College Students' Evaluations of Alcohol Consequences as Positive and Negative

Megan E. Patrick, Ph.D.[1] and **Jennifer L. Maggs, Ph.D.**[2]

[2]Department of Human Development and Family Studies, The Pennsylvania State University, University Park, PA 16802

Abstract

Alcohol expectancy, motivation, and consequences measures assume a known valence of `positive' and `negative' outcomes. However, different individuals may rate the same consequences of alcohol use as good or bad. The current study examines the extent to which: (a) college students rate researcher-defined positive consequences as good and researcher-defined negative consequences as bad, and (b) these evaluations predict alcohol use and problems after controlling for previous use. In longitudinal self-reports via web-surveys across the first three semesters of college, students (*N*=600; 54% women) reported their alcohol use and problems, experienced consequences, and evaluations of those consequences. Contrary to the generally-accepted valence of positive consequences, Fun/Social consequences were viewed as neutral or negative by 22% (having more fun) to 73% (relieving boredom) of participants. Over half of participants evaluated each of the Relaxation, Sex, and Image consequences items as neutral or negative. Consistent with the generally-accepted valence of negative consequences, Physical/Behavioral consequences were viewed by the majority as negative, although 11% (getting in trouble with police/authorities) to 34% (doing/saying something embarrassing) of students rated these consequences as neutral or positive. Independent of levels of previous drinking, more positive evaluations of Fun/Social consequences prospectively predicted frequency, quantity, and maximum drinks. Less negative evaluations of Physical/Behavioral consequences predicted more alcohol problems. There is variation in the evaluations of consequences among college students, and understanding characteristics of those who view consequences as positive or negative may have implications for future alcohol-related behaviors and problems.

1.1 Introduction

Research on alcohol use has long examined expectations for and experiences with positive and negative consequences of drinking. Drinkers' self-perceptions of how good or bad these consequences are has been less frequently considered, despite the fact that the (un)desirability of particular consequences is assumed by measures of alcohol expectancies and motivations to inspire or deter alcohol use behaviors. For example, measures that ask about whether individuals drink to cheer themselves up assume that these effects are perceived to be positive effects of drinking. Fromme and colleagues (1993) documented the structure of subjective evaluation ratings among college students, such that some

[1]Corresponding Author: Megan E. Patrick, Institute for Social Research, University of Michigan, Ann Arbor, MI 48106-1248; meganpat@isr.umich.edu; Phone: 1-734-763-7107; Fax: 1-734-936-0043..

hypothetical alcohol effects were largely but not universally rated as positive (e.g., sociability, tension reduction) and others as negative (e.g., cognitive or behavioral impairment). However, some consequences assumed by clinicians and researchers to be negative, such as impaired cognitive functioning, are actually subjectively evaluated as positive by some individual drinkers (Fromme et al., 1993; Mallett et al., 2008; McKee et al., 1998; Neighbors et al., 2003). Expectancy-value theories (Bauman et al., 1985, 1989; Fishbein and Ajzen, 1975; Hays, 1985; Kuthar, 2002), for example, emphasize the importance of the perceived value of potential behavioral consequences as formative for behavioral intentions. Individual variation in the valence (i.e., direction) and strength of associated positivity and negativity therefore may be an important factor in understanding decisions to use alcohol.

Although the degree to which individuals consider particular consequences of drinking to be subjectively positive or negative is likely to vary across individuals, empirical evidence for this is largely lacking (Fromme et al., 1986; Jones et al., 2001; Leigh, 1989). Mallett, Bachrach, and Turrisi (2008) assessed variability in the positive-negative ratings of so-called "negative" consequences among college students. They found that a small majority of college students who experienced consequences such as hangovers did not rate these experiences as negative: 28% viewed this consequence as neutral and 25% rated it as positive. Similarly, only half of those who experienced physical consequences such as blackouts rated the experience as negative. In order to fully understand college student alcohol use behavior, it is therefore necessary to understand that many young adults, although aware of risks to their health and safety, do not view all consequences as serious or necessary to avoid (Leigh and Lee, 2008). As researchers, we should acknowledge that although some items are generally perceived as good or bad, there may be meaningful individual variation in respondents' perceptions. Identifying which consequences are actually perceived as negative, and by whom, will help design stronger intervention programs that capitalize on individuals' motivations to change and are more salient to individuals at risk. In addition, it will help avoid potential iatrogenic effects that may result from health promotion messages indicating that certain consequences—that are coded by researchers as negative but may be perceived by some or perhaps many college students as subjectively rewarding—are likely to happen when drinking heavily. Misattributing behavioral motivations may leave intervention programs ineffective if students feel that they do not apply to their experiences or acknowledge their most salient reasons for drinking.

1.1.1 The Impact of Evaluations

The valence of potential alcohol-related consequences, that is whether consequences are perceived as positive or negative, has been shown to vary across people and to predict alcohol use behaviors (McKee et al., 1998). Park (2004) asked students to identify their most negative and most positive drinking event in the prior two months. Students who rated their own negative drinking event as more negative perceived that it would have a greater impact on their future drinking than those who rated their experience as less negative; those who rated their most positive event as more positive perceived it would have a greater impact on their future drinking than those who rated their experience as less positive. Similarly, perceiving alcohol-related problems (e.g., passing out, interfering with work/school obligations) as less negative was associated with heavier drinking and more alcohol-related problems (Gaher and Simons, 2007; Mallett et al., 2008; Neighbors et al., 2003).

The majority of work examining evaluations of positive and negative consequences of drinking has been cross-sectional. For example, lighter and heavier drinkers have different expectancies and evaluations concurrently (Leigh, 1989), but alcohol evaluations may be a response to experienced consequences rather than prospective predictors of use. Longitudinal work regarding how individuals' evaluations of their experienced consequences

are associated with future alcohol use behaviors, controlling for prior alcohol use and problems, is required to more fully understand these effects (Gaher and Simons, 2007; Park, 2004). The ways in which evaluations of consequences prospectively predict behavior at later points in time will provide essential information regarding whether and how individuals incorporate and react to positive and negative experiences, and whether evaluations may operate as risk factors for future use and consequences. If evaluations are shown to be an important construct for predicting subsequent alcohol use behavior, they may be an additional target for intervention approaches that encourage individuals to reflect on their experiences by weighing the pros and cons of behavior (e.g., motivational interviewing; Miller and Rollnick, 1991). Understanding evaluations may be an important filter for tailoring the content of a personalized intervention. For example, those who view particular consequences as more negative may be more motivated to avoid them and therefore respond more favorably to certain intervention components, thus making interventions more potent and efficient.

Research questions for the current study were: (1) Do college students evaluate researcher-defined positive consequences as good and researcher-defined negative consequences as bad? and (2) To what extent do evaluations predict alcohol use and subsequent problems (controlling for previous alcohol use)?

1.2 Material and Methods

1.2.1 Participants

Data were from the University Life Study (ULS), which is a prospective study of daily experiences among college students. ULS employed a web-based measurement burst design, with a baseline survey and 14 consecutive daily surveys each semester. Eligible participants were first-year, first-time, full-time students at a large university in the Northeastern U.S. A stratified random sampling procedure was used to achieve a diverse sample of students with respect to gender and race/ethnicity and thus does not represent the university's population. During the first week participants' first semester of classes, recruitment letters were sent to selected students with a pen and $5 enclosed. Email invitations followed, with secure links to the web-based surveys. Students were invited to complete a baseline survey and then 14 consecutive daily surveys. Data analyzed here were collected from students during Semester 1 (Fall of their first year on campus), Semester 2 (Spring of first year), and Semester 3 (Fall of second year). Incentives for participation included the $5 pre-incentive (in Semester 1 only), a $20 baseline survey incentive (in Semesters 1 and 2, increased to $30 in Semester 3), and $3 per daily survey incentive with an $8 completion bonus (increased to $13 in Semester 3). Participants provided an electronic signature on an online consent form. The study was approved by the Institutional Review Board and protected by a federal Certificate of Confidentiality.

In total, 746 students (65.6% response rate) completed the Semester 1 baseline survey. The sample self-identified as 25% Hispanic/Latino American. The non-Hispanic/Latino participants were racially diverse; 16% of sample participants self-identified as African American, 23% as Asian American/Pacific Islander American, 27% as European American, and 9% as more than one race. The original sample was 51.9% women. Attrition analyses showed that students retained in Semester 3 did not differ from attriters on Hispanic/ Latino ethnicity, self-reported race (i.e., African American, Asian American, European American), age, or Semester 1 binge drinking (all χ^2 and F-tests non-significant at $p < .05$ threshold). However, men were less likely to participate at Semester 3 than women (χ^2 (1, $n= 744$) = 7.26, p < .01). The sample for the current analyses included individuals who provided complete data on modeled variables (described below) from Semesters 1, 2, and 3 ($N=600$, 53.7% women).

1.2.2 Measures

Evaluations of Alcohol Consequences—At Semester 2, participants were asked, "Please rate how bad or good each particular effect of drinking would be for you. We want to know if you think a particular effect is bad or good, regardless of whether you expect it to happen to you when you drink alcohol." The response scale range was 0 = *very bad*, 1 = *slightly bad*, 2 = *neutral*, 3 = *slightly good*, 4 = *very good* (adapted from Fromme et al., 1993). Consequences were items from the Importance of Consequences of Drinking (ICOD) short form (Maggs, 1993; Patrick and Maggs, 2010) motivations subscales. Full item content for researcher-coded positive <u>Fun/Social</u> evaluations (5 items, α = .85), <u>Relaxation/Coping</u> evaluations (4 items, α = .83), <u>Image</u> evaluations (4 items, α = .82), and <u>Sex</u> evaluations (2 items, α = .76) is presented in the first column of Table 1. The researcher-coded negative <u>Physical and Behavioral</u> evaluations (7 items, α = .86) are also shown.

Alcohol Behaviors and Problems—At Semesters 1 and 3, participants reported on their frequency, typical quantity, and maximum quantity of alcohol use in the past month, as well as alcohol problems. <u>Frequency</u> was measured with the question, "During the last 30 days (one month), how often did you have any kind of drink containing alcohol? By a drink we mean half an ounce of absolute alcohol (e.g., a 12-ounce can [or bottle] of beer or cooler, a 5-ounce glass of wine, or a drink containing 1 shot of liquor or spirits)." Response options were 0=did not drink, 1=Once, 2=2 to 3 times, 4=Twice a week, 5=3 to 4 times a week, 6=5 to 6 times a week, and 7=everyday. <u>Typical quantity</u> was reported with the question, "During the last 30 days (one month), how many alcoholic drinks did you have on a typical day when you drank alcohol?" with response options of 0=none [for those who did not drink any alcohol], 1=1 drink, 2=2 drinks, 3=3 to 4 drinks, 4=5 to 6 drinks, 5= 7 to 8 drinks, 6=9 to 11 drinks, 7=12 to 15 drinks, 8=16 to 18 drinks, 9=19 to 24 drinks, 10=25 or more drinks. <u>Maximum drinks</u> was measured by asking, "During the last 30 days (one month), what is the maximum number of drinks containing alcohol that you drank within a 24-hour period?" with a fill-in-the blank response format (to a maximum of 25 drinks). <u>Alcohol problems</u> were assessed by the Rutgers Alcohol Problem Index (RAPI) (White and Labouvie, 1989). The RAPI screens for problem drinking, with high internal consistency (α = .90 [both semesters] in the present sample) and good convergent validity with other measures of alcohol use and abuse (White and Labouvie, 1989). Respondents reported how often they had ever (Semester 1) or in the past 12 months (Semester 3) experienced 23 negative alcohol-related consequences (e.g., not able to study, got into fights) on a scale of 0 = *none*, 1 = *1–2 times*, 2 = *3–5 times*, and 3 = *More than 5 times*. The sum of items in each semester was used. In Semester 1, lifetime (but not past 12 month) alcohol problems were assessed, to reduce respondent burden.

1.3 Results

Descriptive statistics regarding the evaluations are shown in Table 1. Addressing research question 1, there was variability between persons in whether researcher-coded positive consequences (Fun/Social, Relaxation, Image, Sex) and researcher-coded negative consequences (Physical/Behavioral) were seen as bad, neutral, or good. Contrary to the generally-accepted and coded valence of positive Fun/Social consequences, these items were viewed as neutral or negative (i.e., ≤ 2) by 22% (having more fun) to 73% (relieving boredom) of participants. Over half of participants rated each of the four Relaxation consequences as neutral or negative (from 51% for relieving tension to 87% for coping with daily life). Similarly, Sex consequences (69% for having a good sexual experience, 70% for enjoying a sexual experience more) and Image consequences (from 70% for seeming more exciting to others to 95% for showing people you drink) were evaluated as neutral or negative by the majority of students. There was less variation in evaluations of researcher-

coded negative Physical/Behavioral consequences, with ratings being more consistent with assumed valences. Nonetheless, between 11% (getting in trouble with police or authorities) and 34% (doing or saying something embarrassing) of students rated these consequences as neutral or positive (i.e., ≥ 2).

To address research question 2, the prediction of alcohol use and subsequent consequences by evaluations, controlling for previous alcohol use, correlation/regression analyses were performed. First, correlations between evaluations of consequences and drinking outcomes are shown Table 2. Across all five domains, students who rated consequences as more positive and less negative in the Semester 2 reported more frequent alcohol use, a greater typical quantity of drinks, and a higher maximum 24-hour consumption, each in the 30 days prior to assessment in Semester 3. In addition, more positive and less negative consequence ratings predicted higher alcohol problems in the subsequent year as assessed by the RAPI.

Second, regression models were conducted to determine whether, controlling for gender and previous drinking at Semester 1, evaluations of consequences predicted relative change in drinking frequency, drinking quantity, the maximum number of drinking consumed in the last month, and the RAPI indicator of problem drinking at Semester 3.[1] After accounting for the large amount of variance associated with gender and previous alcohol behaviors or problems, evaluations accounted for an additional significant amount of variance for each alcohol-related outcome. Fun evaluations emerged as unique predictors of increases in frequency, quantity, and maximum drinks the following semester. Physical/Behavioral evaluations were significant prospective predictors of RAPI scores. In other words, people who viewed Physical/Behavioral evaluations as less negative showed increases in their RAPI scores between Semesters 1 and 3 relative to their peers.

1.4 Discussion

Positive consequences were not universally rated as good by first-year college students at a large state university in the Northeast United States. Although the majority rated having more fun and feeling closer to friends as very or slightly good, the modal response was neutral for all items assessing relaxation, image, and sex consequences. These findings point to between-person differences in perceived positivity and negativity of possible outcomes of consuming alcohol that have traditionally been assumed to be perceived as positive by alcohol theory and assessment instruments. In contrast to the between-person variation observed in positive consequence evaluations, the students in this sample largely seemed to agree that purported negative consequences were very or slightly bad, as assumed by theory and measurement instruments. In particular, getting in trouble with authorities, passing out, and losing control of oneself were rated as very bad by a majority of the sample. Each of the negative physical or behavioral consequences was rated as slightly or very good by a very small proportion (<3%) of participants. Broadly speaking, this pattern of results focusing on evaluations might appear to suggest greater underlying validity of measures assessing expectancies and motivations regarding negative consequences than positive consequences. However, motivations for positive consequences and the experience of positive consequences tend to predict alcohol use better than motivations to avoid negative consequences and experiencing negative consequences (Maggs, 1997; Park, 2004; Patrick and Maggs, 2008), perhaps because there is more variance in reported motivations to drink or because of the normative social and celebratory nature of student drinking.

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[1] Gender × Evaluation interactions were tested for all subscales and all outcomes, but none were found to be significant, so they are not included in the final models shown.

Students evaluated the fun consequences of alcohol use most positively, and individual differences in fun evaluations were the most predictive of frequency, quantity, and maximum drinks of alcohol as indicated by bivariate correlations and by regression coefficients showing unique predictive associations, independent of links with gender, prior drinking, and the other four domains of evaluations. Because prior drinking was controlled in the regression analyses, these evaluations can be said to predict relative change (i.e., increases or decreases relative to others in the sample) in the alcohol outcomes. The evaluations of relax, image, and sex consequences did not uniquely predict change in any of the alcohol outcome variables, though modest bivariate associations were observed with all outcomes. Physical/behavioral consequences were rated by far most negatively, on average; these evaluations were the only unique predictor of alcohol problems. This pattern of results is consistent with research on alcohol motivations in adolescents and adults demonstrating that drinking to enhance positive emotions or experiences is more predictive of alcohol use than drinking to cope, and that the former is related to alcohol problems only through its effect on alcohol use (Cooper et al., 1995). We speculate that experiencing fun and positive social experiences is a dominant and common aspect of drinking alcohol in college populations. Relaxation, image enhancement, and sex-related consequences may be viewed generally positively yet are present in only some, and certainly not a majority, of drinking occasions in this population. Thus, because celebratory, shared experience, social drinking experiences are typical among students, evaluations of these consequences as positive may be uniquely predictive of multiple indicators of alcohol use.

A related argument can be made for understanding why evaluations of physical and behavioral consequences might only uniquely predict alcohol problems. Whereas positive experiences are potentially subjectively experienced at all levels of consumption (from a sip to excessive use), negative experiences are relatively unlikely with infrequent, light consumption but increasingly probable with sustained, heavy use. Thus, evaluating physical/behavioral outcomes as neutral or positive appears to be a unique risk factor for alcohol problems, as assessed by the RAPI. It is also important to note that the physical and behavioral consequences are more similar to consequences assessed here as alcohol problems (e.g., passing out, experiencing negative effects the next morning), and more independent of (i.e., least correlated with) the other types of evaluations.

An additional contribution of this study is the consideration of both positive and negative consequences of alcohol use simultaneously and prospectively, even controlling for the outcomes at a previous time. Many studies examining evaluations have used only cross-sectional data and/or focused solely on the evaluations of undesirable consequences (e.g., Fromme et al., 1993; Leigh, 1987; Mallett et al., 2008), or included perceptions of positive effects but in a different population (i.e., among individuals in alcohol treatment in Jones & McMahon, 1996). Park (2004) found that college students reported that their most positive drinking experience would influence their future drinking more than their most negative drinking experience, and that experiences with positive consequences were more common. Therefore, it is important to consider experiences and evaluations of both positive and negative consequences.

1.4.1 Research and Intervention Implications

Evaluations have bearing on researchers' conceptualizations of related constructs such as motivations and expectancies, and the implications of these findings for existing scales may vary based on particular construct being measured. Expectancies are defined as the perceived *likelihood* that a consequence will occur given a particular action, but they do not assess the importance of the outcome for the individual. Motivations or reasons measures come closer to assessing what drinkers experience as positive or negative by asking the *importance* to the individual of achieving (or avoiding) a particular consequence as a reason

for that action. In fact, alcohol motivations are clear and consistent predictors of alcohol use behaviors (Cooper, 1994; Cox and Klinger, 1988; Kuntsche et al., 1995; Patrick and Maggs, 2010) and they are common targets in prevention and intervention efforts (Burke et al., 2003; Coffman et al., 2007; Miller and Rollnick, 1991). However, if these scales assume a direction (i.e., motivations to drink items are assumed to be valued positive outcomes and motivations not to drink items are assumed to be desirable to avoid) then they still fail to capture potential variability in the valence of consequences for participants. By not assessing the perceived valence, that is the evaluation of the consequence as good or bad, researchers miss some of the nuanced story regarding why people drink and thereby hamper their ability to predict behavior and intervene to improve it.

Taken together, the demonstration of variability in the valence of perceived goodness, neutrality, and badness of positive and negative consequences, along with the prediction of relative increases in quantity, frequency, maximum drinking, and alcohol-related problems, have important implications for prevention. Universal prevention approaches, such as high school drug prevention curricula or freshman orientation health promotion programs, should be careful to avoid drawing attention to the possibility of alcohol-related consequences that could be rated as neutral or positive by those at highest risk for heavy drinking and alcohol-related problems. Selected interventions, such as motivational interviewing with students screening at elevated risk for heavy drinking, might also seek to tailor program content about expectancies, motivations, and goals to avoid consequences that the individual views as desirable. For example, interventions may warn college students that they will do or say something embarrassing when drinking, assuming that this fact will deter future use. The results of this study suggest, however, that embarrassment is only considered "very bad" by ¼ of the college students surveyed. Researchers and prevention scientists need to understand the perceptions of these consequences in order to design the most efficacious interventions and avoid potential iatrogenic effects, such as suggesting that an objectively negative but nonetheless highly desirable consequence may be more likely after drinking. For the approximately 1/6 of participants here who viewed a hangover, passing out, or losing control of oneself as neutral or good, therapeutic goals would need to include changing perceptions and acknowledging the undesirability of these consequences before they could be used to motivate positive behavioral change. Alternatively, identification of negative consequences viewed by an individual as very bad would suggest a useful motivational target. Finally, evaluations of consequences, or subjective ratings of how good or bad a consequence was, may also be helpful in monitoring treatment outcomes. Alcohol treatment may be assessed as more effective as clients' appraisals of drinking consequences have become less extreme. On the other hand, rating positive consequences as more desirable and negative consequences as more negligible may be a warning sign that an individual is at greater risk for escalating heavy drinking (Fromme et al., 1993).

1.4.2 Limitations and Future Directions

This study does have notable limitations. The sample is from a single university and may not generalize to other campuses or non-university contexts. In addition, we understand that evaluations are confounded with knowledge and level of personal experience with alcohol. An optimal design would be to study evaluations of alcohol consequences prior to experience with alcohol and track how evaluations may change in response to development and personal experiences in order to more fully understand how evaluations are formed. It is likely there are normative age, gender, and perhaps crowd-reputation related differences that could be used to create targeted interventions. In addition, the model does not include perceived likelihood of alcohol-related consequences. Future research should assess the valence of evaluations of consequences of alcohol and other substances in varied populations and sub-populations. Based on the results of this study, further quantitative and

qualitative work exploring the perceptions of so-called positive and negative alcohol-related consequences is required in order to understand what is motivating to heavy drinkers.

Acknowledgments

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Research Highlights

- There is variation in the evaluations of alcohol-related consequences as positive or negative among college students.

- Contrary to the generally-accepted valence of positive consequences, Fun/Social alcohol consequences were viewed as *neutral or negative* by 22% (having more fun) to 73% (relieving boredom) of college student participants. Over half of participants evaluated each of the Relaxation, Sex, and Image consequences items as neutral or negative.

- Consistent with the generally-accepted valence of negative consequences, Physical/Behavioral consequences were viewed by the majority as negative, although 11% (getting in trouble with police/authorities) to 34% (doing/saying something embarrassing) of students rated these consequences as *neutral or positive*.

- Independent of levels of previous drinking, more positive evaluations of Fun/Social consequences prospectively predicted greater frequency, quantity, and maximum drinks. Less negative evaluations of Physical/Behavioral consequences predicted more alcohol problems the following semester.

Table 1

Descriptive Statistics: Evaluations of Consequences, Subscales and Items

	M (SD)	Very Bad (0) %	Slightly Bad (1) %	Neutral (2) %	Slightly Good (3) %	Very Good (4) %
Fun Evaluations	*2.74(.49)*					
Having more fun	3.13(.96)	2.8	2.0	17.6	35.0	42.6
Feeling closer to your friends	2.84(.99)	3.6	2.6	28.7	36.7	28.4
Having a good time	3.09(.96)	2.9	2.2	18.0	37.0	39.9
Becoming more social	2.82(.93)	3.4	2.5	25.3	46.2	22.6
Relieving boredom	1.83(1.11)	17.6	13.6	41.7	22.0	5.1
Relax Evaluations	*2.15(.82)*					
Relieving tension	2.43(.99)	6.4	5.3	39.0	37.3	12.0
Unwinding	2.30(.99)	7.5	7.5	40.8	35.9	8.4
Relaxing after a stressful situation	2.33(1.02)	8.9	5.6	38.5	37.9	9.0
Coping with daily life	1.54(1.04)	23.8	13.9	49.2	10.6	2.5
Image Evaluations	*1.76(.76)*					
Looking interesting to other people	1.98(.93)	9.6	10.9	55.6	19.9	4.0
Seeming more exciting to others	2.08(.92)	9.3	6.8	53.4	27.0	3.4
Maintaining your reputation	1.59(.99)	19.7	15.8	53.8	7.6	3.1
Showing people you drink	1.38(.92)	24.3	19.1	51.3	4.8	0.5
Sex Evaluations	*1.89(1.22)*					
Having a good sexual experience	1.90(1.26)	21.6	9.3	37.9	20.0	11.2
Enjoying a sexual experience more	1.88(1.24)	21.4	8.9	39.4	20.6	9.7
Physical/Behavioral Evaluations	*0.71(.60)*					
Having a hangover	0.73(.78)	45.0	38.7	14.6	1.4	0.3
Passing out	0.53(.81)	65.3	17.8	15.8	0.8	0.3
Ending up in bad physical shape the next day	0.72(.77)	46.0	37.9	14.6	1.2	0.2
Having your coordination affected	0.95(.88)	38.2	31.5	28.2	1.7	0.5
Doing or saying something embarrassing	1.11(.81)	25.4	40.8	31.3	2.3	0.2
Losing control of yourself	0.63(.86)	59.3	20.8	17.5	2.0	0.3
Getting in trouble with the police or authorities for drinking	0.28(.73)	85.0	4.0	9.2	0.9	0.8

Table 2

Descriptive Statistics and Correlations of Evaluations of Consequences at Semester 2 with Alcohol-Related Outcomes at Semester 3

	Alcohol-Related Outcomes				Inter-correlations			
	Frequency	Quantity	Max Drinks	RAPI	Fun	Relax	Image	Sex
Outcome Mean (SD)	2.32 (1.84)	2.72 (2.15)	5.72 (5.73)	3.89 (6.22)				
Evaluations								
Fun	.36***	.36***	.36***	.22***				
Relax	.20***	.24***	.23***	.21***	.65***			
Image	.22***	.26***	.25***	.21***	.56***	.62***		
Sex	.28***	.26***	.25***	.21***	.43***	.43***	.54***	
Physical/Behavioral	.10*	.14**	.15***	.17***	−.04	.15***	.29***	.20***

Note. Frequency is how often participants drank in the past 30 days. Quantity is the typical number of drinks participants had in the past 30 days. Maximum drinks is the highest number of drinks participants had in 24 hours in the previous 30 days. RAPI is a measure of problem drinking, assessed as the sum of the frequency of experiencing 23 negative alcohol-related consequences (White and Labouvie, 1989). Evaluations were on a response scale of 0 = *very bad* to 4 = *very good.*

*
p<.05.

***
p<.001.

Table 3

Predicting Drinking Outcomes at Semester 3 by Gender, Previous Behavior and Evaluations of Consequences.

	Frequency β(SE)	Quantity β(SE)	Maximum Drinks β(SE)	RAPI β(SE)
Step 1	ΔR^2=.49***	ΔR^2=.42***	ΔR^2=.49***	ΔR^2=.20***
Male Gender	−.07(.11)*	.00(.18)**	.03(.35)	.04(.46)
Outcome, in Semester 1[a]	.70(.03)***	.65(.03)***	.69(.03)***	.44(.03)***
Step 2	ΔR^2=.01**	ΔR^2=.03***	ΔR^2=.02***	ΔR^2=.04***
Fun Evaluations	.10(.10)*	.13(.12)**	.12(.32)**	.08(.41)
Relax Evaluations	.01(.10)	.34(.02)	.02(.29)	.01(.39)
Image Evaluations	−.04(.10)	.01(.13)	.00(.32)	.01(.43)
Sex Evaluations	.07(.06)	.05(.07)	.05(.18)	.11(.23)
Physical/Behavioral Evaluations	.03(.10)	.03(.12)	.03(.32)	.12(.42)**

[a]Frequency, Quantity, Maximum Drinks, and RAPI (respectively, for models with the matching outcome) scores at Semester 1.