the first set of regression analyses with social enhancement expectation accessibility (SOC_EA) as the dependent variable are presented in Table 3. In the first step we controlled for individual differences in RT by entering RTs to the personality items. In the second step, we observed a significant main effect for average weekly quantity (β = −.25, p < .01) and a main effect for gender that approached significance (β = −.17, p = .06), such that both heavier alcohol consumption and female gender were associated with more rapid accessing of social enhancement expectancies. In the third step, the addition of the Quantity × Gender term revealed an interaction that approached significance (β = .17, p = .06). Because a primary, a priori objective of this study was to delineate alcohol consumption effects on ex-

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>Adj. R²</th>
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<td>Social enhancement expectancies</td>
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<td>−2.21*</td>
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<td>Gender</td>
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<td>0.10</td>
<td>−.17</td>
<td>−1.95†</td>
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<tr>
<td>Quantity × Gender</td>
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<td>0.05</td>
<td>.17</td>
<td>1.88†</td>
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<td>Tension reduction expectancies</td>
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<td>Step 1: RT personality items</td>
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<td>.48</td>
<td>4.98***</td>
<td>.22</td>
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<tr>
<td>Step 2: RT personality items</td>
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<td>Alcohol quantity</td>
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<td>−.32</td>
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<td>.05</td>
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<td>.32</td>
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<td>Step 3: RT personality items</td>
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<td>0.20</td>
<td>.47</td>
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<td>Alcohol quantity</td>
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<td>Quantity × Gender</td>
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<td>0.10</td>
<td>−.12</td>
<td>−1.29</td>
<td>.33</td>
</tr>
</tbody>
</table>

Note. Degrees of freedom for t values are (1, 86). Adj. = adjusted; RT = response time. † p < .07. * p < .05. ** p < .01. *** p < .001.
pectancies as a function of gender, we explored this interaction separately by gender. This analysis revealed that the relationship between alcohol quantity and SOC_EA was strong and significant for men (β = −.47, p < .001) but not for women.

Tension reduction expectancies. Results of the second set of analyses with tension reduction expectancies as the dependent variable are presented in the lower half of Table 3. Controlling for RT, the second step showed a significant main effect for alcohol quantity (β = −.32, p < .001); greater consumption was associated with more rapid tension reduction expectancy accessibility. No significant main effect for gender was observed in this step. In the third step, the Quantity × Gender interaction was not significant.

Regression Results: Gender, Alcohol Consumption, and Expectancy Endorsement

Social enhancement expectancies: Likelihood endorsement. On the Social Enhancement subscale of the self-report expectancy measure, average score was 27.7 (SD = 4.7). As presented in Table 4, results of the first set of analyses with self-report endorsement of social enhancement expectancies as the dependent variable (SOC_END) revealed a significant main effect for average alcohol quantity (β = .33, p < .01) in the first step, with heavier alcohol consumption being significantly associated with greater endorsement of social enhancement expectancies. Gender also demonstrated a significant association with greater endorsement of social enhancement expectancies. Gender also demonstrated a significant association with greater endorsement of social enhancement expectancies. There was a significant Quantity × Gender interaction in the second step.

Tension reduction expectancies: Likelihood endorsement. Average score on the Tension Reduction subscale was 8.5 (SD = 2.0). Results of the analyses with self-report endorsement of tension reduction expectancies (TR_END) as the dependent variable revealed no significant main effects for alcohol consumption or for gender and no significant interaction in the second step (see Table 4).

Social enhancement expectancies: Subjective evaluation endorsement. Results of regression analyses with subjective evaluation of the importance of social enhancement expectancies (SOC_EVAL) as the dependent variable (see Table 5) revealed a significant main effect for average weekly quantity (β = .39, p < .001) in the first step, with heavier alcohol consumption being significantly associated with greater value placed on social enhancement expectancies. No main effect for gender was observed in this step. However, in the second step, the Quantity × Gender interaction term was significantly associated with SOC_EVAL (β = −.22, p = .05). Probes of this interaction were consistent with the earlier interaction effect for social enhancement accessibility and showed a strong and significant association between alcohol quantity and endorsement of the importance of social enhancement expectancies for men (β = .54, p < .001) and a nonsignificant association among women.¹

°° p < .01.

Table 4
Effects of Alcohol Consumption and Gender on Expectancy Endorsement

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>t</th>
<th>Adj. R²</th>
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<td>.16</td>
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<tr>
<td>Gender</td>
<td>2.54</td>
<td>0.940</td>
<td>.27</td>
<td>2.70***</td>
<td></td>
</tr>
<tr>
<td>Step 2: Alcohol quantity</td>
<td>0.754</td>
<td>0.256</td>
<td>.31</td>
<td>2.95***</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>2.52</td>
<td>0.944</td>
<td>.27</td>
<td>2.67***</td>
<td></td>
</tr>
<tr>
<td>Quantity × Gender</td>
<td>−0.30</td>
<td>0.505</td>
<td>−.06</td>
<td>−0.61</td>
<td>.17</td>
</tr>
<tr>
<td>Tension reduction expectancies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1: Alcohol quantity</td>
<td>−0.160</td>
<td>0.109</td>
<td>−.16</td>
<td>−1.48</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>−0.350</td>
<td>0.417</td>
<td>−.09</td>
<td>−0.84</td>
<td>.03</td>
</tr>
<tr>
<td>Step 2: Alcohol quantity</td>
<td>−0.130</td>
<td>0.113</td>
<td>−.13</td>
<td>−1.16</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>−0.34</td>
<td>0.418</td>
<td>−.09</td>
<td>−0.81</td>
<td></td>
</tr>
<tr>
<td>Quantity × Gender</td>
<td>0.208</td>
<td>0.223</td>
<td>.10</td>
<td>0.93</td>
<td>.04</td>
</tr>
</tbody>
</table>

Note. Degrees of freedom for t values are (1, 86). Adj. = adjusted.

¹ One reviewer noted that because minimal variability was observed in social enhancement expectancy endorsement among women, and endorsement and response latency were correlated, the interaction effects that we observed in our regression analyses may be due to a ceiling effect for women. However, the bivariate correlation between social enhancement expectancy endorsement and accessibility was −.43 for men (for RT, SD = 0.52; for endorsement, SD = 1.5) and −.41 for women (for RT, SD = 0.54; for endorsement, SD = 0.61). This similar magnitude in correlations suggests that the limited variability in women’s responses did not result in an artifactual reduction in the observed correlations. Therefore, there is reason to believe that our findings are not entirely because of limited variability in the female participants’ responses.
that recruiting only regular drinkers resulted in a strong plain the absence of this association. Another possibility is consumption and gender. Low statistical power might ex-

weak and nonsignificant in women. The relation between consumption and SOC_EA was with more rapid accessing of social enhancement expectan-

tances between heavier and lighter drinkers. In addition to this gender difference is not attributable solely to differ-

ences among positive and negative reinforcement expect-

ancies and alcohol use across measurement approaches. We also observed some variability in expectancy–use relations as a function of gender.

Alcohol Consumption, Gender, and Expectancy Accessibility

We found alcohol consumption to be associated with accessibility of two domains of positive expectancies: social enhancement and tension reduction expectancies. This finding is consistent with the work of Dunn et al. (Dunn & Goldman, 1998, 2000; Dunn & Yniguez, 1999), who, using multidimensional scaling methods, found heavier drinkers to show greater activation of positive alcohol expectancies than lighter drinkers.

In regression analyses, female gender was linked to more rapid accessing of social enhancement expectancies, even after controlling for typical alcohol quantity, suggesting that this gender difference is not attributable solely to differences between heavier and lighter drinkers. In addition to the direct association between gender and EA, we also found some evidence (represented by an interaction approach-

ing significance, \( p = .06 \)) for a moderating effect of gender on the association between alcohol quantity and SOC_EA; among men, heavier drinking was associated with more rapid accessing of social enhancement expectancies. The relation between consumption and SOC_EA was weak and nonsignificant in women.

No significant association was found between alcohol consumption and gender. Low statistical power might ex-

plain the absence of this association. Another possibility is that recruiting only regular drinkers resulted in a strong representation of heavier drinking women. Indeed, approximately 80% of our female participants reported average drinking patterns consistent with heavy episodic drinking (compared with 57% of men). Though such a strong represen-
tation of heavy drinking women may suggest limited generalizability of our findings to lighter drinking women, our data do have direct relevance for female students whose drinking is likely to be targeted in a preventive intervention (i.e., heavy drinkers).

Alcohol Consumption, Gender, and Expectancy Endorsement

An abundant literature on self-reported alcohol expectan-
tencies has shown quantity of alcohol consumption to be associated with the endorsement of positive alcohol expectan-
tencies (Christiansen, Vik, & Jarchow, 2002; Sher, Wood, Wood, & Raskin, 1996; Wiers, van Woerden, Smulders, & de Jong, 2002). In our study, heavier drinking was associated with greater endorsement of self-reported social enhancement expectancies but not with self-reported tension reduction expectancies. This unexpected finding may be an artifact of lower overall levels of endorsement for tension reduction expectancies, the modest internal reliability of the Tension Reduction subscale of the Fromme et al. (1993) measure, our (single-item) measure of alcohol quantity, or unique characteristics of our sample.

Across measurement approaches, a convergence of find-
ings supported the salience of social enhancement expect-
ancies for women. Consistent with our findings on social enhancement expectancy accessibility, a significant gender effect also was observed for self-report endorsement of social enhancement expectancies. Gender also was related to the number of social enhancement expectancies endorsed on the EA task. These gender effects were observed above and beyond consumption levels, suggesting that women’s beliefs about alcohol may be less qualified by personal drinking experience and thus potentially more intractable than those of men.

### Table 5

<table>
<thead>
<tr>
<th>Predictor</th>
<th>( B )</th>
<th>( SE )</th>
<th>( \beta )</th>
<th>( t )</th>
<th>Adj. ( R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social enhancement expectancies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1: Alcohol quantity</td>
<td>1.23</td>
<td>0.34</td>
<td>.39</td>
<td>3.66***</td>
<td>.13</td>
</tr>
<tr>
<td>Gender</td>
<td>1.37</td>
<td>1.30</td>
<td>.11</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td>Step 2: Alcohol quantity</td>
<td>1.0</td>
<td>0.35</td>
<td>.32</td>
<td>2.88**</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>1.32</td>
<td>1.28</td>
<td>.11</td>
<td>1.03</td>
<td></td>
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<tr>
<td>Quantity \times Gender</td>
<td>-1.38</td>
<td>0.69</td>
<td>-.22</td>
<td>-2.02*</td>
<td>.17</td>
</tr>
<tr>
<td>Tension reduction expectancies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1: Alcohol quantity</td>
<td>0.29</td>
<td>0.14</td>
<td>.24</td>
<td>2.12*</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-0.49</td>
<td>0.53</td>
<td>-.10</td>
<td>-0.93</td>
<td>.04</td>
</tr>
<tr>
<td>Step 2: Alcohol quantity</td>
<td>0.28</td>
<td>0.14</td>
<td>.24</td>
<td>1.96*</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-0.49</td>
<td>0.53</td>
<td>-.11</td>
<td>-0.92</td>
<td></td>
</tr>
<tr>
<td>Quantity \times Gender</td>
<td>-0.03</td>
<td>0.28</td>
<td>-.01</td>
<td>-0.10</td>
<td>.04</td>
</tr>
</tbody>
</table>

Note. Degrees of freedom for \( t \) values are (1, 76).

* \( p < .05 \). ** \( p < .01 \). *** \( p < .001 \).
Alcohol consumption was associated with subjective evaluation of the value of both social enhancement and tension reduction expectancies. Fromme and colleagues (1993) also showed a significant association between alcohol consumption and subjective evaluation of expectancies, though they did not examine specific associations by gender. We extend the Fromme et al. (1993) findings by demonstrating a moderating effect of gender. Although gender did not show significant direct associations with subjective evaluation of these expectancies in our study, gender did moderate the association between use and subjective evaluation for social enhancement expectancies. Interestingly, this moderation pattern was similar to that observed for the association between consumption and expectancy accessibility. It has been suggested that alcohol expectancies may differ by gender according to the value of expected outcomes (P. B. Johnson & Glassman, 1999; Leigh & Stacy, 1991; Mulligan-Rauch & Bryant, 2000). This value placed on particular effects of alcohol may be a primary mechanism through which expectancies affect drinking.

**Limitations**

A number of limitations should be considered in interpreting this study’s findings. First, ethnic differences in alcohol consumption as well as risk and protective factors for heavy drinking and associated consequences have been noted (Deas, Grimes, Randall, & May, 2001; Keefe & Newcomb, 1996; Wechsler, Dowdall, Davenport, & Castillo, 1995). Accordingly, the relative ethnic homogeneity of this sample limits the generalizability of our findings.

Fazio et al. (Fazio, 2001; Fazio et al., 1986; Fazio & Williams, 1986) have noted that previous exposure to particular beliefs may facilitate accessibility. Participants in this study completed the self-report expectancy questionnaire prior to the administration of the computerized EA task. Although the two measures contained the same expectancy words, it is possible that the self-reported expectancy words may have resulted in priming effects that varied as a function of specific expectancies held by individual participants. As such, it may be that the self-report expectancy measure resulted in differential priming effects in our study.

A number of different types of expectancies have been identified in the literature, but only two were examined in our study. The expectancy subscales that we chose to focus on are the two that the literature suggests would be most common. Among different types of alcohol expectancies, those related to positive and negative affect regulation; social enhancement and tension reduction expectancies. Both of these types of expectancies are theorized to motivate drinking behavior—particularly when relevant affective states are present. In particular, with respect to the Social Enhancement scale, this not only examines expectancy attitudes relevant to positive affect regulation but also captures social–environmental factors (e.g., the perception of alcohol’s ability to enhance social interaction) that have been shown in our own and others’ research to be central to the etiology of college drinking behavior (Kahler, Read, Wood, & Palfai, 2003; Read, Wood, Kahler, Maddock, & Palfai, 2003; Wood, Read, Palfai, & Stevenson, 2001). Nonetheless, other types of expectancies from the Fromme et al. measure (e.g., cognitive and behavioral impairment, risk and aggression, sexual expectancies) or elsewhere were not tested here. Thus, the associations among gender, drinking status, and these other types of expectancies remain unknown.

Another limitation pertains to the narrow way in which alcohol consumption was measured here. A primary objective of this study was to disentangle the relations among gender, alcohol consumption, and expectancies. As gender differences in expectancies are commonly confounded by drinking level, we sought to examine the unique contribution of gender to various expectancy dimension outcomes after controlling for amount of alcohol consumed, which would be expected to be greater for men and women just on the basis of factors such as body size and alcohol metabolism. As such, we chose to focus on alcohol quantity rather than other indexes of drinking patterns, such as frequency of consumption. Still, this study would have been strengthened by a multiple-item assessment of alcohol consumption.

**Implications and Conclusions**

Despite its limitations, the present study offers a number of strengths. Knowledge regarding the accessibility of expectancies helps to shed light on how beliefs about alcohol may be mechanistically different for men and women. Further, the use of two distinct methods for assessing the value of expectancies allowed us to examine gender differences in these evaluations across measurement approaches. As reaction to expectancy items in the computerized EA task is automatic, we believe this assessment is more likely to capture a visceral response to expectancy items and thus serve as an index of the importance or value of such expectancies (Palfai et al., 1997). The Fromme et al. (1993) subjective evaluation ratings require explicit consideration of the relative strength of each expectancy item. That associations among consumption, gender, and these two approaches demonstrated a similar pattern of findings offers corroborative evidence for the moderating effect of gender on associations between alcohol use and expectancy value. Finally, our findings examine both unique and interactive associations among gender, drinking, and positive and negative reinforcement expectancies, allowing for fine-grained understanding of these variables in relation to one another.

Though preliminary, our findings have potential implications for the refinement of expectancy-based interventions. For example, these data suggest the utility of distinguishing among different types of alcohol expectancies in expectancy-based interventions and focusing specifically on how and for whom such expectancies might be most salient. Expectations regarding how alcohol will enhance positive affect or social interactions are important motivators for college alcohol use (e.g., MacLatchy-Gaudet & Stewart, 2001; Read et al., 2003; Stewart, Zeitlin, & Samoluk, 1996; Wall, Hinson, & McKee, 1998). The significant gender effect we observed for both accessibility and endorsement of social enhancement expectancies suggests that these beliefs are...
particularly powerful for women and may require specific targeting in preventive interventions.

Expectancy-based interventions that focus on changing beliefs about the enhancing effects of alcohol may be effective in reducing drinking over short-term follow-ups (see Darkes & Goldman, 1993, 1998). Notably, studies have found such interventions to be most effective for heavier drinkers. Our finding that heavier drinking men show more rapid accessibility of these expectancies and endorse greater expectancy value offers one possible explanation for why expectancy challenges may show better outcomes in heavy drinking men, as they operate on these active etiological mechanisms.

In our study, we found the same expectancy constructs to be correlated across assessment methods, but only moderately. This finding is consistent with other work using multiple methodologies to assess cognitive processes (Dovidio, Kawakami, & Beach, 2001; Palfai & Wood, 2001) and supports the notion that these two approaches are evaluating different aspects of the expectancy process.

It has been noted that the phenomenon of drinking in college may be quite different for women than it is for men. Accordingly, interventions must be informed by research that explicates relations among these variables, particularly as they are affected by gender. Finally, novel approaches to evaluating different aspects of the expectancy process.

References


In K. E. Leonard & H. T. Blane (Eds.), *Psychological theories of drinking and alcoholism* (pp. 203–246). New York: Guilford Press.


New Editor Appointed for *Journal of Occupational Health Psychology*

The American Psychological Association announces the appointment of Lois E. Tetrick, PhD, as editor of *Journal of Occupational Health Psychology* for a 5-year term (2006–2010).

As of January 1, 2005, manuscripts should be submitted electronically via the journal’s Manuscript Submission Portal (www.apa.org/journals/johp.html). Authors who are unable to do so should correspond with the editor’s office about alternatives:

Lois E. Tetrick, PhD
Incoming Editor, JOHP
George Mason University
Department of Psychology, MSN, 3F5
4400 University Drive, Fairfax, VA 22030

Manuscript submission patterns make the precise date of completion of the 2005 volume uncertain. The current editor, Julian Barling, PhD, will receive and consider manuscripts through December 31, 2004. Should the 2005 volume be completed before that date, manuscripts will be redirected to the new editor for consideration in the 2006 volume.