

SELF-EFFICACY: JUDGMENTS OF ABILITY OR WILLINGNESS?

by

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(ABSTRACT)

The present studies attempted to clarify the constructs of self-efficacy and outcome expectancies in relation to college student drinking. In study 1, heavy-drinking college students were asked for efficacy judgments for limiting their heavy-drinking for increasing periods of time (e.g. 1 day, 1 week, 1 month, etc.). Students were also asked for efficacy judgments for throwing a basketball into a hoop from increasing distances (e.g. 5 feet, 10 feet, 15 feet). Hypothetical incentives were offered to change efficacy ratings for the first tasks on each hierarchy (limiting drinking and basketball) to which the participant had responded with a negative efficacy judgments. Hypothetical incentives were also offered for the most difficult task on each hierarchy. As predicted, students changed efficacy ratings for limiting drinking much more frequently. Additionally, heavy-drinking college students indicated that money persuaded them to alter their efficacy judgments for limiting drinking, but lack of ability predominated as the reason for not altering basketball task efficacy. In study 2, the relationship between ability judgments, willingness, and outcome expectancies was explored by manipulating the wording of questionnaires presented to heavy-drinking college students. Results indicated that ability judgments were higher than willingness judgments for limiting drinking. Willingness appeared to be related to expected positive and negative effects of consuming alcohol. Principle components analysis indicated that ability and willingness were distinct constructs. Results of both studies are discussed in terms of the ongoing debate between Albert Bandura and Irving Kirsch and the need for a more clarity regarding efficacy and its measurement.

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"Nothing real can be threatened. Nothing unreal exists."
from A Course in Miracles

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Introduction

College student drinking has increasingly become a topic of concern. It is estimated that approximately 70% to 95% of college students drink and between 15% and 25% drink to excessive levels frequently enough for their drinking patterns to be considered problematic (Baer, Kivlahan, Fromme, & Marlatt, 1994). In their national survey of undergraduate students at four-year colleges, Wechsler, Davenport, Dowdall, Moeykens, and Castillo (1994) found that 44% of college students were binge drinkers and 19% were frequent binge drinkers. Excessive alcohol consumption is related to many behavioral problems in this population, including driving while intoxicated, academic difficulties, aggression, accidents, and vandalism.

Here at Virginia Tech, 57.6% of students referred to the University Judicial System were involved in violations of the university's alcoholic beverage policy (1992-1993 Annual Judicial Report). Goree (1995) reported that 24% of Virginia Tech students have driven while impaired. Students also report other negative consequences related to alcohol consumption, including missing class (39%), getting behind in school work (23%), and getting hurt (20%) (Goree, 1995). In order to combat these types of problems it is necessary to understand how they develop and how they are maintained. Social learning theory may be useful in explaining the development, maintenance, and change of addictive or problematic behaviors, including college student drinking (e.g. Abrams & Niaura, 1987; DiClemente, Fairhurst, & Piotrowski, 1995).

One of the most frequently investigated constructs within social learning theory is self-efficacy. Bandura defined self-efficacy as a "judgment of one's capability to accomplish a certain level of performance" (Bandura, 1986, p. 391). Self-efficacy is hypothesized to be an important, proximal determinant of behavior. If an individual believes that he or she is capable of performing a certain behavior, he or she is more likely to actually perform the behavior. Conversely, people are unlikely to perform behaviors which they do not believe themselves to be capable of performing.

Bandura (1986) lists four common sources of efficacy information: performance accomplishments, vicarious observation, verbal persuasion, and physiological/emotional states. Past performance accomplishments are the most powerful of the four influences on self-efficacy. If an individual has previously been successful at a given task, his or her self-efficacy for the task will be greater than if he or she was previously unsuccessful. Vicarious observation or modeling is also an influential source of efficacy information, particularly if the model is similar to the subject in characteristics the subject believes are relevant to the task, whether or not these characteristics are actually relevant (Suls & Miller, 1977). Verbal persuasion, although less influential than the two sources already mentioned, can be utilized to increase self-efficacy. However, persuasion for a task beyond a person's ability could result in failure, thus lowering efficacy and undermining the credibility of the persuader. People also rely on their physiological and affective states in making self-efficacy judgments. Because high arousal frequently lowers performance levels, people may

interpret physiological arousal as an indication that they cannot perform a specified task (Bandura, 1986).

Bandura (1986) also discussed the construct of outcome expectancies, which he defined as a belief about the expected consequences of a behavior. Although the two concepts are hypothesized to be distinct, Bandura stated that “expected outcomes are highly dependent on self-efficacy judgments” (Bandura, 1986, p. 391). If a person believes himself or herself to be capable of doing a certain task, the outcome expectations will likely be positive and the person is more likely to attempt performance. If a person believes himself or herself incapable of successfully performing, then the outcome expectations will be negative and the person is unlikely to attempt the behavior.

Self-efficacy has been a useful construct in such diverse research areas as phobias (Bandura & Adams, 1977; Bandura, 1986), pain management (Manning & Wright, 1983; Shoor & Holman, 1984), learning and achievement (Campbell & Hackett, 1986; Wood & Locke, 1987), faculty research productivity (Taylor, Locke, Lee, & Gist, 1984), and work performance (Barling & Beattie, 1983; Stumpf, Brief, & Hartman, 1987). However, the operationalization of self-efficacy in relation to addictive behaviors is somewhat different. While self-efficacy applied to areas like phobias means an estimate of one’s ability to perform a certain behavior (e.g. pick up a snake), self-efficacy in relation to addictive behaviors is typically operationalized as an estimate of one’s ability *not* to perform a certain behavior (e.g. drink an alcoholic beverage). In fact, DiClemente (1986) defined four types of self-efficacy in relation to addictive behaviors: treatment behavior self-efficacy, recovery self-efficacy, control self-efficacy, and abstinence self-efficacy. All types, with the exception of treatment behavior self-efficacy, refer to the avoidance or reduction of a behavior.

Despite this difference in the definition of the construct, self-efficacy has proven useful in relation to addictions. Higher levels of self-efficacy have been shown to predict continued abstinence after cessation from cigarette smoking (e.g. Wilson, Wallston, & King, 1990; Colletti, Supnick, & Payne, 1985), alcohol use (e.g. Sitharthan & Kavanagh, 1991; Solomon & Annis, 1990), and marijuana use (Stephens, Wertz, & Roffman, 1993; Stephens, Wertz, & Roffman, 1995).

Outcome expectancies have also been extensively investigated in relation to substance abuse. Most of the research addressed the expected consequences of consuming a substance rather than the costs and benefits associated with a change in addictive behaviors. Utilizing the former

definition, the expected effects of consuming alcohol have been consistently related to drinking patterns (e.g. Goldman, Brown, & Christiansen, 1987). Both positive and negative alcohol expectancies have demonstrated relationships to drinking (Leigh, 1989). Heavier drinkers appear to value the immediate positive consequences and to be less concerned with later negative consequences (Leigh, 1989).

The few studies which have examined outcome expectancies for the costs and benefits associated with behavior change have also examined the role of self-efficacy. Solomon & Annis (1990) found that self-efficacy accounted for more of the variance in drinking behavior than did outcome expectancies. Greaves and Stephens (1994) found that neither efficacy nor outcome expectancies for reduced drinking predicted a significant amount of variance in behavioral intentions for moderate drinking among college students, but efficacy predicted how many drinks participants intended to consume per drinking occasion and how many times they intended to reach a .10 blood-alcohol content (BAC) in the next month. Outcome expectations did not account for a significant amount of variance in these dependent variables.

Baldwin, Oei, & Young (1993) found that alcohol effect expectancies and drinking refusal self-efficacy differentially predicted quantity and frequency of alcohol consumption. Drinking refusal self-efficacy was inversely related to both quantity and frequency of drinking, while alcohol effect expectancies were only related to the quantity consumed. The authors proposed that “the initial decision to begin a drinking episode is highly dependent on external factors” and that self-efficacy, therefore, may be more important than alcohol effect expectancies in initiating drinking episodes (Baldwin, Oei, & Young, 1993, p. 515).

The theoretical relationship of efficacy and outcome expectancies is a matter of ongoing debate. Bandura (1986) has stated that self-efficacy judgments reflect beliefs about the level of performance an individual can attain. Since outcomes are often dependent on the level of performance, self-efficacy is predicted to influence outcome expectations. However, Bandura does not believe that outcome expectancies influence efficacy judgments and he predicts that outcome expectancies will not add to the prediction of behavior beyond efficacy judgments. Kirsch (1982) presented a counterargument to this idea by proposing instead that outcome expectancies may be an important influence on self-efficacy judgments, particularly for tasks clearly within an individual’s ability to perform. He proposed that people form their self-efficacy judgments by considering not only what they have the ability to do, but also the positive and negative consequences involved in

performing a given behavior. In some instances, the positive and negative consequences, or outcome expectancies, may not be based entirely on one's level of ability.

To test this hypothesis, Kirsch (1982) asked fifty snake-phobic individuals for efficacy judgments regarding a series of Behavioral Approach Test (BAT) tasks involving snakes, as well as for throwing a paper wad into a wastebasket from increasing distances. When offered incentives, which can be considered to alter outcome expectancies, most participants changed their efficacy ratings for the BAT tasks, but not for throwing the wad of paper into the wastebasket. All of the participants who refused to attempt the most difficult skills task (i.e. throwing the wad of paper) cited a lack of ability as their reason for refusing. Only 10% of the people refusing the final BAT item cited low efficacy as the reason for refusal. Kirsch (1982) also found that ratings of the anxiety individuals expected to experience if they were to do each BAT task were highly, negatively correlated with efficacy ratings. Anxiety ratings probably represent beliefs about the aversiveness of outcomes associated with the BAT tasks. Kirsch concluded that efficacy ratings "have different meanings depending on whether they are made in response to non-aversive skill-tasks or to tasks requiring approach to a feared stimulus" (Kirsch, 1982, p. 136). In the latter instance, Kirsch stated that efficacy ratings are "indications of what subjects are *willing* (rather than *able*) to do" (Kirsch, 1982, p. 136). According to social learning theory (e.g. Marlatt & Gordon, 1985), avoiding excessive alcohol consumption depends on having a variety of drinking and coping skills. However, it is also clear that the expected outcomes of drinking are related to behavioral changes in this area (e.g. Leigh, 1989). It may be that limiting one's alcohol consumption involves elements of both skill-tasks and aversive tasks.

Bandura (1989) may have conceded somewhat to Kirsch's last point when he wrote that "the degree to which outcome expectations contribute to performance motivation independently of self-efficacy beliefs is partly determined by the structural relation between actions and outcomes in a particular domain" (Bandura, 1989, p. 1180). Self-efficacy may be the primary determinant of behavior for those activities in which the outcome is highly dependent on the level of performance. Outcome expectancies that are relatively independent of the quality of behavior, however, may determine efficacy beliefs and behavior (Bandura, 1989).

While Kirsch and Bandura have debated the relationship between these two constructs as applied to the issue of phobias, others have become interested in the difference between self-efficacy and outcome expectancies in relation to addictions. Corcoran & Rutledge (1989) extended

Kirsch's finding regarding the effects of hypothetical incentives on self-efficacy judgments. These authors found that hypothetical incentives increased smokers' efficacy ratings for abstaining from cigarettes for specified lengths of time, but did not increase self-efficacy ratings for shooting a basketball into a hoop from increasing distances. Thus, incentives increased self-efficacy for tasks within the person's capabilities, but not for tasks which participants truly believed themselves to be incapable of performing.

Manipulating outcome expectancies related to assertiveness behavior has been shown to affect both efficacy and outcome expectancy ratings (Maddux, Sherer, & Rogers, 1982). However, when Maddux & Rogers (1983) examined the effects of written information on self-efficacy, outcome expectations, and intentions to quit smoking, the results were different. High self-efficacy information increased participants' own self-efficacy ratings and outcome expectations, but the manipulation of outcome expectations did not significantly affect efficacy or outcome ratings.

Greaves & Stephens (1994) suggest that this difference may be due to differences in the area investigated, with the role of the two expectancies (efficacy and outcome) moderated by the target behavior. In their manipulation of efficacy and outcome information regarding moderate versus heavy alcohol consumption, they found that outcome expectancy information did not affect efficacy ratings and there was no main effect for efficacy information on outcome expectancies. However, high efficacy information appeared to reduce negative outcome expectancies further when the probability of negative outcomes was lower in general. Conversely, a combination of low efficacy information and highly negative outcome information resulted in higher ratings of the probability of negative outcomes for reduced drinking. Utilizing regression analyses, efficacy continued to have predictive power in relation to intentions for heavy-drinking once outcome expectancies had been controlled. Thus, efficacy judgments contained some unique information about drinking. Efficacy also subsumed most of the variance explained by outcome expectations, consistent with Bandura's proposal that efficacy determines outcome expectancies. However, this finding could also be explained by Kirsch's argument that efficacy assessment really measures willingness. If willingness is based in large part on outcome expectancies, then the measurement of efficacy may also be tapping outcome expectancies.

To summarize, findings regarding the relative utility of efficacy and outcome expectancies in predicting behavior have varied considerably. The few studies examining these issues in relation to substance use have found inconsistent results. Manipulation of information on the consequences

of smoking or drinking has not generally affected efficacy judgments for reduced use of the substance (Maddux & Rogers, 1983; Greaves & Stephens, 1994). On the other hand, hypothetical manipulation of monetary incentives for quitting smoking has been shown to have profound effects on perceived efficacy (Corcoran & Rutledge, 1989). Kirsch (1982) has suggested that this may be due to differences in the meaning of self-efficacy ratings as a function of the task involved. Although reducing or quitting drinking may involve certain skills, it may also be aversive to most drinkers who are ambivalent about making a change. Thus, it is likely that both efficacy beliefs about drinking and coping skills, as well as outcome expectancies, play roles in determining drinking.

It is both theoretically and practically important to understand what is measured when “self-efficacy” is assessed. If self-efficacy measures willingness to abstain from or limit one’s consumption of alcohol, then the construct is redundant to simple behavioral predictors. The focus should then be on changing perceived outcomes and their personal value in order to affect willingness. If self-efficacy measures perceived ability, the task becomes one of raising self-efficacy levels through skills training and/or behavioral rehearsal in order to affect behavior by increasing efficacy judgments. Most likely, efficacy judgments represent some combination of ability and outcome expectancies and each component would be important to consider.

The purpose of the present studies was to extend the investigation of differences between self-efficacy and outcome expectations into the area of alcohol use, to help clarify the relationship between these two constructs, and to examine their relative utility in predicting future drinking behavior. The present studies were also designed to examine possible differences between self-efficacy and willingness ratings in relation to alcohol consumption.

The first study, modeled after Corcoran & Rutledge (1989), attempted to clarify the effect of monetary incentives on self-efficacy judgments for reduced alcohol consumption. Participants were asked to rate their perceived efficacy for resisting the urge to drink heavily for increasing periods of time and for throwing a basketball into a hoop from increasing distances. Participants also rated the aversiveness of each task and open-ended questions were utilized to gather information on reasons for refusal.

In study two, the related question of whether individuals were invoking the common linguistic substitution of “can’t” for “won’t” was addressed by administering two self-efficacy questionnaires in two different formats. One questionnaire, a modified version of the Situational

Confidence Questionnaire (Annis & Graham, 1988), assessed self-efficacy for avoiding heavy drinking in a variety of different situations. The other measure assessed efficacy in relation to specific coping skills which can be used to avoid heavy drinking. One format asked the person to rate his or her perceived ability by phrasing the questions in terms of how confident the individual was that he or she “could” resist the urge to drink heavily. The other asked how willing the person was to resist the urge to drink heavily. Thus, the relative difference in ratings between the two questionnaires and formats could be examined. College students typically believe in their ability to control their behavior, including drinking. However, college students experience significant social pressure to drink (Sherry & Stolberg, 1987) and are likely to value the positive effects of alcohol consumption. Thus it was predicted that college student participants’ self-efficacy ratings would be higher than their willingness ratings on both questionnaires.

Participants in study 2 were also asked to complete measure of prior drinking and outcome expectancies and were contacted again one month later to assess recent drinking behavior. The relative utility of the self-efficacy and outcome measures in predicting prospectively the quantity and frequency of alcohol consumption was examined and compared to the predictive utility of willingness ratings.

Study 1

Hypotheses

Based on the findings of Kirsch (1982) and Corcoran & Rutledge (1989), it was predicted that a significantly greater proportion of participants would alter their efficacy judgments for not drinking heavily than for throwing a basketball into a hoop when hypothetical monetary incentives were offered. Additionally, the aversiveness of abstaining from drinking heavily would be significantly negatively correlated with participants’ efficacy ratings for not drinking heavily and the incentives necessary to alter these efficacy ratings would increase as aversiveness increased. It was also predicted that participants would more often cite lack of ability as the reason for not changing efficacy ratings for the basketball tasks when hypothetical incentives are offered, whereas their reasons for changing efficacy ratings for abstaining from drinking heavily would be related to the incentives.

Method

Participants. Fifty undergraduate students (17 males and 33 females) recruited from psychology courses at Virginia Polytechnic Institute and State University met eligibility criteria and

participated in the study. Participants must have reached a .08 blood-alcohol content (BAC) at least once within the past month and have expressed at least some interest in changing their drinking patterns in order to be eligible. The .08 BAC was chosen as the operational definition of heavy drinking because it is the legal limit for driving while intoxicated in the state of Virginia (Code of Virginia, 1994). At this BAC, individuals typically experience euphoria, dizziness, sedation, and slowed reaction times (Naranjo & Bremner, 1993). Risk of fatal car accidents, falls, fires and burns, drownings, and other accidents also increases as BAC levels increase (Naranjo & Bremner, 1993). Participants had to respond affirmatively to at least two of five ($M = 3.02$, $SD = 1.25$) questions assessing awareness of drinking too much or at least one of five ($M = 1.82$, $SD = 1.91$) questions assessing recent efforts to reduce drinking. These participants were identified by screening a larger pool of 169 undergraduates who signed up to participate.

Participants ranged in age from 18 to 22 ($M = 18.82$, $SD = .96$). Caucasians constituted 92% of the sample, while 6% were Asian-American and 2% self-identified as Hispanic. On average, students reported drinking on 8.63 of the previous 30 days ($SD = 3.87$). Number of standard drinks per drinking occasion averaged 6.05 ($SD = 2.85$) and number of hours spent drinking per occasion averaged 4.31 ($SD = 3.16$).

Procedure. To recruit participants, a sign-up folder inviting students to participate in a study regarding beliefs about drinking was placed on the fifth floor lobby of Derring hall. The folder also contained a copy of the informed consent form so that students could gain a clearer understanding of the purpose of the study prior to signing up. Group screening sessions were conducted to obtain participants. Upon arriving at the session, participants were given an informed consent form with a participant number written at the bottom (see Appendix A). All other inventories participants completed had their participant number in the upper right-hand corner. The informed consent form also contained a space for participants to enter their name, address, and a phone number where they could be reached if they met criteria for participation in the second part of the study. Participants completed several questions regarding age, sex, race, and student status and responded to several items assessing quantity and frequency of drinking within the previous 30 days (Appendix B).

Participants were then given a handout that explained the meaning of blood alcohol content (BAC) and allowed them to determine how many drinks they would have to consume over a four-hour period in order to reach a .08 BAC (see Appendix C). A standard drink was defined as the equivalent one 12-ounce beer, one 4-ounce glass of wine, or one shot of 86-proof liquor. The four-

hour time period was selected because some time-frame is necessary in order to calculate BAC and there was a precedent within the literature for this time-frame (Greaves, 1993). This time period closely approximated the mean number of hours participants reported drinking per drinking occasion.

Participants also responded to ten questions assessing their awareness of drinking-related problems and their interest in changing their drinking behavior. Five questions represented the contemplation stage of the transtheoretical model (Prochaska & DiClemente, 1982; e.g. “Sometimes I think I should cut down on my drinking”) and five questions represented the action stage (e.g. “I have already started making some changes in my drinking”; Rollnick, Heather, Gold, & Hall, 1992). A copy of this inventory is located in Appendix D. Participants had to respond affirmatively to at least two of the contemplation stage questions or one of the action stage questions in order to be invited to participate in the second part of the study.

Participants then completed a modified version of the Situational Confidence Questionnaire (SCQ; Annis & Graham, 1988; Appendix E). The SCQ is a standard measure of self-efficacy for avoiding heavy drinking that has been utilized primarily in clinical populations. This inventory was included in order to compare and validate efficacy judgments as assessed by the structured interview. Participants indicated perceived confidence in their ability to resist the urge to drink above a .08 BAC level in a variety of situations on a scale ranging from 0-100 (increments of 20), with higher numbers reflecting greater confidence. They were able to accomplish this by referring to the number of standard drinks they would need to consume in a four-hour period in order to reach a .08 BAC. Responses were re-coded to a 6-point scale (i.e. 0 = 0% confidence, 1 = 20% confidence, etc.). In addition to referencing a specific number of drinks, the modification of the SCQ involved the addition of several items more specific to college student drinking situations (e.g. fraternity party) and the removal of several items which are less relevant to college student drinking (e.g. “If I passed by a liquor store”, “If I convinced myself that I was a new person and could take a few drinks”), resulting in a total of 36 items. An index of greater efficacy for avoiding heavy drinking was created by averaging the items in the scale ($\alpha = .96$).

A modified version of the Outcome Expectancy Scale (OES, Solomon & Annis, 1989) was also administered in order to provide validity evidence for aversiveness ratings obtained from the structured interview (Appendix F). This measure assessed the positive and negative consequences expected to result from a change in one’s drinking pattern on a 5-point scale (1 = strongly agree to

5 = strongly disagree) and has been used in studies of alcoholics presenting for treatment (e.g. Solomon & Annis, 1990). The 48-item version used in this study included more items specific to college students (e.g. "I would get better grades") and was composed of two subscales measuring Benefits ($\alpha = .94$) and Costs ($\alpha = .92$). Participants were then thanked for their participation and given a debriefing form (Appendix G).

Participants who met the eligibility criteria were contacted by phone and invited to schedule a time to participate in the second part of the study. Participants met with the experimenter or undergraduate research assistant individually and a structured interview was conducted. Upon arriving, individuals were given an informed consent form (Appendix H), which the experimenter orally reviewed with each participant. The meaning of BAC (blood alcohol content) levels was explained to the participant again and the number of drinks he or she would need to consume over a four-hour period in order to obtain this level was obtained for each subject (see Appendix C). The experimenter checked to ensure that the number of drinks computed at this time matched the number of drinks computed at the screening session.

Using a procedure modeled after Corcoran & Rutledge (1989), self-efficacy for avoiding consuming enough drinks to achieve a .08 BAC was assessed for increasing time periods (1 day, 1 week, 1 month, 6 months, 1 year, 5 years, forever) and self-efficacy for throwing a basketball into a hoop from increasing distances (5 ft., 10 ft., 15 ft., 30 ft., 50 ft., 75 ft., 100 ft.) was assessed. Participants indicated whether or not they could successfully accomplish each task ("yes" or "no" format). Individuals rated their self-efficacy for the drinking-related tasks first, followed by the basketball tasks.

After making the efficacy judgments, participants rated the aversiveness of each task on a seven-point Likert scale (1 = extremely unpleasant to 7 = extremely pleasant). A copy of this inventory is located in Appendix I. Indices of the aversiveness of limiting drinking ($\alpha = .89$) and of throwing a basketball into a hoop ($\alpha = .89$) were created by reverse coding and summing the ratings across the seven items for each task. Thus, higher scores indicated greater aversiveness.

Participants then were offered increasing hypothetical incentives (\$5, \$10, \$20, \$50, \$100, \$1000, \$10,000, and \$100,000) to change their efficacy judgment for the first task in each hierarchy that they indicated they could not perform. Incentives for changing the drinking-related efficacy judgments were offered first, followed by incentives for the basketball efficacy ratings. The experimenter recorded the incentive level (i.e. 1 = \$5; 8 = \$100,000) at which the person

changed his or her response from “no” to “yes” on the drinking-related task and then asked why he or she changed his or her efficacy rating at this level. This same incentive was then offered for the first basketball task which the person indicated he or she could not perform. If a participant changed his or her efficacy ratings for the drinking-related task, but did not change efficacy estimates for the basketball task with this same incentive, he or she was asked to explain why they would be able to accomplish the drinking-related task but not the basketball task for the same incentive. The experimenter then offered increasing incentives until the person changed his or her response from “no” to “yes” or the list of incentives was exhausted. The same procedure (offering incentives to the person if they would change their response from “no” to “yes”) was repeated with respect to the most difficult level of the drinking (“forever”) and basketball (“100 ft”) tasks. People who had indicated that they could perform all tasks were not offered these incentives. At the completion of the interview, participants were thanked and given a debriefing form (Appendix J).

Results

Effects of Incentives on Efficacy Judgments. Fourteen individuals out of a total sample of 50 indicated that they could limit their heavy drinking forever prior to the offer of incentives. These individuals did not differ significantly from the rest of the sample in number of drinking days, number of hours per drinking occasion, number of drinks per drinking occasion, age, year in college, ethnicity, or gender. They did, however, demonstrate greater efficacy (3.69 versus 2.78) for limiting drinking as assessed by the SCQ, $t(48) = -3.46$, $p < .005$. Some of these individuals inquired during the structured interview about whether the investigator wanted ability or willingness judgments (e.g. “Can I or do I want to?”). When this occurred, the question was simply repeated and these participants responded with what appeared to be an ability judgment. These participants were not included in any subsequent analyses because many of the questions on the structured interview were irrelevant for them (e.g. no incentives could be offered for changing efficacy ratings because they had already indicated they could perform all of the drinking-related tasks).

In the assessment of efficacy for avoiding heavy-drinking, the remaining 36 participants (72%) responded negatively to at least one level of task difficulty. Of these 36 participants, 100% increased their efficacy judgments (i.e. changed their response from no to yes) when hypothetical incentives were offered. Only 11% of these same 36 participants changed their efficacy for the

basketball task for the same incentive that had persuaded them to change their efficacy for limiting drinking. This difference in proportion altering responses for the two tasks was highly significant utilizing the McNemar test (Chi-square = 30.03, $p < .0001$).

When participants had indicated that they could not limit their drinking forever, hypothetical incentives to do so were offered. Thirty-two of thirty-six participants (89%) who originally said they could not limit drinking forever altered their response at some incentive level. Only four (12%) of these participants changed their response to the most difficult basketball task for the same incentive. This difference was also highly significant utilizing the McNemar test (Chi-square = 26.04, $p < .0001$).

Reasons for Changing and Not Changing Efficacy Judgments. In order to be able to analyze reasons for altering or not altering efficacy ratings, the open-ended responses were transferred verbatim from the structured interview forms to another coding form. Ten participants were chosen at random by the experimenter and examined in order to develop categories for the coding of responses. Based on prior research (Corcoran & Rutledge, 1989; Kirsch, 1982) and these 10 participants' responses, the four categories were labeled money, luck, lack of ability, and other. A description of these categories is located in Appendix K. Two undergraduate research assistants who were not involved in the original structured interviews then independently categorized each participants' responses. Discrepancies in categorizing were resolved through discussion between the experimenter and the two undergraduate raters.

Interrater agreement for the question of why an individual changed his or her efficacy rating for the first drinking-related task that he or she had originally indicated he or she could not perform was 83% (Kappa = .56). Interrater agreement for the question of why a participant did not change their efficacy rating for the basketball task for the same incentive level was 87% (Kappa = .75). For the most difficult items (limiting drinking forever and throwing a basketball into a hoop), interrater agreement for responses to the question of why an individual changed his or her efficacy rating for limiting drinking was 89% (Kappa = .68) and interrater agreement for the question of why an individual did not change his or her efficacy rating for the basketball task when the same incentive was offered was 82% (Kappa = .31). Although some of these Kappa estimates appear low, Kappa is based on the distribution of responses among available categories. Since it was expected and found that the vast majority of responses would fall into certain categories (e.g. money for the first open-ended question), Kappa may be overestimating the number of chance agreements.

Twenty-eight of 35 (80%) participants indicated that the monetary incentive was the primary reason that they changed their efficacy ratings for the first drinking-related task that they originally indicated they could not do. The remaining 7 (20%) responses were in the “other” category (see Figure 1). One participant was missing data for this question.

When the 36 participants were offered the same incentive four people stated that they could perform the basketball task for the same incentive. The remaining 32 participants most often cited lack of ability as the reason ($n = 23; 72\%$). Only two participants cited money (6%), while three cited luck (9%) and four (13%) responses were categorized as other (see Figure 2).

Of the 32 participants who changed their response to limiting drinking forever, five people had missing data for the reason. Of the remaining 27 participants, most cited money as the reason for the change ($n = 22$ or 81%; see Figure 3). Five participants' responses were classified into the “other” category (19%).

No participants cited money as a consideration in altering ratings for the most difficult basketball task. In fact, lack of ability was cited as the reason for not changing their efficacy ratings for the most difficult basketball task for 23 of the 28 responses to this question (82%; see Figure 4). Four participants had missing data for this question, four people cited luck (14%), and one person's response was categorized as “other” (4%).

Aversiveness and Efficacy Judgments. The sum of the aversiveness ratings across all levels of the drinking task ($\alpha = .93$) did not correlate with the positive ($r = -.03, p > .5$) scale of the Solomon & Annis outcome expectancy measure, but costs of change were associated with aversiveness ratings for limiting drinking ($r = .29, p < .05$). Efficacy as assessed by the Situational Confidence Questionnaire correlated with an index of efficacy created by adding the number of positive responses to the drinking-related tasks on the structured interview ($r = .39, p < .01$).

Table 1 presents the means and standard deviations for the aversiveness ratings of the drinking and basketball tasks. In general, higher aversiveness ratings were associated with increasing difficulty of both tasks. The sum of the aversiveness ratings across all levels of the drinking task was significantly negatively correlated ($r = -.59, p < .001$) with the difficulty of the drinking task for which the participant indicated efficacy (i.e. the number of tasks the individual indicated he or she could perform prior to the offer of incentives). As the overall aversiveness of

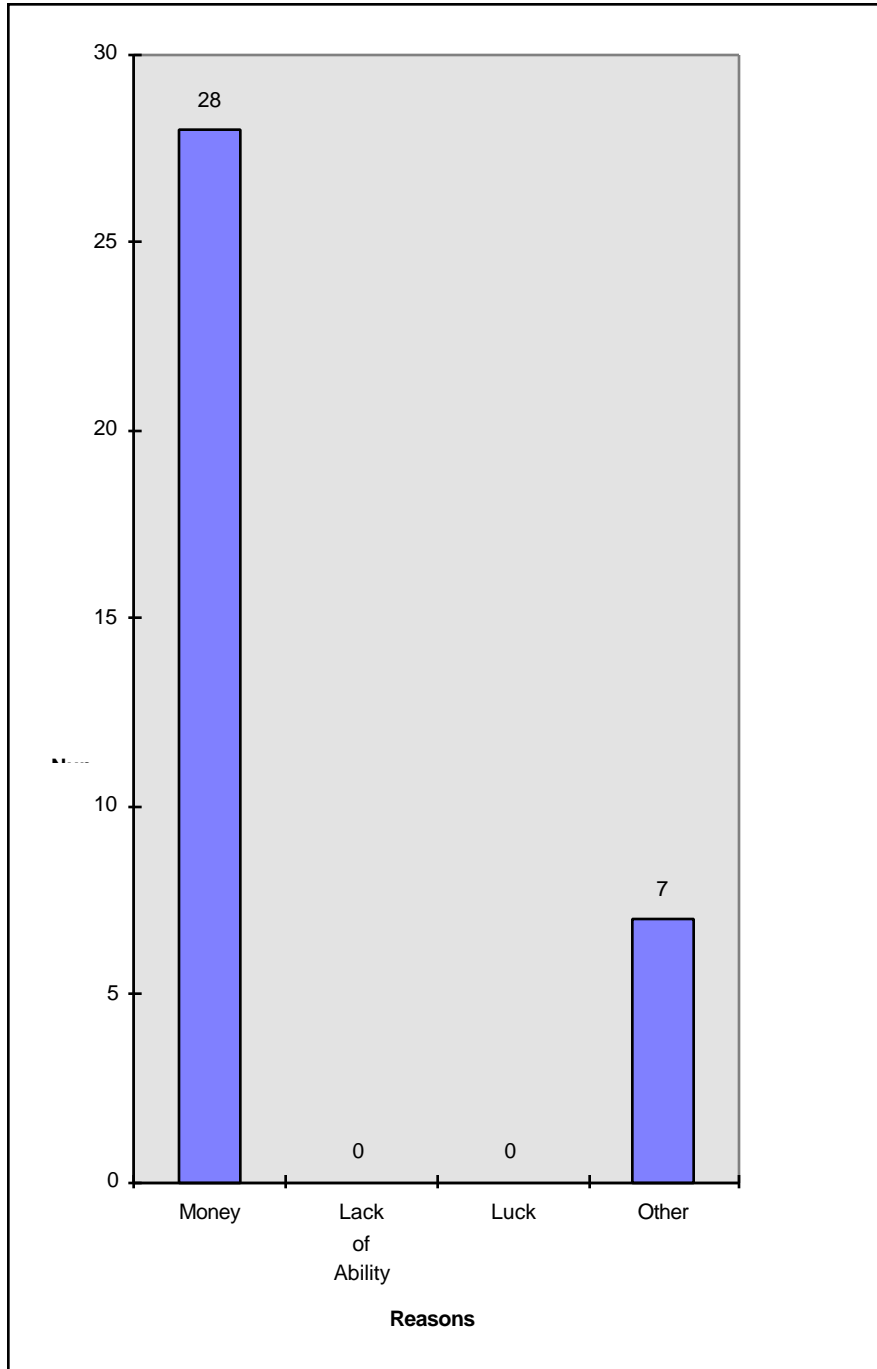


Figure 1. Reasons for Altering First No Response to Drinking Tasks

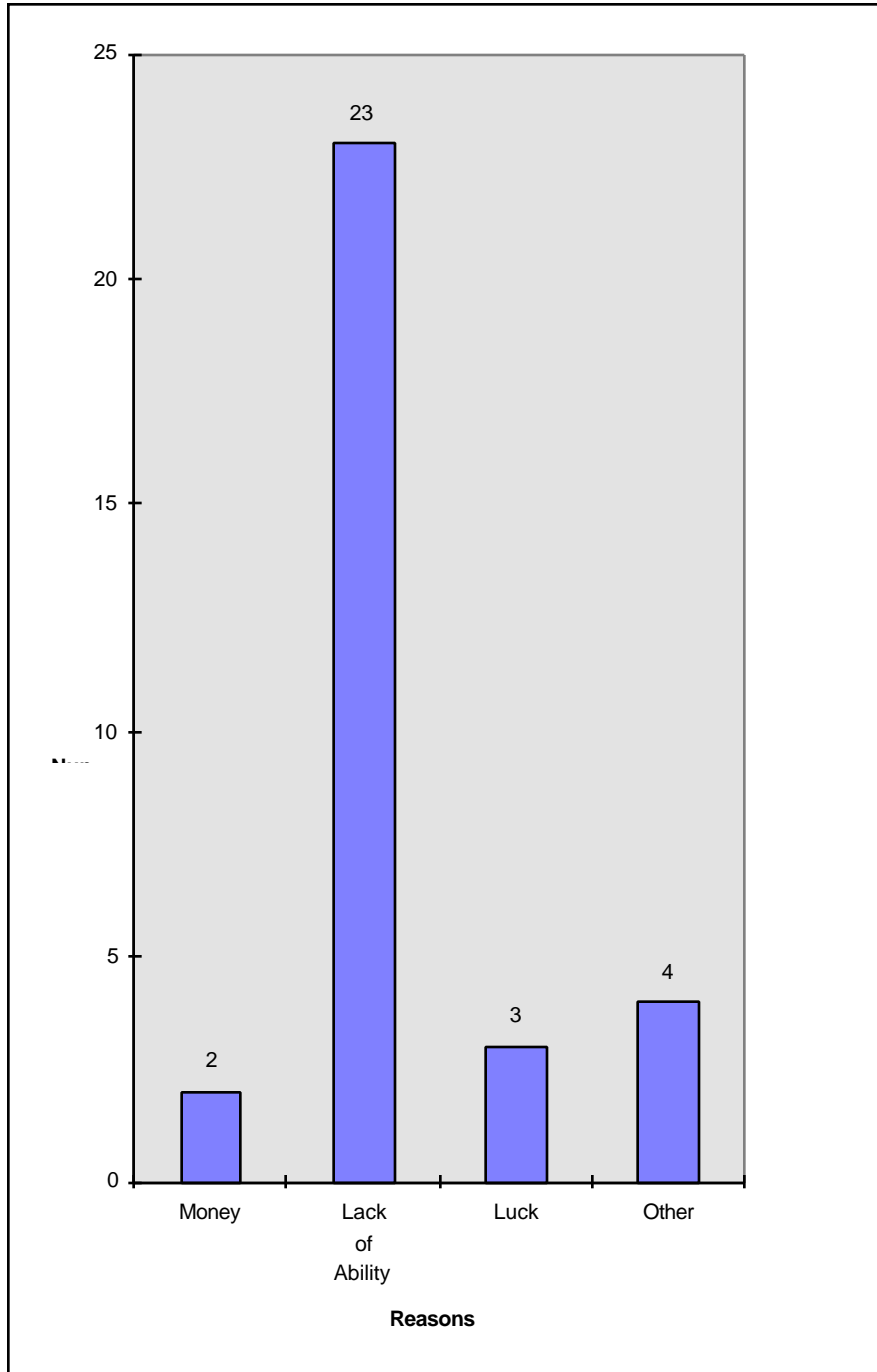


Figure 2. Reasons for Changing or Not Changing First No Response Basketball Tasks

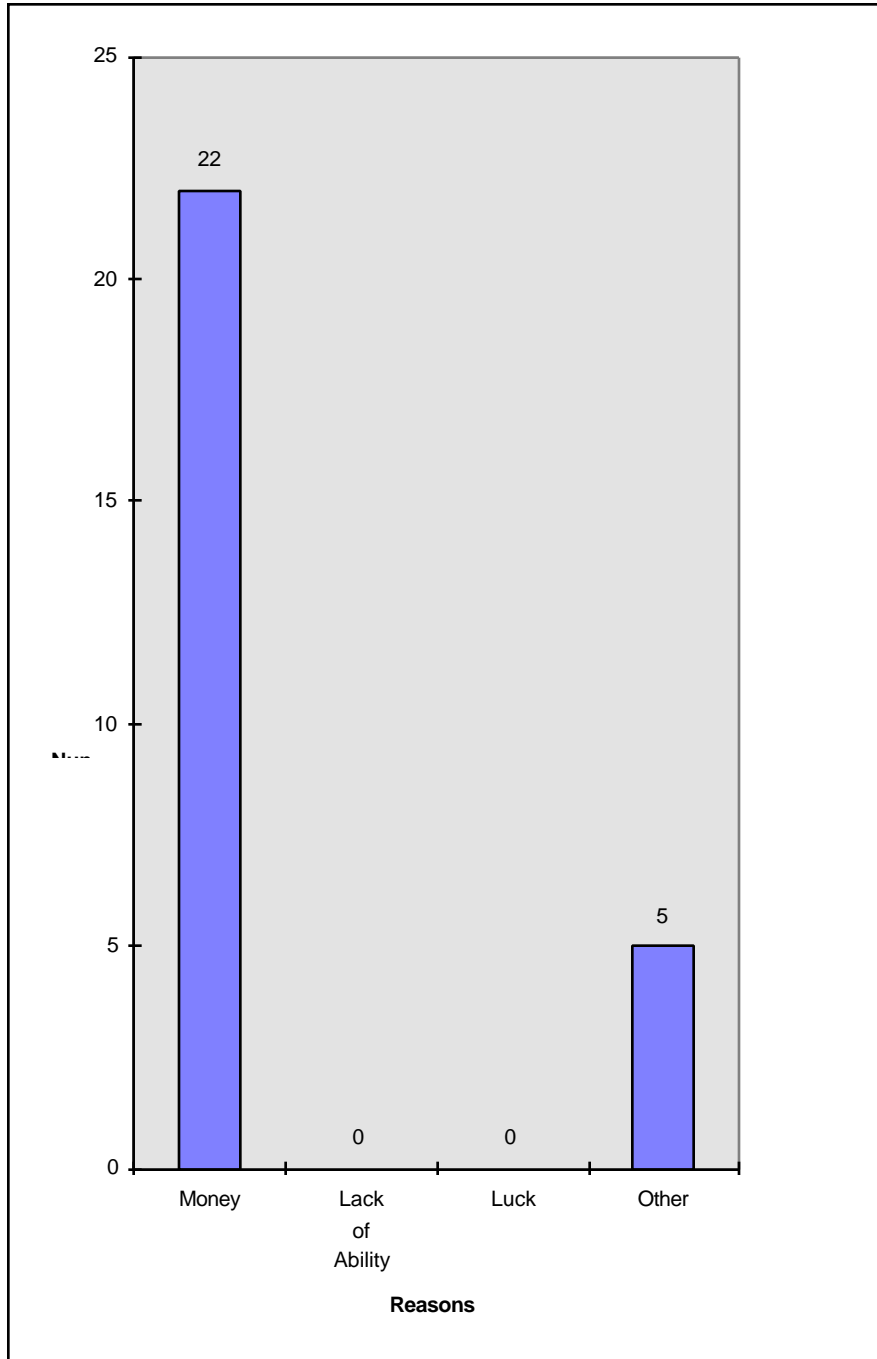


Figure 3. Reasons for Changing/Not Changing First No Response Most Difficult Drinking Task

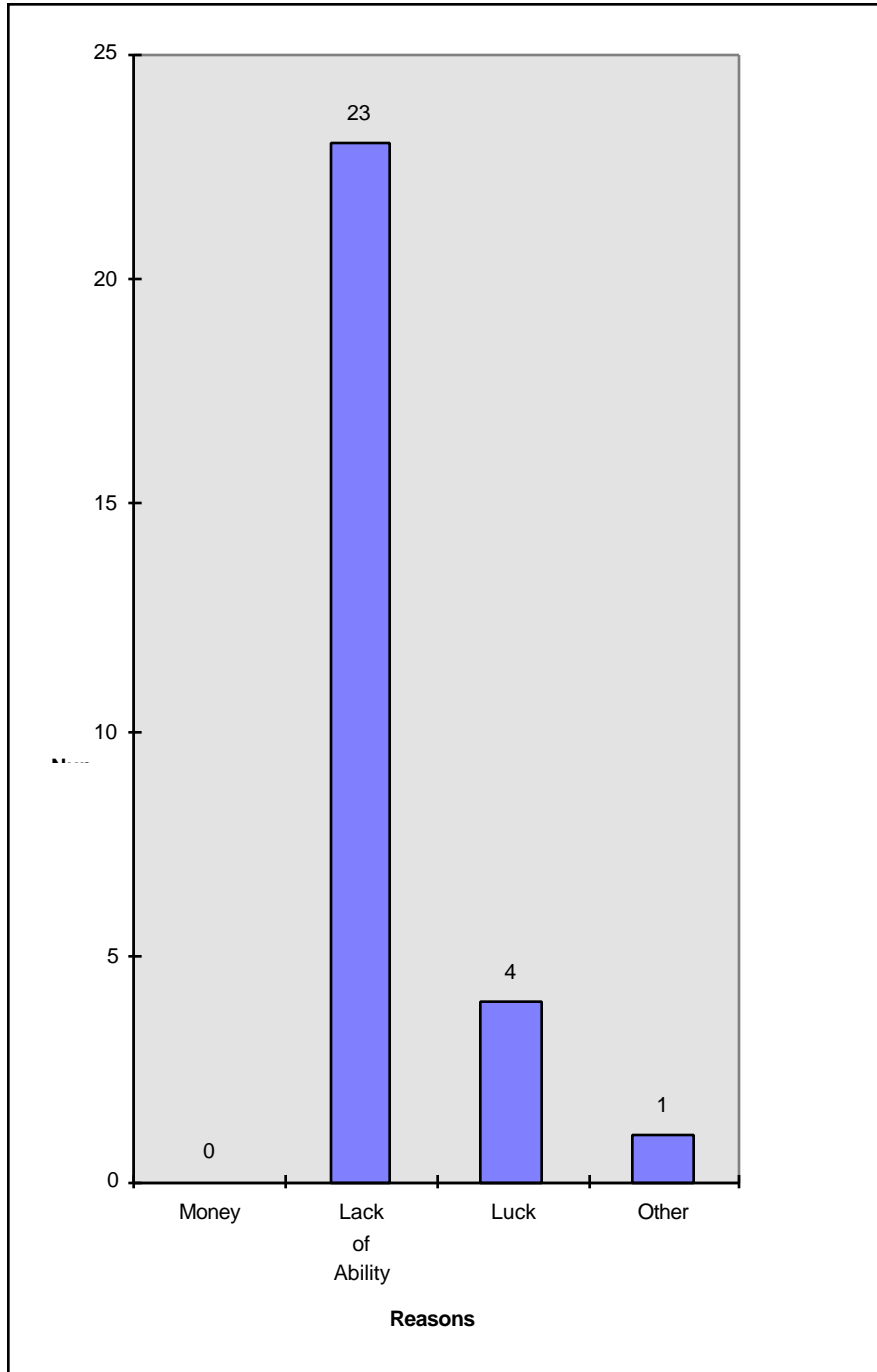


Figure 4. Reasons for Changing/Not Changing Response Most Difficult Basketball Task

the drinking tasks decreased, efficacy increased. This relationship was not observed for the basketball tasks ($r = -.22, p > .1$). The correlation between the sum of the aversiveness ratings for the drinking tasks and the amount of money required to alter efficacy ratings for these tasks was not significant ($r = .07, p > .5$; based on $n=36$). Similarly, the relationship between the sum of the aversiveness ratings for the basketball tasks and the amount of money necessary to alter efficacy ratings for the basketball task was not significant ($r = .24, p > .1$; based on $n=36$).

Discussion of Study 1

The majority of individuals changed their efficacy ratings for limiting heavy drinking when hypothetical incentives were offered, but generally failed to alter efficacy ratings for the basketball task for the same incentive. The majority of individuals made statements such as “I can make myself stop drinking, but for basketball I wouldn’t really have the ability.” The fact that participants had originally indicated that they could not limit their drinking, but changed this response with monetary incentives suggests that the offer of money either increased ability or that individuals were reporting estimates of willingness rather than ability. Responses to open-ended questions suggest that the latter option is more likely. These results suggest that college students’ efficacy for avoiding heavy drinking can be altered by changing contingencies between the behavior and the outcome. Thus, outcome expectancies may play a role in forming efficacy judgments.

Aversiveness ratings for the drinking-related tasks were not related to expected benefits of change, but did relate to expected costs of changing drinking. The standardized measure (Solomon & Annis, 1989) assesses expected consequences of changing alcohol consumption patterns (e.g. “I would feel lonelier”), whereas the index created from aversiveness ratings on the structured interview represents a sum of aversiveness ratings for limiting drinking across specified periods of time. An index of efficacy created from responses to the structured interview was related to efficacy as assessed by the Situational Confidence Questionnaire. This suggests that efficacy for limiting drinking in certain situations is related to, and yet different from, efficacy for limiting drinking for specified periods of time.

Aversiveness ratings for the drinking-related tasks correlated negatively with efficacy ratings for those same tasks, further suggesting a relationship between anticipated consequences of the behavior (i.e. not drinking heavily) and the outcome (i.e. distress). It is less clear why aversiveness

Table 1

Means and Standard Deviations for Aversiveness Ratings of Drinking and Basketball Tasks

Drinking Task Difficulty	Mean	Standard Deviation
1 day	1.78	1.20
1 week	2.52	1.49
1 month	3.78	1.87
6 months	4.76	1.95
1 year	5.14	2.00
5 years	5.62	1.89
forever	5.76	1.91
sum	29.36	10.51

Basketball Task Difficulty	Mean	Standard Deviation
5 feet	2.06	1.54
10 feet	2.30	1.68
15 feet	2.96	1.87
30 feet	3.94	2.26
50 feet	4.70	2.53
75 feet	5.02	2.54
100 feet	5.24	2.56
sum	26.22	11.88

Note. Higher scores indicate greater aversiveness. n = 50

ratings did not correlate with the amount of money needed to alter efficacy ratings. It may have been predicted that greater amounts of money would be required to change efficacy judgments for more aversive tasks. However, participants were offered monetary incentives for altering efficacy ratings for different tasks within the hierarchy. Thus, the sum of aversiveness ratings across tasks that was used in these analyses may not have been sufficiently sensitive to the specific task for which incentives were offered. It is also possible that monetary incentives are so important for college students that a certain amount of money is reason enough to change one's drinking habits, regardless of how aversiveness doing so may be. Another possibility is that the reduction of variance caused by excluding the 14 participants who originally responded affirmatively to limiting drinking forever obscured a possible relationship.

Taken together, these findings are consistent with similar studies of efficacy for approaching and handling snakes (Kirsch, 1982) and stopping cigarette use (Corcoran & Rutledge, 1989). They challenge Bandura's (1986) prediction that outcome-related information does not influence efficacy judgments.

Study 2

The second study was designed to expand upon the results of Study 1 by clarifying how willingness and ability ratings might differ in terms of their relationship to outcome expectancies and actual drinking practices. The question of whether students are substituting "can't" for "won't" when making efficacy judgments was addressed by administering two self-efficacy questionnaires in two different formats. The formats differed in the wording of the directions, such that one asked specifically for ability estimates and one asked specifically for willingness estimates. If participants distinguished between ability and willingness then ratings on the two types of questionnaires should differ significantly. Further, the predictive power of each of these constructs in relation to future drinking should differ. If willingness judgments represent a more complete synthesis of both ability judgments and outcome expectancies, then willingness ratings should predict a greater amount of variance in future drinking than pure ability ratings.

Hypotheses

It was predicted that ability estimates would be higher than willingness ratings because college students are likely to believe in their ability to control their drinking. They also experience

significant social pressure to drink and value the positive effects of consuming alcohol. Thus, their willingness to control their drinking is likely lower than their perceived ability. It was also predicted that willingness ratings would predict a significantly greater amount of the variation in both quantity and frequency of future drinking than efficacy ratings. Efficacy and outcome expectancies were hypothesized to be significant predictors of future drinking. Additionally, willingness ratings were predicted to be more related to outcome expectancies than efficacy ratings because willingness may represent a more complete synthesis of ability judgments and expected consequences of actions.

Method

Participants. Of 140 students screened, 64 undergraduate males ($n = 29$) and females ($n = 35$) recruited from psychology courses at Virginia Polytechnic Institute and State University met eligibility criteria. As in the first study, participants were required to have reached a .08 BAC at least once within the previous month and to demonstrate at least some interest in altering their drinking patterns, as indicated by endorsing at least two contemplation stage statements or one action stage statement. The mean number of contemplation stage questions answered affirmatively was 2.80 ($SD = 1.43$) and the mean number of action stage questions answered affirmatively was 1.80 ($SD = 1.73$). Please refer to Study 1 and Appendix D for a description of questions assessing these two stages. Students ranged in age from 18 to 23 ($M = 19.13$, $SD = 1.25$). Ethnicity of the participants was as follows: Caucasian = 89.1%, Asian-American = 6.3%, Hispanic = 1.6%, and Other = 1.6%.

On average, students had reached a .08 BAC 10.59 times within the previous 60 days ($SD = 8.15$). They consumed an average of 6.34 standard drinks per drinking occasion ($SD = 2.65$). Average number of hours spent drinking per drinking occasion was 3.49 ($SD = 1.07$).

Procedure. Participants were recruited by posting a sign-up sheet in the fifth floor lobby of Derring Hall. The sign-up sheet requested participants to help provide information regarding college students' drinking patterns and beliefs and specifically requested "Drinkers Only" in order to discourage large numbers of abstainers from signing up. Included in the file with the sign-up sheet was a copy of the informed consent form so that participants could better understand the procedures utilized in the study prior to signing up for it.

Participants were administered several self-report inventories in groups of approximately 30 people. Upon arriving, individuals were given an informed consent form with a participant number at the end of it (Appendix L) and the experimenter reviewed the informed consent form orally.

Demographic information, including participant gender, age, race, and student status, was also collected (see Appendix M).

As most of the inventories administered required an understanding of the meaning of blood alcohol content (BAC) and how many drinks would be needed to reach a BAC of .08, a handout was given to each participant. This handout explained BAC and allowed the individual to calculate the number of standard drinks he or she would need to consume over a four-hour period to reach a .08 BAC (see Appendix C). This number of drinks was later utilized in answering questions which included references to a .08 BAC. Participants also answered the five questions representing the contemplation stage of change and five questions representing the action stage (Appendix D).

Next, two outcome expectancy measures were administered. One of the outcome expectancy measures assessed the expected effects of consuming enough alcohol to reach a .08 BAC, while the other assessed the expected consequences of changing one's alcohol consumption. Next, the timeline follow-back procedure (Sobell, Sobell, Klajner, Pavan, & Basian, 1986) was utilized to obtain information on participants' usual drinking patterns. This procedure involved using a calendar to provide retrospective estimates of alcohol consumption over a specified time period. In this case, a 60-day time period was utilized. Instructions for completing the calendar include hints such as using one's appointment book in order to remember days of drinking or thinking about one's usual pattern of drinking (e.g. Friday or Saturday nights).

Finally, two efficacy questionnaires (i.e. situational and coping) and two willingness questionnaires (i.e. situational and coping) were administered. Two presentation orders of these inventories were counterbalanced across participants. Half of the participants were randomly assigned to receive willingness versions of each questionnaire first and half received the ability versions first. Within each set of ability or willingness measures, the situational measure was always administered first. Once the student completed the first inventory, the experimenter gave him or her the next inventory to complete. This was done so that the purpose of counterbalancing the orders was not negated by individuals viewing the next inventories in the series. A listing of the two orders can be found in Appendix N. All participants were thanked for their participation and given a debriefing form (Appendix O).

Approximately 30 days from the date of the first questionnaire session, eligible participants were contacted via phone and a timeline follow-back procedure was utilized to gather information on their quantity and frequency of alcohol consumption during the follow-up period.

Measures. Self-efficacy in relation to alcohol consumption has typically been measured by asking people to rate their perceived confidence that they “would be able to resist the urge to drink heavily” in a variety of situations (Annis, & Graham, 1988). Because situational variables have been shown to be important predictors of relapse (e.g. Marlatt & Gordon, 1985) and self-efficacy is theoretically specific to the situation or task encountered, an individual’s self-efficacy may vary across different situations. However, it may also be important to consider self-efficacy in relation to specific skills for moderating drinking, as well as for different situations (Greaves, Stephens, & Curtin, 1992). Thus, the present study utilized both methods for assessing self-efficacy.

One self-efficacy measure was the modified version of the SCQ (Annis & Graham, 1988) used in study 1. Participants indicated perceived confidence in their ability to resist the urge to drink above a .08 BAC level in a variety of different situations (e.g. “how confident are you that you are able to resist drinking above a .08 BAC”) on a 6-point scale ranging from 0-100 (increments of 20), with higher numbers reflecting greater confidence. Participants completed the SCQ twice, rating their perceived confidence in their ability to avoid heavy drinking once (Appendix P; $\alpha = .96$) and rating their willingness to avoid heavy drinking in each situation once (Appendix Q; $\alpha = .96$).

A coping-efficacy questionnaire consisting of 36 items representing behavioral skills for avoiding excessive alcohol consumption (e.g. confining drinking to certain times of the day, setting limits on the number of drinks consumed per sitting) was also utilized. These items corresponded to coping strategies frequently used by college students (Werch & Gorman, 1986). Participants rated their perceived ability to use these strategies to avoid drinking above a .08 BAC on a scale from 0 to 100 (increments of 20). In a previous study, an earlier version of this scale was shown to have an alpha coefficient of .93 (Greaves, Stephens, & Curtin, 1992). As with the SCQ, individuals rated their ability to use the strategies once ($\alpha = .95$) and their willingness to use these strategies once ($\alpha = .95$). Copies of both forms are located in Appendices R and S, respectively.

Participants also completed an alcohol outcome expectancy scale which measures expectancies about the effects of alcohol on the individual (Leigh & Stacy, 1993). This 34-item inventory required students to rate how likely it was that the effect would happen to them if they consumed enough alcohol to have a .08 BAC on a scale ranging from 1 (No chance) to 6 (Certain to Happen). The scale included both positive (19 items, $\alpha = .91$) and negative (15 items, $\alpha = .85$) effects and individual items were averaged in order to construct these scales for data analysis.

Construct validity has been demonstrated by correlations between the inventory and alcohol use (Leigh & Stacy, 1993). A copy of this questionnaire is located in Appendix T.

A modified version of the Outcome Expectancy Scale (Solomon & Annis, 1989) was employed to measure positive (30 items, $\alpha = .94$) and negative (18 items, $\alpha = .92$) consequences expected to result from a change in one's drinking pattern on a 5-point scale ranging from strongly agree(1) to strongly disagree (5). This scale was also utilized in Study 1. Individual items were averaged for each of the subscales in order to compose indices of positive and negative expectancies. The original scale included two factors measuring Benefits and Costs . The 48-item version used in this study included more items specific to college students (Appendix U).

Measures of prior drinking were collected utilizing a timeline follow-back procedure at the initial assessment and again at the 30 day follow-up assessment. This procedure involved giving participants a calendar and prompting the use of memory aides (e.g. dates of parties, when bands played, and test dates) to help them recall their drinking. Students were instructed to enter the number of drinks consumed, the type of drinks consumed, and the number of hours spent drinking for each day on which they consumed alcohol of any type. This procedure has demonstrated high test-retest reliability across several different populations, including college students (Sobell & Sobell, 1991). An example of a calendar and instructions for its completion are located in Appendix V. This measure was utilized to create indices of the number of drinking occasions, number of drinks per occasion, number of hours spent drinking per drinking occasion, and peak BAC level for each drinking occasion. Since data on exact weight was not collected, the midpoint of each of the weight ranges on the table for calculating number of drinks required to reach a .08 BAC (see Appendix C) was utilized for weight. This weight, along with participant gender, was entered into a computer program (BACCUS) when calculating peak BAC levels for a drinking episode.

Results

Order and Form Effects. Means and standard deviations for all measures are shown in Tables 2 and 3. In order to determine whether order of presentation of the questionnaires affected ratings of ability and willingness, separate 2 (order) x 2 (form:ability vs. willingness) mixed model analyses of variance were performed on the situational and coping scales. Order was a between-

subjects factor created by randomly assigning half of the participants to receive the ability version of the questionnaires first and the other half to receive the willingness versions first.

The within-subjects factor represented the comparison of ability and willingness forms of each questionnaire.

There were no significant main effects of order on either the situational, $F(1,61) = .68, p > .4$, or coping, $F(1,62) = .37, p > .5$, measures. The interaction of order and form was not significant for the situational or coping ($F(1,62) = 1.26, p > .25$) measures. However, for the situational measures, the interaction of order and form demonstrated a tendency for willingness estimates to be higher when the ability measures were administered first than when the willingness versions were administered first, $F(1,61) = 3.61, p < .07$ (see Table 4).

The above analyses revealed main effects of form on both the situational, $F(1,61) = 3.44, p < .07$ (nonsignificant), and coping, $F(1,62) = 4.06, p < .05$, questionnaires. On both types of measures, ability ratings were greater than willingness ratings, although the difference did not reach conventional levels of significance on the situational measure (see Table 2).

Drinking Quantity and Frequency. As shown in Table 3, participants in this sample consumed large quantities of alcohol frequently. It should be noted that only 52 people participated in the 30-day follow-up. Therefore, original measures are based on a sample with $n = 64$, but follow-up is based on a sample with $n = 52$. The 12 people who did not participate in the follow-up did not differ from the 52 people who did participate in the follow-up on any of the baseline measures other than ethnicity. All 12 who did not complete the follow-up reported that their ethnicity was white. This is consistent with the fact that 89% of the sample was Caucasian. Because baseline data were based on a 60-day period, while follow-up data were only for a 30-day period, the means displayed in Table 3 for baseline data have been divided by 2 in order to make it possible to compare means for the two time periods. As expected, baseline quantity and frequency of drinking was highly correlated with drinking during the follow-up period (see Table 5).

Correlations between ability and willingness ratings and subsequent drinking during the follow-up period revealed no significant relationships (see Table 6). Only coping willingness approached significance in that it correlated negatively with number of times above a .08 BAC in the 30 day follow-up ($r = -.25, p < .1$). Positive expectancies for the effects of consuming alcohol to a .08 BAC level were significantly correlated with number of drinking occasions at the 30 day follow-up ($r = .30, p < .05$) and positive expectancies for changing one's pattern of drinking were

negatively correlated with number of drinking occasions ($r = -.31, p < .05$). Thus, as participants saw more positive effects of using alcohol and fewer benefits associated with changing their use patterns, they continued to drink more frequently. Negative expectancies for the effects of consuming alcohol to a .08 BAC level approached having a significant relationship to average number of drinks per occasion ($r = -.26, p < .1$), but in general there was little evidence that any of the expectancy measures predicted quantity indices of drinking.

Relationships of Ability, Willingness, and Expectancies. Given the lack of support for the hypothesis that ability and willingness ratings would predict future drinking, hypotheses concerning their relative predictive power were not further investigated. Instead, relationships among ability, willingness, and the various types of outcome expectancies were explored. As can be seen in Table 7, ability and willingness judgments were significantly, but modestly correlated with each other.

Table 2
Means and Standard Deviations for Expectancy, Willingness, and Ability Measures

Variable	Mean	Standard Deviation
Situational ability	3.49	1.20
Situational willingness	3.17	1.11
Coping ability	3.75	1.00
Coping willingness	3.45	1.01
Positive alcohol expectancies	4.39	.61
Negative alcohol expectancies	3.20	.67
Benefits of change	2.98	.61
Costs of change	2.78	.72

Note. n = 63 or 64 (depending on missing data)

Table 3
Means and Standard Deviations of Drinking Measures

Variable	Baseline		Follow-up	
	Mean	Standard Deviation	Mean	Standard Deviation
Number of drinking occasions	8.67	4.20	7.27	5.05
Number of drinks per occasion	6.34	2.65	6.41	3.33
Number of times exceeded .08 BAC	5.29	4.08	4.40	3.92

Note. For baseline, n = 64. For follow-up, n = 52. Baseline data are have been divided by 2 to make the means comparable.

Table 4

Means for Situational Measures by Order of Presentation

Measure	Willingness first	Ability first
Situational ability	3.57	3.41
Situational willingness	2.91	3.42

Note. n = 63 or 64 (depending on missing data)

Table 5

Correlations of Baseline and Follow-Up Drinking

Variable	# of drinking occasions - baseline	Average # of drinks per occasion - baseline	# of times above .08 BAC - baseline
# of drinking occasions at follow-up	.72***	.22	.57***
Average # of drinks per occasion at follow-up	.39**	.68***	.48***
# of times above .08 BAC at follow-up	.74***	.46***	.83***

*p < .05, **p < .01, ***p < .005

For coping measures, the correlation between ability and willingness was $.29, p < .05$. Situational ability judgments correlated $.33$ with situational willingness judgments, $p < .01$. In contrast, the two types of willingness measures were strongly correlated with each other, as were the two types of ability measures. Willingness judgments on the coping skills questionnaire correlated $.67$ with willingness judgments on the situational form, $p < .001$. Situational and coping ability correlated $.84, p < .001$. This pattern of findings indicates both convergent and discriminant validity for the measurement of efficacy and willingness constructs.

Coping ability judgments were negatively related with expectancies for the benefits of a change in one's drinking pattern ($r = -.27, p < .05$) and were also negatively related to expectancies for the costs of changing drinking ($r = -.30, p < .05$). Thus, increased coping ability was associated with fewer expected benefits and fewer expected costs of changing drinking. Increased situational ability was associated with fewer expected costs of changing drinking ($r = -.24, p < .1$), although the relationship did not quite reach conventional levels of significance.

Increased coping willingness was associated with fewer positive alcohol expectancies ($r = -.33, p < .01$). Increased situational willingness related to fewer negative alcohol expectancies ($r = -.45, p < .001$) and fewer positive alcohol expectancies ($r = -.37, p < .005$). Situational willingness was also related to expected costs of changing drinking ($r = -.37, p < .005$).

The different types of outcome expectancies appeared to be related to each other. More positive alcohol expectancies were associated with more negative alcohol expectancies ($r = .44, p < .01$). More negative expectancies for changing drinking were related to more negative alcohol expectancies ($r = .32, p < .05$), more positive alcohol expectancies ($r = .43, p < .001$), and more expected benefits of changing drinking ($r = .50, p < .001$). Negative alcohol expectancies correlated nonsignificantly with the expected benefits of changing drinking ($r = .25, p < .1$).

In order to more fully explore the relationships among willingness, ability, and expectancies, a principal components analysis was conducted on the efficacy, willingness, and outcome expectancy measures. Three components had eigenvalues over 1. Examination of the scree plot also indicated that a three-component model fit the data. A four-component model was also examined, but the increase in explained variance was minimal, the eigenvalue for the fourth component was less than 1, and the resulting component loadings were less interpretable (e.g. some

Table 6
Correlations of Drinking with Ability, Willingness, and Expectancies

Variable	# of drinking occasions - follow-up	Average # of drinks per occasion - follow-up	# of times above .08 BAC - follow-up
Coping ability	.04	.05	-.03
Coping willingness	-.21	.03	-.25
Situational ability	-.15	.22	-.03
Situational willingness	-.02	.14	-.11
Benefits of change	-.32*	-.10	-.18
Costs of change	.10	.07	.27
Positive effect expectancies	.30*	-.05	.23
Negative effect expectancies	-.05	-.26	.01

Note.All correlations based on n = 51 or 52 (depending on missing data)

* $p < .05$

Table 7

Correlations among Ability, Willingness, and Expectancies

Variable	Coping ability	Situational ability	Coping willingness	Situational willingness	Benefits of change	Costs of change
Coping ability	-					
Situational ability	.84***	-				
Coping willingness	.29*	.20	-			
Situational willingness	.23	.33**	.67***	-		
Benefits of change	-.28*	-.17	-.03	-.17	-	
Costs of change	-.30*	-.24	-.18	-.37**	.50***	-
Positive alcohol expectancies	.04	.05	-.33**	-.37**	.10	.43***
Negative alcohol expectancies	-.08	-.08	-.18	-.45***	.25	.32*

Note. Correlations based on n = 62-64, based on missing data

* $p < .05$, ** $p < .01$, *** $p < .005$

Table 8

Principle Components Analysis

Variable	Factor 1 expectancies	Factor 2 ability	Factor 3 willingness
Coping ability	-.16	.93	.07
Situational ability	-.10	.92	.11
Coping willingness	.19	.21	.84
Situational willingness	-.16	.26	.83
Benefits of change	.85	-.15	.12
Costs of change	.76	-.19	-.29
Negative alcohol expectancies	.48	.09	-.53
Positive alcohol expectancies	.36	.32	-.64

Note. n = 63 or 64 (depending on missing data)

items loaded almost equally on more than one component). Table 8 shows the three resulting components and their loadings. The three components accounted for 74% of the variance. The first component was labeled outcome expectancies because benefits of change and costs of change expectancies loaded the highest on this component. Both positive and negative effect expectancies also loaded moderately on the expectancy factor. Both situational and coping ability loaded on the second component. The third component was defined by situational and coping

Discussion of Study 2

Ability judgments for limiting drinking were higher than willingness judgments among heavy-drinking college students. This finding is consistent with the original hypothesis that college students are likely to believe in their ability to limit drinking, but be less willing to do so because of peer pressures and the traditional benefits associated with drinking among college students (e.g. parties, friends). Unlike individuals diagnosed with alcohol dependence who often report feeling unable to limit their drinking, the participants in this study probably did not feel a loss of control

over their drinking. The correlations among situational and coping willingness and ability ratings suggests that ability ratings and willingness ratings are distinct, whether assessed using the coping or the situational measure. Ability and willingness judgments also formed separate components in the principle components analysis, but there was some evidence that willingness ratings were related to the strength of alcohol effect expectancies. Taken together, these results suggest that willingness and ability represent distinct types of judgments.

In contrast to the originally hypothesized relationships, ability and willingness judgments did not predict future drinking. These results conflict with most of the published literature relating efficacy judgments and behavior (e.g. Evans & Dunn, 1995; McKay, Maisto, & O'Farrell, 1993; Sitharthan & Kavanagh, 1991; Solomon & Annis, 1990). These studies have generally utilized alcohol-dependent persons or others who have sought treatment for their drinking. College students may differ from this population in several ways. First, they are likely to have been drinking for a shorter period of time and to have experienced fewer severely negative consequences related to their drinking. Second, they may be less likely to view any experienced negative consequences as problematic. Missing a few classes due to hangovers or other negative consequences may be viewed as minimal in comparison to negative consequences of drinking experienced later in life (e.g. losing your job, spouse, children). Additionally, students may view

college as a period in their life during which they are permitted (if not expected) to “party”, which may include excessive drinking. They may be less likely to view their drinking patterns as problematic because they do not expect to continue these patterns after graduation (Greaves, 1996).

Two previous studies conducted at Virginia Tech. utilizing heavy-drinking college student samples (Greaves, 1996; Curtin, 1996) found inconsistent support for the predictive value of efficacy judgments. Greaves (1996) found that situational efficacy judgments for limiting drinking to below a .05 BAC significantly predicted frequency of moderate drinking at the one-month follow-up. However, efficacy only predicted an additional 4% of variance in future moderate use. Curtin (1996) found that coping efficacy for utilizing specific strategies to limit drinking to below a .08 BAC level significantly correlated with number of heavy-drinking occasions at the one-month follow-up, although it was not a significant predictor when combined with other variables in a regression analysis. Her results also indicated that situational efficacy judgments were not consistently related to future drinking (Curtin, 1996).

The methods utilized in the present study share similarities with both of these studies. However, there are also some differences. Participants in both of those studies were recruited through advertisements offering assessment and/or intervention related to alcohol use. Additionally, participants were required to evidence problems related to alcohol use in addition to obtaining a .08 BAC at least 3 times within the previous month. Thus, students in those samples may have been more problematic drinkers than students in this sample. If people are experiencing more problems related to their drinking, they may be more motivated to change their drinking and efficacy may, therefore, be a better predictor. However, it should be noted that participants in this study were required to express at least some interest in reducing their drinking. Comparisons of drinking-related problems experienced between the present study and the two mentioned above is not possible, as problems related to drinking were not assessed in this study. Different methods of assessing motivation for change were also utilized in each of the studies.

Positive alcohol expectancies did relate to future frequency of drinking, but there was little evidence that they were useful in predicting future quantity of drinking. This also contrasts with some of the literature on the predictive utility of expectancies (e.g. Grube, Chen, Madden, & Morgan, 1995; Leigh, 1987). Studies examining the differential prediction of quantity and frequency have tended to use disparate measures which assess different types of expectancies (e.g. only positive or both positive and negative) and different levels of consumption (e.g. any alcohol or

2-3 drinks or enough to be intoxicated), making comparisons difficult (Leigh, 1989a; Mooney, Fromme, Kivlahan, & Marlatt, 1987; Southwicke, Steele, Marlatt, & Lindell, 1981). This study assessed expectancies for the effects of consuming alcohol with specific reference to a .08 BAC level. Additionally, the costs and benefits measure of outcome expectancies utilized in this study did not reference a .08 BAC level. It is possible that the measures utilized or even the consistency among measures utilized in this study affected the obtained results.

It is also possible that drinking quantity and frequency and/or expectancy judgments were too restricted in variance to demonstrate the relationships reported in the literature. Many of the studies in which relationships have been found have also included light or moderate drinkers (e.g. Greaves, 1993). Thus, alcohol effect expectancies may be more useful in discriminating between light- and heavy-drinkers, but less useful in discriminating among degrees of heavy-drinkers.

Results regarding the correlations between expectancies and willingness or ability judgments were generally consistent with expected relationships. Willingness and ability to reduce drinking tended to decrease as expected costs of changing drinking increased and as positive expectancies for the effects of heavy-drinking increased. These findings suggest that ability and willingness judgments are related to both types of expectancies. However, there were some relationships in the correlation matrix that appeared inconsistent. For example, when negative effects of drinking were expected, willingness and ability to reduce drinking tended to decrease rather than increase. Similarly, both costs and benefits expected to result from changing drinking were associated with decreased coping ability.

The principle components analysis clarified some of these findings. It demonstrated that all four expectancy measures were related to the same component, labeled expectancies, and that the 4 measures loaded positively on that component. This finding is consistent with other reported relationships between positive and negative expectancies among heavy-drinkers. Rather and Goldman (1994) utilized multidimensional scaling and hierarchical clustering to map the organization of expectancies in memory. Results indicated that heavier drinkers tend to hold more expectancies and that their memory networks tend to be more tightly organized, with positive expectancies accessed first and negative expectancies less easily accessed in memory (based on Euclidean distances). Werner, Walker, & Green (1993) measured positive and negative expectancies, as well as the subjective values of expectancies, in college students. Their results suggested that heavier-drinking college students held more positive and negative expectancies in

general, but that they were less concerned (valued less or placed less importance) on the negative consequences of drinking. Subjective values were not assessed in this study, but it is highly possible that the heavy-drinking participants in this study held more positive and negative expectancies in general, but viewed negative alcohol expectancies as less important.

The marginal order effect, that situational willingness tended to be higher when the ability versions of the efficacy measures were administered first, may also be consistent with the distinction between willingness and ability judgments. If participants in this sample can be considered to be particularly attuned to the social aspects of drinking (as discussed earlier), than it would be expected that any reactivity to order should be demonstrated more on a measure assessing efficacy for limiting drinking in social situations (situational) than on a measure assessing efficacy for using specific coping skills (coping) to limit drinking. The difference in ratings would be expected on the willingness measure rather than the ability measure because ability should theoretically remain stable. Willingness would be expected to be higher when the ability measures are administered first because participants would have been alerted to the fact that they were answering the same questions. The only difference in the questionnaires was the wording in the directions. Thus, participants receiving the ability version first might respond the way they always respond to such questions, possibly not fully discriminating between their willingness and ability judgments. Then they receive the willingness version and immediately search for the difference between the two questionnaires. Realizing that it is ability versus willingness wording in the instructions, they proceed to lower their ratings, perhaps thinking “I am less willing to limit my drinking”. Participants receiving the willingness version first may have already noted the specific wording of the directions, as “willing” is a less commonly used term in everyday conversation. It cannot be concluded that this explains the order effect or that the order effect itself is supporting evidence for the distinction between willingness and ability because the order effect did not reach conventional levels of significance. However, it may be useful to further explore this finding in future studies.

In summary, past drinking appeared to be the best predictor of future drinking and ability, willingness, and expectancies were not significant predictors of future drinking. Results suggest that ability and willingness are distinct constructs and that willingness is related more to beliefs about positive and negative effects of drinking than is perceived ability to avoid drinking. Heavy-drinking college students perceive themselves as more able than willing to limit their drinking.

General Discussion

Bandura (1986) proposed that efficacy represents ability judgments and that outcome expectancies do not contribute to the formation of these judgments. Kirsch (1982) argued that efficacy may sometimes represent a combination of ability judgments and outcome expectancies. The strengths of the present studies lay in their potential to clarify the meaning of self-efficacy judgments by identifying the relationships between willingness and ability judgments, outcome expectancies, and future drinking. However, the results of the two studies appear conflicting. The results of Study 1 suggested that heavy-drinking college students responded with willingness judgments when asked if they could limit their drinking. Study 2 suggested that heavy-drinking college students do distinguish between ability and willingness when asked to make judgments about limiting drinking.

The differences between the results of the two studies could be due to differences in methods of assessing efficacy. For example, Study 1 utilized a structured interview, while questionnaires were used in Study 2. In daily conversation, people often substitute “can’t” for “won’t”, but people may be more careful, thorough, and alert to differences between ability and willingness judgments when presented with written questions. Responses to the questions in Study 1 also suggested that some people may have been discriminating between willingness and ability judgments. These individuals inquired whether the examiner was asking if they could limit drinking or if they would limit drinking.

The specific use of the word “willing” in the questionnaires may also have affected the results by alerting participants to the difference in the types of judgments. If this were true, one would have expected situational willingness judgments to be higher when ability was assessed first, as the marginal order of presentation effect in study 2 suggested. This would not have been expected in Study 1, as only one wording of the questions was presented.

Additionally, efficacy for limiting drinking in Study 1 was assessed by asking individuals whether or not they could limit drinking for specified periods of time. In Study 2, efficacy was assessed by asking if they could limit drinking in specific situations, but no time period was specified. Thus, participants could have thought this question referred to limiting drinking once in the specified situation or any time they encountered that situation for the rest of their lives. Perhaps when people are asked (specifically) to limit drinking or any other behavior which is enjoyable for

specified time periods, willingness is activated. When asked for efficacy judgments for specific situations, willingness may not be activated (unless manipulated in the wording of the question) as these situations are more hypothetical.

Overall, the studies support both the proposal that efficacy measures assess ability and the proposal that efficacy measures assess willingness. People can respond with judgments that represent either ability or willingness, but the method of assessment utilized and the specific questions asked have a large impact on individuals' judgments. This highlights the need for consistent and appropriate measurement of constructs in research, as well as in applied settings.

Future research could further examine the relationships between ability, willingness, and outcome expectancies by expanding on the results of this study and previous studies, while correcting some of the weaknesses. The relative predictive validity of willingness or ability and outcome expectancies has not yet been clarified within a college student population. It may be that efficacy is a more useful predictor of future drinking when motivation for change is high, but further research is needed. Further research on the use of outcome expectancies in predicting future quantity and frequency of drinking is also needed.

Assessing both ability and willingness utilizing the same questions in spoken and written language could clarify the influence of method of question presentation. It may also be helpful to manipulate wording of questions with a continuum of drinkers (e.g. abstainers, light drinkers, moderate drinkers, heavy-drinkers, alcohol dependent persons) and to utilize diverse samples, rather than focusing only on college students. Replication of the finding that willingness to limit drinking is more related to outcome expectancies than ability is also needed, as this is the first study to specifically examine these relationships.

These present studies have demonstrated that individuals can distinguish between ability and willingness judgments. Preliminary support for the distinction between ability and willingness has been provided. Support has also been demonstrated for the hypothesis that willingness represents a synthesis of ability and outcome expectancies. They have also served to highlight the importance of careful measurement.

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Appendix A

Informed Consent for Participants of Investigative Projects

Title of Project: Self-Efficacy

Investigators: Felicity L. James & Robert S. Stephens

1. Purpose of this Research/Project:

You are invited to participate in a study designed to investigate college students' beliefs about alcohol and drinking patterns. The study will involve approximately 40 participants in all, although a greater number will be involved in this part of the study in order to obtain 40 for the second part of the study.

2. Procedures to be Followed:

To accomplish the goals of this study, you will be asked to donate approximately one hour of your time in order to complete several questionnaires regarding your drinking and your beliefs about alcohol. You will be asked to complete these questionnaires in classrooms reserved specifically for this purpose. The questionnaires, opscan forms, and number 2 pencils will be provided for you. Additionally, you may be contacted again and asked to participate in the second part of the study.

3. Risks:

Risks involved in participating in this research are considered minimal. Because the questionnaires request information about your drinking patterns and information regarding your beliefs about alcohol, it may heighten your awareness of these beliefs.

4. Benefits of this Project:

For your participation in this project, you will receive one extra credit point. Additionally, if you are asked and choose to participate in the second part of the study, you will receive another extra credit point at that time. If you choose not to participate in this research, alternative ways of earning extra credit are available. Please consult your course syllabus or instructor in order to determine which alternatives are available.

By participating, you are contributing data which will help to advance knowledge about how people form judgments regarding their abilities. You may obtain a copy of the results of this study by contacting the investigator at a later date or leaving your name, address and phone number (on a separate sheet of paper) with the experimenter.

No promise or guarantee of benefits is being made to encourage you to participate.

5. Extent of Anonymity and Confidentiality:

Information regarding the responses you provide will be kept completely confidential. At no time will the information you provide be released to anyone, except those individuals who need the information in order to conduct the research.

You will be asked to provide your name, address, and telephone number on the informed consent form so that you can be contacted again if you are asked to participate in the second part of the study. If you are not asked to participate in the second part of the study, your name, address, and telephone number will be detached and destroyed. Thus, there will be no way to associate the information you provided with who you are. If you are asked to participate in the second part, this information will be destroyed following the second study. No personally identifying information will be located on the questionnaires and the informed consent forms will be stored in a locked cabinet separate from your questionnaires.

6. Compensation:

Appendix A(continued)

For participating in this study, you will receive one extra credit point. There are alternative ways of earning extra credit. You should consult the course syllabus for which extra credit is to be earned for alternative ways to earn extra credit in the course. You should also review your syllabus or consult your instructor to determine how the extra credit earned from participation in this project will impact your grade.

Additionally, if you are asked and choose to participate in the second part of this study, you will earn another extra credit point.

7. Freedom to Withdraw:

You are free to withdraw from this research at any time without penalty. If you choose to withdraw, you will not lose extra credit points. You are also free not to answer any questions or experimental situations that you choose without penalty.

8. Approval of Research:

This research has been approved, as required, by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University and by the Department of Psychology.

9. Participant's Responsibilities:

I voluntarily agree to participate in this study. I have the following responsibilities:

- 1) To read this informed consent form and sign it if I choose to participate
- 2) To answer all questions and provide requested information, provided that I choose to do so

10. Participant's Permission:

I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project.

If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.

Participant's signature: _____

Date: _____

Should I have any questions about this research and its conduct, I may contact any of the persons named below.

Investigator	Felicity L. James	231-6914
Faculty advisor	Robert S. Stephens	231-6304
Chair of HSC	Richard M. Eisler	231-7001
Chair of IRB	Ernest R. Stout	231-9359

Please Print:

Name: _____

Address: _____

Phone: _____

Participant number: _____

Appendix B

1. Please indicate your gender. (1)_____Female (2)_____Male
2. Please put your age in the blank. _____years
3. Please indicate your race. (1)_____African-American
(2)_____Asian-American
(3)_____Hispanic
(4)_____Native American
(5)_____White/European
(6)_____Other
4. Please indicate which student status best describes you.
(1)_____Freshman
(2)_____Sophomore
(3)_____Junior
(4)_____Senior
(5)_____Special Student
5. We are interested in how frequently you drink alcohol beverages. In general over the past month, how many days did you have any drink containing alcohol, whether it was wine, beer, hard liquor or any other alcohol beverage? Please indicate your answer in the space provided
_____ number of days in the last month
6. Think of all the times you drank over the past month. On average how many drinks did you consume on each occasion? By one drink, we mean one 12 ounce drink of beer, one standard cocktail containing one ounce of 86 proof liquor, or one 4 ounce drink of wine. Please indicate your response in the space provided.
_____ average number of drinks per drinking occasion.
7. Over the last month how many hours did you spend drinking on average during each drinking occasion?
_____ average number of hours spent drinking during each drinking occasion.

Appendix C

What is Blood Alcohol Content (BAC)? BAC is the ratio of alcohol to blood in the bloodstream. BAC can typically be predicted from the amount of alcohol that is in an individual's bloodstream when that person's sex and weight are known.

The chart below indicates how many drinks you would need to consume during a four-hour time period in order to have a BAC of .08. Please locate your gender and weight in this chart in order to determine how many drinks you would need to consume. Remember that one drink is equivalent to 12 oz. of beer or 4 oz. of wine or one standard cocktail containing 1 oz. of 86 proof liquor.

If you have any questions about how to interpret this chart, please ask the experimenter.

Write down how many drinks you would need to consume during a four-hour time period in order to reach a .08 BAC

_____drinks

FEMALE		MALE	
Weight	Drinks	Weight	Drinks
< 119	3	< 119	4
120-139	4	120-159	5
140-179	5	160-179	6
180-219	6	180-199	7
220-239	7	200-239	8
240-279	8	240-259	9
280-299	9	260-279	10
≥ 300	10	280-299	11
		≥ 300	12

Appendix D

Please respond to the following questions by indicating “yes” or “no”.

1. Sometimes I think I should cut down on my drinking
2. I am at a stage where I should think about drinking less alcohol
3. I enjoy my drinking, but sometimes I drink too much.
4. My drinking is a problem sometimes.
5. I am considering drinking less.
6. I have already started making some changes in my drinking.
7. I’m not just thinking about changing my drinking, I’m already doing something about it.
8. I’m actively doing things now to cut down or stop my drinking.
9. I have started to carry out a plan to cut down or stop my drinking.
10. I am working hard to change my drinking.

Appendix E

Write the number of drinks you would need to consume during a four-hour period in order to reach a blood alcohol level of .08 here: _____

Also enter that number in the upper right hand corner of every page of this questionnaire.

Please respond to the following situations by indicating how confident you are that you are able to resist drinking above a .08 BAC (the equivalent of the number you wrote in the space above).

0% confidence = 0

20% confidence = 1

40% confidence = 2

60% confidence = 3

80% confidence = 4

100% confidence = 5

1. If I felt uneasy in the presence of someone
2. If I unexpectedly found a bottle of my favorite booze
3. If I were at a party and other people were drinking
4. If I felt I had let myself down
5. If I broke up with my significant other
6. If I were talking to an attractive member of the opposite sex
7. If I suddenly had the urge to drink
8. If I were angry at the way something had turned out
9. If other people didn't seem to like me
10. If I were at a friend's place and they were playing drinking games
11. If someone pressured me to be a "good sport" and have a drink
12. If I was at a fraternity party
13. If someone criticized me
14. If I were on a date and my date was drinking
15. If I had just finished a long day of classes or work
16. If it was a week-end
17. If I felt lonely
18. If I was at a casual get-together

Appendix E(continued)

0% confidence = 0
20% confidence = 1
40% confidence = 2
60% confidence = 3
80% confidence = 4
100% confidence = 5

19. If I had some extra money
20. If a friend was buying me drinks
21. If I felt anxious and wanted to relax
22. If I had an argument with a friend or roommate
23. If I were in a restaurant and the people with me ordered pitchers of beer and mixed drinks
24. If I were at a tailgate party for a football game
25. If someone I was attracted to was drinking
26. If there were problems at school or work
27. If other people made me tense
28. If I was with friends watching TV
29. If I were at happy hour with a group of friends
30. If I was bored
31. If I had just gotten a good grade on a test
32. If I were at a bar having a good time
33. If I was at a party where I didn't know many people
34. If I wanted to celebrate with a friend
35. If I was talking to someone I didn't know well
36. If I were enjoying myself at a party and wanted to feel even better

Appendix F

Listed below are a number of situations which people report happen to them once they change the way they drink. Indicate whether you agree or disagree that each of the following situations will happen to you if you change the way you drink.

Strongly Agree = 1
Agree Somewhat = 2
Don't Know = 3
Disagree Somewhat = 4
Disagree Strongly = 5

1. I would feel more depressed
2. I would feel lonelier
3. The world would look better to me
4. I would be moodier
5. Some of my drinking friends would avoid me
6. I would be less flirtatious
7. I would feel less guilty about what I did while I was drunk
8. I would be happier
9. I would be less sexually aggressive
10. Things would be better at work and school with boss/teachers and co-workers/schoolmates
11. I would be more tense and anxious
12. I would be less fun to be with
13. I would have more sudden urges to drink
14. My mind would be clearer
15. I would be healthier
16. I would have more energy to do things
17. My future would look better
18. I would be bored more often
19. I would be offered drinks from my friends more often
20. I would feel more in control of things

Appendix F(continued)

Strongly Agree = 1
Agree Somewhat = 2
Don't Know = 3
Disagree Somewhat = 4
Disagree Strongly = 5

21. I would feel awkward in social situations
22. I would be better at my job
23. I would enjoy life more
24. I would eat better
25. I would be more intimidated when interacting with the opposite sex in social situations
26. I would be steadier on my feet
27. I would have less fun with my friends
28. I would have more money
29. I would be healthier
30. I would feel more left out when others were drinking
31. My job would be more secure
32. I would have more urges to drink if I went to my usual drinking spots
33. I would be friendlier and more outgoing
34. I would enjoy sex more
35. I would lose weight
36. I would have more difficulty meeting others
37. I would feel more self-confident
38. Other people would respect me more
39. I would develop new bad habits
40. I would get better grades
41. I would have a better memory of what happened while I was drinking
42. I would find it easier to express my feelings to others
43. I would not feel hungover in the morning

Appendix F(continued)

Strongly Agree = 1
Agree Somewhat = 2
Don't Know = 3
Disagree Somewhat = 4
Disagree Strongly = 5

44. I would be more withdrawn when I am with others
45. I would feel better about myself
46. My relationship with my boyfriend or girlfriend would be better
47. I would have more self-respect
48. I would be more relaxed and confident with others

Appendix G**DEBRIEFING FORM**

Thank you for your participation in this study. You have just completed several questions which will provide us with information about college students' drinking patterns and beliefs. You may be called and invited to participate in the second part of this study. If you are not contacted, the paper containing your name, address, and phone number will be destroyed. All information you provided will be kept confidential.

If you would like information concerning the results of this study, please leave your name and address (on a separate sheet of paper) with the experimenter.

If you have any questions about the study or its conduct, please contact the experimenter (Felicity L. James) at 231-6914. You may also contact any one of the persons listed below.

Faculty sponsor	Robert S. Stephens	231-6304
Chair of HSC	Richard M. Eisler	231-7001
Chair of IRB	Ernest R. Stout	231-6077

Again, we thank you for your participation.

Appendix H

Informed Consent for Participants of Investigative Projects

Title of Project: Self-Efficacy

Investigators: Felicity L. James & Robert S. Stephens

1. The Purpose of this Research/Project:

You are invited to participate in a study designed to investigate self-efficacy (an individual's estimate of his or her ability to perform a certain behavior) and how people form these judgments. Although a total of forty people will participate, you will meet with the investigator individually.

2. Procedures to be Followed:

To accomplish the goals of this study, you will be asked to report to Derring 4086 or 4094 to meet with the investigator. You will be asked to donate approximately one hour of your time in order to answer several questions regarding what you believe you can or cannot do.

3. Risks:

Risks are considered minimal. Responding to these questions may make you more aware of your beliefs about your abilities. Additionally, the investigator will know who you are. However, the investigator will not release this information to anyone except those involved in conducting the study who need this information in order to carry out their responsibilities. All of your responses will be kept strictly confidential.

4. Benefits of this Project:

For your participation in this project, you will earn one extra credit point. There are alternative ways to earn extra credit points and you should consult your course syllabus or instructor to determine which alternatives are available.

Additionally, your responses will help us understand the meaning of self-efficacy judgments and how people form these perceptions.

No promise or guarantee of benefits is made to encourage you to participate.

5. Extent of Anonymity and Confidentiality:

The responses you give will be kept confidential. The information (name, address, phone number) you provided in the first study will be destroyed following this study. Your name or any other identifying information will not be recorded on any of the forms completed in this study.

6. Compensation:

For participating in this study, you will receive one extra credit point. You should consult the course syllabus for which extra credit is to be earned for alternative ways to earn extra credit in the course (which are available). You should also review your syllabus or consult your instructor to determine how the extra credit earned from participation in this research project will impact your grade.

7. Freedom to Withdraw:

You are free to withdraw from this study at any time without penalty. You will not lose extra credit points if you choose to withdraw. You are also free not to answer any questions you choose without penalty.

Appendix H(continued)

8. Approval of Research:

This research project has been approved, as required, by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University and by the Department of Psychology.

9. Participant's Responsibilities:

I voluntarily agree to participate in this study. I have the following responsibilities:

- 1) To read this Informed Consent and sign it if I choose to participate
- 2) To answer all questions which I choose to answer

10. Participant's Permission:

I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project.

If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.

Participant's signature: _____

Date: _____

Should I have any questions about this research and its conduct, I may contact any of the persons named below.

Primary researcher	Felicity L. James	231-6914
Faculty sponsor	Robert S. Stephens	231-6304
Chair of HSC	Richard M. Eisler	231-7001
Chair of IRB	Ernest R. Stout	231-9359

Appendix I

Can you avoid drinking more than _____ drinks over a four-hour period (calculate number of drinks required for a .08 BAC for each person individually) for a period of:

1 day _____
 1 week _____
 1 month _____
 6 months _____
 1 year _____
 5 years _____
 forever _____

On a scale from 1 to 7 with 1 representing extremely unpleasant and 7 representing extremely pleasant, how would you describe refraining from drinking no more than _____ drinks (fill in for each person individually) over a four-hour period for the following lengths of time:

1 day _____
 1 week _____
 1 month _____
 6 months _____
 1 year _____
 5 years _____
 forever _____

Can you throw a basketball into a hoop from:

5 ft. _____
 10 ft. _____
 15 ft. _____
 30 ft. _____
 50 ft. _____
 75 ft. _____
 100 ft. _____

On a scale from 1 to 7, with 1 representing extremely unpleasant and 7 representing extremely pleasant, how would you describe throwing a basketball into a hoop from a distance of:

5 ft. _____
 10 ft. _____
 15 ft. _____
 30 ft. _____
 50 ft. _____
 75ft. _____
 100 ft. _____

Alcohol Consumption

For the first task for which the person replied with a “no”, ask him or her if he or she could do it for the following amounts of money (start with the lowest incentive and continue offering incentives until a “yes” response is achieved or you reach the end of the list). Circle the incentive at which the person gives a “yes” response.

Appendix I(continued)

\$5, \$10, \$20, \$50, \$100, \$1000, \$10,000, \$100,000

Ask the person why he or she changed his/her response.

Basketball

For the first task for which the person replied with a “no”, ask him or her if he or she could do it if you gave them the amount of money (hypothetically) that you gave them for changing for the drinking-related task (above). If the person responds with a “no”, ask why they changed their response for the drinking task but not for this task when the reward offered was the same. Record word-for-word persons’ reasons in the space provided below:

Now start with the next highest incentive from the incentive previously offered and keep offering incentives until a “yes” response is given or you reach the end of the list. Circle the incentive at which the person changes his or her response from “no” to “yes”.

\$5, \$10, \$20, \$50, \$100, \$1000, \$10,000, \$100,000

If the person has provided a “no” response to the question regarding limiting drinking forever, ask the person if he or she could do it if you gave him or her the following incentives. Start with the lowest incentive and continue offering incentives until the person gives a “yes” response or you reach the end of the list. Circle the number at which the person gives a “yes” response.

\$5, \$10, \$20, \$50, \$100, \$1000, \$10,000, \$100,000

Ask the person why he or she changed his/her response.

If the person indicated that he or she could not throw a basketball into a hoop from a distance of 100 ft., offer the same incentive at which the person gave a “yes” response in the previous question. If the person does not change his or her response with this incentive, ask why he or she changed his or her response to the drinking-related question, but not for this task when the same amount of money is being offered. Record word-for-word the reasons given by the person in the space provided below:

Now start with the next highest incentive and continue offering incentives until the person gives a “yes” response or you reach the end of the list. Circle the amount at which the person gives a “yes” response.

\$5, \$10, \$20, \$50, \$100, \$1000, \$10,000, \$100,000

Appendix J**DEBRIEFING FORM**

Thank you for your participation in this study. You have just completed several questions which will provide us with information about college students' drinking patterns and beliefs. The paper containing your name, address, and phone number will be destroyed and all information you provided will be kept confidential.

If you would like information concerning the results of this study, please leave your name and address (on a separate sheet of paper) with the experimenter.

If you have any questions about the study or its conduct, please contact the experimenter (Felicity L. James) at 231-6914. You may also contact any one of the persons listed below.

Faculty sponsor	Robert S. Stephens	231-6304
Chair of HSC	Richard M. Eisler	231-7001
Chair of IRB	Ernest R. Stout	231-6077

Again, we thank you for your participation.

Appendix K

Money:

Any response that indicates that money was the motivating factor for a change in efficacy ratings.

Lack of Ability:

Any response that indicates that the participant did not believe himself or herself to be capable of performing the task (e.g. physically).

Luck:

Any response which indicates that the participant thought the task involved pure luck or that he or she would have no control over his or her performance. This category may be more difficult to distinguish from lack of ability. Please make a note of any responses that are difficult to categorize.

Other:

Reserved for responses which do not seem to fit any of the above categories.

Appendix L

Informed Consent for Participants of Investigative Projects

Title of Project: Self-Efficacy

Investigators: Felicity L. James & Robert S. Stephens

1. Purpose of this Research/Project:

You are invited to participate in a study designed to investigate self-efficacy (an individual's estimate of his or her ability to perform a certain behavior) and how people form these judgments. The total number of people involved in this study will be greater than eighty because the project requires a total sample of eighty and only a portion of data from participants will be used in the final analyses.

2. Procedures to be Followed:

To accomplish the goals of this study, you will be asked to report to classrooms specifically reserved for this project. You will be asked to donate approximately one hour of your time in order to complete several questionnaires regarding your drinking patterns, your beliefs about the effects of drinking, etc. The questionnaires, opscans, and #2 pencils necessary for responding to these questionnaires will be provided for you. You may also be contacted again at one month and two months following this and asked to provide information about your drinking during that time.

3. Risks:

Risks involved in participating in this study are considered minimal. Because information regarding your beliefs and your drinking is requested, it may heighten your awareness of these beliefs.

4. Benefits of this Project:

For participating in this study you will receive one extra credit point. Additionally, if you are contacted at the one-month and two-month follow-ups, you will receive one extra credit point for each of these, as well. Alternative means of earning extra credit are available and you should consult your course syllabus or instructor in order to determine which alternatives are available.

Additionally, your responses will help us understand the self-efficacy judgments and how people form these perceptions.

No promise or guarantee of benefits is made to encourage you to participate.

5. Extent of Anonymity and Confidentiality:

The responses you give will be kept confidential. It will be necessary to obtain your name, address, and phone number in order to contact you again after 30 and 60 days. However, this information will be stored separate from the responses you give and only those people involved in conducting the study will have access to your name, address, or phone number. After you have been contacted again (or if you are not selected for the follow-ups), the piece of paper on which you provided your name, address, and phone number will be shredded.

6. Compensation:

For participating in this study, you will receive one extra credit point at the first session and another extra credit point at each of the follow-ups, if you are selected for the follow-ups. Alternative means of earning extra credit are available. You should consult the course syllabus for which extra credit is to be earned for alternative ways to earn extra credit in the course. You should also review your syllabus or consult your instructor to determine

Appendix L(continued)

how the extra credit earned from participation in this research project will impact your grade.

7. Freedom to Withdraw:

You are free to withdraw from this study at any time without penalty. You will not lose extra credit points if you choose to withdraw. You are also free to choose not to respond to questions without penalty.

8. Approval of Research:

This research project has been approved, as required, by the Institutional Review Board for Research Involving Human Subjects at Virginia Polytechnic Institute and State University and by the Department of Psychology.

9. Subject's Responsibilities:

I voluntarily agree to participate in this study. I have the following responsibilities:

- 1) To read the Informed Consent, ask any questions I may have, and sign this Informed Consent if I choose to participate

10. Subject's Permission:

I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent for participation in this project.

If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.

Subject's signature _____

Date: _____

I also understand that if I have any questions about this research and its conduct, I should contact any of the persons named below.

Primary researcher	Felicity L. James	231-6914
Faculty sponsor	Robert S. Stephens	231-6304
Chair of HSC	Richard M. Eisler	231-7001
Chair of IRB	Ernest R. Stout	231-6077

Please Print:

Name: _____

Address: _____

Phone: _____

Subject number: _____

Appendix M

1. Please indicate your gender. (1) _____Female (2) _____Male
2. Please put your age in the blank. _____years
3. Please indicate your race. (1) _____African-American
(2) _____Asian-American
(3) _____Hispanic
(4) _____Native American
(5) _____White/European
(6) _____Other
4. Please indicate which student status best describes you.
(1) _____Freshman
(2) _____Sophomore
(3) _____Junior
(4) _____Senior
(5) _____Special Student

Appendix N

Order #1: SCQ-A, ACES-A, SCQ-W, ACES-W

Order #2: SCQ-W, ACES-W, SCQ-A, ACES-A

ACES-A refers to the ability format of the Alcohol Coping Efficacy Scale.

ACES-W refers to the willingness format of the Alcohol Coping Efficacy Scale.

SCQ-A refers to the ability format of the Situational Confidence Questionnaire.

SCQ-W refers to the willingness format of the Situational Confidence Questionnaire.

Appendix O**DEBRIEFING FORM**

Thank you for your participation in this study. The information you have provided will help us to better understand the meaning of self-efficacy judgments (beliefs about your ability to do something). It will also help us understand the relationship between these judgments and the expected effects of consuming or changing one's pattern of consuming alcohol.

You may be contacted again in 30 days and 60 days. If you are contacted again, you will receive another extra credit point for each follow-up.

If you have any questions or concerns about this study, please contact the primary researcher (Felicity L. James, 231-6914). You may also contact any of the persons named below.

Faculty sponsor	Robert S. Stephens	231-6304
Chair of HSC	Richard M. Eisler	231-7001
Chair of IRB	Ernest R. Stout	231-6077

If you would like information about the results of this study, please leave your name and address (on a separate sheet of paper) with the experimenter.

Again, we thank you for your participation.

Appendix P

Write the number of drinks you would need to consume during a four-hour period in order to reach a blood alcohol level of .08 here: _____

Also enter that number in the upper right hand corner of every page of this questionnaire.

Please respond to the following situations by indicating how confident you are that you would be able to resist drinking above a .08 BAC (the equivalent of the number you wrote in the space above).

0% confidence = 0
20% confidence = 1
40% confidence = 2
60% confidence = 3
80% confidence = 4
100% confidence = 5

1. If I felt uneasy in the presence of someone
2. If I unexpectedly found a bottle of my favorite booze
3. If I were at a party and other people were drinking
4. If I felt I had let myself down
5. If I broke up with my significant other
6. If I were talking to an attractive member of the opposite sex
7. If I suddenly had the urge to drink
8. If I were angry at the way something had turned out
9. If other people didn't seem to like me
10. If I were at a friend's place and they were playing drinking games
11. If someone pressured me to be a "good sport" and have a drink
12. If I was at a fraternity party
13. If someone criticized me
14. If I were on a date and my date was drinking
15. If I had just finished a long day of classes or work
16. If it was a week-end
17. If I felt lonely
18. If I was at a casual get-together

Appendix P(continued)

0% confidence = 0
20% confidence = 1
40% confidence = 2
60% confidence = 3
80% confidence = 4
100% confidence = 5

19. If I had some extra money
20. If a friend was buying me drinks
21. If I felt anxious and wanted to relax
22. If I had an argument with a friend or roommate
23. If I were in a restaurant and the people with me ordered pitchers of beer and mixed drinks
24. If I were at a tailgate party for a football game
25. If someone I was attracted to was drinking
26. If there were problems at school or work
27. If other people made me tense
28. If I was with friends watching TV
29. If I were at happy hour with a group of friends
30. If I was bored
31. If I had just gotten a good grade on a test
32. If I were at a bar having a good time
33. If I was at a party where I didn't know many people
34. If I wanted to celebrate with a friend
35. If I was talking to someone I didn't know well
36. If I were enjoying myself at a party and wanted to feel even better

Appendix Q

Write the number of drinks you would need to consume during a four-hour period in order to reach a blood alcohol level of .08 here: _____

Also enter that number in the upper right hand corner of every page of this questionnaire.

Please respond to the following situations by indicating how confident you are that you would be willing to resist drinking above a .08 BAC (the equivalent of the number you wrote in the space above).

0% confidence = 0

20% confidence = 1

40% confidence = 2

60% confidence = 3

80% confidence = 4

100% confidence = 5

1. If I felt uneasy in the presence of someone
2. If I unexpectedly found a bottle of my favorite booze
3. If I were at a party and other people were drinking
4. If I felt I had let myself down
5. If I broke up with my significant other
6. If I were talking to an attractive member of the opposite sex
7. If I suddenly had the urge to drink
8. If I were angry at the way something had turned out
9. If other people didn't seem to like me
10. If I were at a friend's place and they were playing drinking games
11. If someone pressured me to be a "good sport" and have a drink
12. If I was at a fraternity party
13. If someone criticized me
14. If I were on a date and my date was drinking
15. If I had just finished a long day of classes or work
16. If it was a week-end
17. If I felt lonely
18. If I was at a casual get-together

Appendix Q(continued)**0% confidence = 0****20% confidence = 1****40% confidence = 2****60% confidence = 3****80% confidence = 4****100% confidence = 5**

19. If I had some extra money
20. If a friend was buying me drinks
21. If I felt anxious and wanted to relax
22. If I had an argument with a friend or roommate
23. If I were in a restaurant and the people with me ordered pitchers of beer and mixed drinks
24. If I were at a tailgate party for a football game
25. If someone I was attracted to was drinking
26. If there were problems at school or work
27. If other people made me tense
28. If I was with friends watching TV
29. If I were at happy hour with a group of friends
30. If I was bored
31. If I had just gotten a good grade on a test
32. If I were at a bar having a good time
33. If I was at a party where I didn't know many people
34. If I wanted to celebrate with a friend
35. If I was talking to someone I didn't know well
36. If I were enjoying myself at a party and wanted to feel even better

Appendix R

Please enter the number of drinks you would need to consume to reach a blood alcohol content level of .08 _____. Please write this number in the upper right hand corner of every page of this questionnaire.

Listed below are a number of behaviors that individuals report engaging in when they want to control their drinking. Indicate how confident you are that you are that you would be able to use each of these strategies to keep your BAC below .08 (or drink fewer than the number of drinks you wrote above).

0% confidence = 0
20% confidence = 1
40% confidence = 2
60% confidence = 3
80% confidence = 4
100% confidence = 5

1. Reward myself for drinking less
2. Refuse unwanted drinks
3. Get my friends to help me limit my drinking
4. Set limits on how long I'll drink
5. Drink nonalcoholic beverages
6. Avoid playing drinking games
7. Select drinks that I drink slowly
8. Eat before or while I'm drinking
9. Drink less when I am going to drive
10. Ask my family for support to help me limit my drinking
11. Set a limit on the number of drinks I have in a sitting
12. Avoid drinking with heavy drinkers
13. Participate in activities such as tennis, running, etc. when I feel like drinking
14. Stop drinking alcohol for some period of time
15. Use my body sensations to let me know when I should slow my drinking down

Appendix R (continued)

0% confidence = 0
20% confidence = 1
40% confidence = 2
60% confidence = 3
80% confidence = 4
100% confidence = 5

16. Not keep alcohol at home
17. Avoid drinking during boring or repetitious activities
18. Substitute other means for feeling friendly or sociable
19. Avoid drinking with those who pressure me to drink
20. Punish myself for failing to limit my drinking
21. Drink beer from a bottle instead of from kegs or pitchers
22. Offer to be the designated driver
23. Keep track of the number of drinks I consume
24. Avoid drinking during or after stressful events
25. Select drinks lower in alcohol content
26. Avoid drinking on occasions when I over-drink
27. Think about the consequences of my drinking
28. Reward myself for not drinking
29. Avoid drinking wine or liquor from the bottle
30. Limit the amount of money I carry
31. Substitute other means for dealing with stress, depression, and anxiety
32. Drink only after a certain hour of the day
33. Avoid drinking in places where I over-drink
34. Purposely take slow sips on my drink
35. Engage in activities during drinking (e.g. dancing, talking)
36. Confine drinking to certain times of the day

Appendix S

Please enter the number of drinks you would need to consume to reach a blood alcohol content level of .08 _____. Please write this number in the upper right hand corner of every page of this questionnaire.

Listed below are a number of behaviors that individuals report engaging in when they want to control their drinking. Indicate how confident you are that you are that you would be willing to use each of these strategies to keep your BAC below .08 (or drink fewer than the number of drinks you wrote above).

0% confidence = 0
20% confidence = 1
40% confidence = 2
60% confidence = 3
80% confidence = 4
100% confidence = 5

1. Reward myself for drinking less
2. Refuse unwanted drinks
3. Get my friends to help me limit my drinking
4. Set limits on how long I'll drink
5. Drink nonalcoholic beverages
6. Avoid playing drinking games
7. Select drinks that I drink slowly
8. Eat before or while I'm drinking
9. Drink less when I am going to drive
10. Ask my family for support to help me limit my drinking
11. Set a limit on the number of drinks I have in a sitting
12. Avoid drinking with heavy drinkers
13. Participate in activities such as tennis, running, etc. when I feel like drinking
14. Stop drinking alcohol for some period of time
15. Use my body sensations to let me know when I should slow my drinking down

Appendix S (continued)**0% confidence = 0****20% confidence = 1****40% confidence = 2****60% confidence = 3****80% confidence = 4****100% confidence = 5**

16. Not keep alcohol at home
17. Avoid drinking during boring or repetitious activities
18. Substitute other means for feeling friendly or sociable
19. Avoid drinking with those who pressure me to drink
20. Punish myself for failing to limit my drinking
21. Drink beer from a bottle instead of from kegs or pitchers
22. Offer to be the designated driver
23. Keep track of the number of drinks I consume
24. Avoid drinking during or after stressful events
25. Select drinks lower in alcohol content
26. Avoid drinking on occasions when I over-drink
27. Think about the consequences of my drinking
28. Reward myself for not drinking
29. Avoid drinking wine or liquor from the bottle
30. Limit the amount of money I carry
31. Substitute other means for dealing with stress, depression, and anxiety
32. Drink only after a certain hour of the day
33. Avoid drinking in places where I over-drink
34. Purposely take slow sips on my drink
35. Engage in activities during drinking (e.g. dancing, talking)
36. Confine drinking to certain times of the day

Appendix T

Here is a list of some effects or consequences that some people experience after drinking alcohol to the .08 BAC level. How likely is it that these things happen to you when you drink alcohol? Please enter on the opscan the number that best describes how drinking enough alcohol to have a BAC of .08 would affect you. If you do not drink at all, just answer it according to what you think would happen if you did drink enough to have a .08 BAC level.

	No Chance	Very Unlikely	Unlikely	Likely	Very Likely	Certain to happen
1. I am more accepted socially	1	2	3	4	5	6
2. I become aggressive	1	2	3	4	5	6
3. I am less alert	1	2	3	4	5	6
4. I feel ashamed of myself	1	2	3	4	5	6
5. I enjoy the buzz	1	2	3	4	5	6
6. I become clumsy or uncoordinated	1	2	3	4	5	6
7. I feel good	1	2	3	4	5	6
8. I get into fights	1	2	3	4	5	6
9. I can't concentrate	1	2	3	4	5	6
10. I have a good time	1	2	3	4	5	6
11. I have problems driving	1	2	3	4	5	6
12. I feel guilty	1	2	3	4	5	6
13. I get a hangover	1	2	3	4	5	6
14. I feel happy	1	2	3	4	5	6
15. I get a headache	1	2	3	4	5	6
16. I am more sexually assertive	1	2	3	4	5	6
17. It is fun	1	2	3	4	5	6
18. I get mean	1	2	3	4	5	6

Appendix T(continued)

	No Chance	Very Unlikely	Unlikely	Likely	Very Likely	Certain to happen
19. I have problems with memory and concentration	1	2	3	4	5	6
20. I am more outgoing	1	2	3	4	5	6
21. It takes away my negative moods and feelings	1	2	3	4	5	6
22. I have more desire for sex	1	2	3	4	5	6
23. It is easier for me to socialize	1	2	3	4	5	6
24. I feel pleasant physical effects	1	2	3	4	5	6
25. I am more sexually responsive	1	2	3	4	5	6
26. I feel more sociable	1	2	3	4	5	6
27. I feel sad or depressed	1	2	3	4	5	6
28. I am able to talk more freely	1	2	3	4	5	6
29. I become more sexually active	1	2	3	4	5	6
30. I feel sick	1	2	3	4	5	6
31. I feel less stressed	1	2	3	4	5	6
32. I am friendlier	1	2	3	4	5	6
33. I experience unpleasant physical effects	1	2	3	4	5	6
34. I am able to take my mind off my problems	1	2	3	4	5	6

Appendix U

Listed below are a number of situations which people report happen to them once they change the way they drink. Indicate whether you agree or disagree that each of the following situations will happen to you if you change the way you drink.

Strongly Agree = 1
Agree Somewhat = 2
Don't Know = 3
Disagree Somewhat = 4
Disagree Strongly = 5

1. I would feel more depressed
2. I would feel lonelier
3. The world would look better to me
4. I would be moodier
5. Some of my drinking friends would avoid me
6. I would be less flirtatious
7. I would feel less guilty about what I did while I was drunk
8. I would be happier
9. I would be less sexually aggressive
10. Things would be better at work and school with boss/teachers and co-workers/schoolmates
11. I would be more tense and anxious
12. I would be less fun to be with
13. I would have more sudden urges to drink
14. My mind would be clearer
15. I would be healthier
16. I would have more energy to do things
17. My future would look better
18. I would be bored more often
19. I would be offered drinks from my friends more often
20. I would feel more in control of things
21. I would feel awkward in social situations

Appendix U(continued)

Strongly Agree = 1
Agree Somewhat = 2
Don't Know = 3
Disagree Somewhat = 4
Disagree Strongly = 5

22. I would be better at my job
23. I would enjoy life more
24. I would eat better
25. I would be more intimidated when interacting with the opposite sex in social situations
26. I would be steadier on my feet
27. I would have less fun with my friends
28. I would have more money
29. I would be healthier
30. I would feel more left out when others were drinking
31. My job would be more secure
32. I would have more urges to drink if I went to my usual drinking spots
33. I would be friendlier and more outgoing
34. I would enjoy sex more
35. I would lose weight
36. I would have more difficulty meeting others
37. I would feel more self-confident
38. Other people would respect me more
39. I would develop new bad habits
40. I would get better grades
41. I would have a better memory of what happened while I was drinking
42. I would find it easier to express my feelings to others
43. I would not feel hungover in the morning
44. I would be more withdrawn when I am with others

Appendix U(continued)

Strongly Agree = 1
Agree Somewhat = 2
Don't Know = 3
Disagree Somewhat = 4
Disagree Strongly = 5

45. I would feel better about myself
46. My relationship with my boyfriend or girlfriend would be better
47. I would have more self-respect
48. I would be more relaxed and confident with

Appendix V

INSTRUCTIONS FOR COMPLETING THE TIMELINE CALENDAR

1. It is important that for each day on the calendars you list the number of drinks you consumed. Remember that by one drink we mean 12 oz. of beer, one standard cocktail containing one ounce of 86 proof liquor, or one 4 oz. drink of wine.
2. On any day in which you did consume an alcoholic beverage, write in the number of drinks for each day. This includes days of combined beverage use. For example, if you drank a 4 oz. glass of wine with dinner and a 12 oz. beer, you would count that as two.
3. On all days in which you did not drink any alcoholic beverages, write "0". Make sure that something is filled in for every day on the calendars.
4. Do not be overly concerned about giving a precise, day-by-day account of your drinking. Just try to remember as well as you possibly can and put down your best estimate.
5. In filling out the calendars, try to be as accurate as possible. However, if you cannot recall whether you consumed an alcoholic beverage on Tuesday or Wednesday of a certain week, or whether it was the week of November 9th or the week of November 16th, just use your best guess.

HINTS:

1. Write down the days that are specific to yourself, such as birthdays, test dates, parties, etc. Marking down these special days can help you remember when and how much you drank.
2. If you have a planner or appointment book with you, use it to help you recall your drinking.
3. Sometimes people have certain patterns to their drinking and this may help you to fill out the calendars. For example, if you usually go out with friends on Friday or Saturday nights, you may recall that you would have had a certain number of drinks on those evenings, or you may have a week-end change in your drinking, or your drinking may be different depending on the season or semester.

Appendix V(Continued)

Month _____ Year _____

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VITA
FELICITY L. MITTON

EDUCATION

- A.A. University of Akron/Wayne College, 1991
Orrville, Ohio
With highest distinction
Editor of student newspaper; Secretary of
Student Senate
- B.A. University of Akron, 1994
Akron, Ohio
Major field of study: Psychology
Summa Cum Laude
Honors Program member
Honors Thesis: *Child Sexual Abuse
Knowledge Inventory*
- M.S. Virginia Polytechnic Institute
and State University, 1997
Major field of study: Clinical Psychology
Thesis: *Self-efficacy: Judgments of Ability
or Willingness?*

AWARDS AND HONORS

- 1989 Member of Phi Theta Kappa
- 1990 Recipient, Dean's Scholarship Award
University of Akron/Wayne College
- 1991 Candidate for Academic All-American Team
- 1991 Kiwanis Club of Akron Student Achievement Award
- 1991 Psi Chi, National Honor Society in Psychology
- 1993 Golden Key National Honor Society
Scholarship recipient, 1993-1994
- 1994 University Scholar, University of Akron
- 1994 Valedictorian, University of Akron

PROFESSIONAL POSITIONS

- 1990-1991 Tutor, University of Akron/Wayne College Learning
Center

- 1994-1995 Graduate Teaching Assistant, Department of Psychology
Introductory Psychology Recitation Instructor
Virginia Polytechnic Institute and State University
Blacksburg, Virginia
- 1994-1995 Graduate Student Assembly Representative
for Department of Psychology
- 1996 Graduate Teaching Assistant, Department of Psychology
Introductory Psychology Lecture Teaching Assistant
Virginia Polytechnic Institute and State University
Blacksburg, Virginia
- 1996-1997 Student Representative for the Clinical Psychology
graduate program
- 1997 Staff Scientist, American Research Corporation of Virginia

PROFESSIONAL ACTIVITIES

- 1994-present Student member, Association for
the Advancement of Behavior Therapy
- 1994-present Student member, American
Psychological Association, Division 12

RESEARCH EXPERIENCE

- 1993-1994 Co-investigator, *Optimal Theory Applied to Identity
Development in Lesbians and Gay Males*
Faculty Sponsor and Co-investigator: Dr. Eve Adams
Data analysis not yet completed.
- 1994 Honors Thesis, *Child Sexual Abuse Knowledge Inventory*
Faculty Sponsor: Dr. Michael A. McDaniel
- 1994-present James, F.L., Weinland, S., & Eisler, R.M.
*Development and Validation of the
Courtship Conflict Questionnaire*, paper
presented at the Radford University Student
Research Conference, March, 1996.
- 1995-1996 Research Assistant, *Female College Drinking
Patterns*, Investigator: Lisa Curtin.
Supervisor: Dr. Robert S. Stephens
- 1995-present Master's Thesis: *Self-efficacy: Judgments
of Ability or Willingness?*
Supervisor: Dr. Robert S. Stephens
Presented at AABT, New York City,
November, 1996.

CLINICAL EXPERIENCE

- 1989-1991 Wayne County Child Support, Investigator
Duties: Intakes, Ongoing case investigations.
- 1993 Residential Support Services
Duties: Direct care of mentally retarded individuals, implementation of behavioral programs.
- 1994-1995 Graduate Clinician
Conducted intellectual and personality assessments, individual therapy for depression, anxiety, and personality disorders, family therapy.
Supervisors: Dr. Robert S. Stephens and Dr. Jack W. Finney
- 1995-1996 Graduate Clinician
Conducted intellectual and personality assessments, individual therapy for alcohol and drug abuse, personality disorders, panic attacks and agoraphobia, depression, family therapy, therapy with conduct disordered children, and marital therapy.
Supervisors: Dr. Robert S. Stephens and Dr. Jack Finney
- 1996 Graduate Clinician, Salem Veterans' Affairs Medical Center, Salem, Virginia.
Conducted intake assessments, individual therapy and group therapy for depression, anxiety, chronic pain, post-traumatic stress disorder, and substance abuse.
Supervisors: Dr. Steven Lash and Dr. M.K. Johnson

REFERENCES

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