Journal of Abnormal Psychology
2009, Vol. 118, No. 3, 623–633

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0021-843X/09/$12.00 DOI: 10.1037/a0016199

Alcohol Breeds Empty Goal Commitments

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According to alcohol-myopia theory (C. M. Steele & R. A. Josephs, 1990), alcohol leads individuals to disproportionally focus on the most salient aspects of a situation and to ignore peripheral information. The authors hypothesized that alcohol leads individuals to strongly commit to their goals without considering information about the probability of goal attainment. In Study 1, participants named their most important interpersonal goal, indicated their expectations of successfully attaining it, and then consumed either alcohol or a placebo. In contrast to participants who consumed a placebo, intoxicated participants felt strongly committed to their goals despite low expectations of attaining them. In Study 2, goal-directed actions were measured over time. Once sober again, intoxicated participants with low expectations did not follow up on their strong commitments. Apparently, when prospects are bleak, alcohol produces empty goal commitments, as commitments are not based on individuals' expectations of attaining their goals and do not foster goal striving over time.

Keywords: alcohol, expectations, goal commitment, goal striving, placebo

Alcohol distorts people's minds in often unfavorable ways. Indeed, alcohol affects many social cognitive processes, for instance, person perception (Bartholow, Pearson, Gratton, & Fabiani, 2003), self-awareness (Hull, Levenson, Young, & Sher, 1983), self-evaluation (Banaji & Steele, 1989), decision making (MacDonald, Zanna, & Fong, 1995), social inferences (Herzog, 1999), social anxiety (DeBoer, Schippers, & van der Staak, 1993), appraisal of stressful information (Sayette, 1993), anticipation of consequences (Sayette, Wilson, & Elias, 1993), as well as response generation and selection (Bartholow, Dickter, & Sestir, 2006). However, whether alcohol affects goal commitment is less clear. Goal commitment strongly determines effort, persistence, and actual goal attainment. Therefore, if alcohol affects individuals' commitments to their goals, it might have significant consequences for the success with which individuals attain their goals.

Goal Commitment

Goal commitment was defined by Locke, Latham, and Erez (1988) as "one's attachment to or determination to reach a goal" (p. 24). Other researchers have conceptualized commitment as urgency to pursue the goal (Brunstein, 1993), willingness to invest effort (Hollenbeck, Klein, O'Leary, & Wright, 1989), willingness to persist in goal striving (Austin & Vancouver, 1996), taking on responsibility for goal attainment (Oettingen, Pak, & Schnetter, 2001), interest in reaching the goal (Wicklund & Gollwitzer, 1982), or disappointment if the goal is not reached (Berger, 1988; Wicklund & Gollwitzer, 1982). According to Klinger (1975), individuals commit to their goals before they pursue their goals. Furthermore, the strength of commitment is a powerful predictor for the strength of goal striving (i.e., the persistence and intensity with which individuals act toward realizing their goals).

For instance, goal commitment assessed by self-report predicted work performance of rehabilitation counselors (Renn, 2003), students' persistence/withdrawal rates at university (Allen & Nora, 1995), self-satisfaction with tennis performance (Theodorakis, 1996), performance on a computer skills test (Johnson, 2005), and self-reported progress in personal goal achievement (Brunstein, 1993). Moreover, in a meta-analysis of 74 studies, commitment had a strong positive effect on goal striving (Klein, Wesson, Hollenbeck, & Alge, 1999).

Commitment can be measured by directly asking participants to indicate the strength of their commitments (e.g., "I am strongly committed to pursuing this goal"; Hollenbeck et al., 1989). However, such direct measurements are particularly susceptible to individuals' tendency to present themselves in a positive light (self-presentation bias; Baumeister, 1982). Therefore, researchers often use more unobtrusive measures to assess commitment. For instance, as strongly committed people are likely to show frustration when experiencing failure (Berger, 1988; Gollwitzer & Kirchhof, 1998), the degree of anticipated disappointment if participants failed to attain their goal is a reliable indicator of commitment (Oettingen et al., 2001; Wicklund & Gollwitzer, 1982). This indicator was found to correlate with other measures of commitment (Oettingen, 2000, Study 1, Study 2).

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Preparation of this article was supported by German Science Foundation Grant OE 237/9-1 to Gabriele Oettingen and A. Timur Sevincer. Diana Bauer's, Paulina Gaska's, Ina Hahn's, Svena Heerwig's, Christina Hoffmann's, Sonja Menzel's, Maren Mountafi's, Sohelia Safari's, and Christine Teune's help with the collection of data and Doris Mayer's, Willi Nagl's, and Hyeonju Pak's assistance with the analysis of the data are gratefully acknowledged. We thank Heather Barry, Caterina Gawrilow, Peter M. Gollwitzer, Elizabeth J. Parks-Stamm, and Elizabeth J. Stephens for helpful comments on this article.

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Most theories of motivation suggest that the strength of commitment depends on the perceived value of the goals (i.e., incentive value) and the likelihood of goal attainment (i.e., expectations of success; e.g., Atkinson, 1957; Gollwitzer, 1990; Locke & Latham, 2002; summary by Oettingen & Gollwitzer, 2001). Incentive value refers to the degree of attraction individuals feel toward the desired outcomes, and expectations of success refer to individuals' judgments of the probability of attaining the outcomes. These judgments may refer to being able to perform relevant goal-directed behaviors (i.e., self-efficacy expectations; Bandura, 1997), to outcomes of goal-directed behaviors (i.e., outcome expectations; Bandura, 1997), and to specific desired outcomes (i.e., general expectations; Oettingen & Mayer, 2002).

The present study investigates whether alcohol affects individuals' commitments to their goals. Because alcohol interferes with attention and cognition, we suspect that alcohol leads individuals to strongly commit to their goals, irrespective of their expectations of attaining the goals. Thus, whereas sober individuals should feel strongly committed to goals for which they have high expectations and weakly committed to goals for which they have low expectations, intoxicated individuals should feel strongly committed to goals for which they have high expectations as well as to goals for which they have low expectations.

Alcohol Myopia

We suspect that alcohol leads individuals to feel strongly committed to their goals, irrespective of their expectations, because alcohol leads to a state of reduced cognitive processing capacity. According to alcohol-myopia theory (Steele & Josephs, 1990), in this state, individuals no longer have the processing skills to attend to all the information available in a situation. Instead, they are likely to focus on the aspects that are most salient and to ignore more peripheral aspects.

Research indicates that by this mechanism, alcohol may affect various social cognitive processes. For instance, alcohol led to less negative attitudes toward drinking and driving, but only in situations where impelling cues for engaging in drunk driving were salient. In situations where no such cues were present, intoxicated participants' attitudes toward drinking and driving did not differ from sober participants' attitudes (MacDonald et al., 1995). Similarly, intoxicated participants were *more* willing to engage in unprotected sexual intercourse than sober participants in situations where strong *impelling* cues for engaging in unprotected sexual intercourse were salient but were *less* willing to engage in unprotected sexual intercourse than sober participants when strong *inhibiting* cues were salient (MacDonald, Fong, Zanna, & Martineau, 2000). Finally, alcohol affected causal inferences, leading to exaggeration of either situational or dispositional causes for behavior, depending on which factors were most salient (Herzog, 1999).

In the above studies, the salience of a particular set of external cues was experimentally manipulated. For example, items were constructed in such a way that either impelling or inhibiting cues were highlighted. However, alcohol-myopic effects can also occur when a particular set of internal cognitions becomes highly activated without external cue manipulation. For instance, because people have a strong need to view themselves positively, information that supports this view is highly accessible in people's cognitions (e.g., Greenwald, 1980; Taylor & Brown, 1988). Thus, when people are asked to evaluate themselves, information that supports a positive view is likely to become salient in people's cognitions. In an intoxicated state, then, individuals tend to focus on the subset of self-knowledge that is most salient and to ignore other, more peripheral, information (which may contradict a positive self-view), thereby leading to even more favorable self-evaluations than when sober (ego inflation; Banaji & Steele, 1989).

The Present Research

Following Banaji and Steele's (1989) approach that intoxicated individuals disproportionally focus on the set of cognitions that is most salient, we assume that the alcohol myopia leads individuals to focus on the outcomes that they desire to attain, rather than on their expectations of attaining these outcomes. We do so because goals are defined as internal representations of desired outcomes (Austin & Vancouver, 1996). Thus, when people are asked about their goals, what should become most salient are the internal representations of the desired outcomes. In addition, the desired outcomes represent the ends of people's actions. As such they convey *wh*y people engage in their actions. Expectations refer to the means of *how* people can attain the desired outcomes (e.g., to judgments about whether one is capable of performing specific goal-directed actions and whether these actions lead to the desired outcomes; Bandura, 1997). According to goal-subordination theories, there is a tendency for the superordinate *why* aspects of an action to become prepotent over the subordinate *how* aspects in people's cognitions (Carver & Scheier, 1990; Liberman & Trope, 1998; Vallacher & Wegner, 1987). Furthermore, Gollwitzer (1990) has positsed that people start their goal pursuits with imagining a wish (i.e., a desired outcome) before they deliberate about the probability of realizing their wish.

Thus, when people are intoxicated, the alcohol should cause them to disproportionally focus on the desired outcomes and to ignore more remote information about the probability of attaining the outcomes. For instance, an intoxicated person who thinks about becoming a famous musician is likely to focus on the events that he or she associates with being a famous musician (e.g., being on the front cover of a magazine, giving a concert in front of a cheering crowd) but may ignore that in the past he or she was not successful in performing on stage and that very few people become famous musicians. As a consequence, that person fails to integrate his or her expectations into his or her commitments.

Moreover, because the desired events attract individuals (Klinger, 1975), they can be conceived as impelling cues for engaging in goal-directed behavior. When impelling cues were salient, intoxicated participants reported stronger intentions to engage in the respective behaviors than did sober individuals (MacDonald et al., 1995; 2000). Thus, focusing on the desired events should urge intoxicated individuals to attain the desired outcomes. Therefore, thinking about the desired events in an intoxicated state should lead individuals to feel *strongly* committed toward reaching their goals, irrespective of their expectations.

These considerations imply that intoxicated individuals should feel strongly committed to their goals, even if their expectations of attaining their goals are low. In contrast, sober individuals should feel only weakly committed to goals for which they have low

expectations. Consequently, in light of bleak prospects for goal attainment, intoxicated individuals should feel more committed to their goals than sober individuals. However, when prospects for goal attainment are promising, intoxicated as well as sober individuals should feel strongly committed to their goals. Therefore, in light of high expectations, commitment between intoxicated and sober individuals should not differ.

Study 1: Goal Commitment

We first asked participants to name their currently most important interpersonal goal. We chose a goal from the interpersonal domain, because forming and maintaining close relationships is a fundamental human need (Baumeister & Leary, 1995; McClelland, 1987; Ryan & Deci, 2000). Therefore, goals that are directed at forming or maintaining such relationships should be easily accessible as well as highly important. Next, we asked participants to indicate their expectations of attaining their goal. In addition, to assure that participants followed our instructions to name goals that are highly important to them, we asked participants to indicate the incentive value of their goals. Thereafter, we established two experimental conditions: alcohol and placebo. Participants in the alcohol condition were told that they would receive alcohol and received alcohol. Participants in the placebo condition were told that they would receive alcohol but received a nonalcoholic beverage. This design allowed us to investigate the effect of alcohol consumption on commitment that stems from the pharmacological properties of alcohol while participants' beliefs in having consumed alcohol were held constant (participants of both conditions expected alcohol). We chose this design because a meta-analysis by Hull and Bond (1986) indicated that the pharmacological effect of alcohol and the effect of the belief in having consumed alcohol are independent of one another. Therefore, Hull and Bond concluded that if one is interested only in the pharmacological effects of alcohol consumption, comparing an alcohol condition with a placebo condition is the appropriate design. Finally, we assessed participants' commitments to their goals by asking how disappointed they would feel if they were not to attain their goals (Oettingen et al., 2001; Wicklund & Gollwitzer, 1982).

We hypothesized that participants in the alcohol condition would feel strongly committed to their goals, irrespective of their expectations, whereas participants in the placebo condition would feel committed to their goals in line with their expectations. Consequently, in light of low expectations, participants who consume alcohol should feel more committed to their goals than participants who consume a placebo; not so in light of high expectations.

Method

Participants

Sixty undergraduate students (46 female and 14 male) at a large German university, with a mean age of 25.83 ($SD = 5.21$) years participated in this study, which was advertised as a study on "alcohol and perception." Participants were required to be at least 18 years of age, and we screened them by telephone with the Michigan Alcoholism Screening Test (Selzer, 1971) to exclude participants who consume alcohol at a high-risk level. In addition, only students who were not on medication and not pregnant were allowed to participate. The study was approved by the ethics commission of the German Psychological Association, as well as by the German Medical Association. We asked participants to abstain from eating for at least 4 hr and from drinking alcohol for at least 12 hr prior to the experiment; participants were also requested to refrain from driving to the experiment. They received course credit for participation.

Procedure

Experimental sessions took place after 12:00 p.m., and participants were run individually. The experimenter informed the participants about the experimental procedure, and participants signed a consent form. Next, a research assistant took participants' weight, height, and an initial breathalyzer reading (Dräger Alcotest 6510).

Expectations of success. First, we asked participants "Which personal goal that is directed at starting or maintaining an interpersonal relationship is presently most on your mind?" (participants named, e.g., "start a relationship with a person I got to know" and "visit my brother in France"). To measure expectations, we asked "How likely do you think it is that you will attain your goal?" on a 7-point scale ranging from 1 (*not at all likely*) to 7 (*very likely*). To measure incentive value, we asked "How important is it to you that you will attain your goal?" on a 7-point scale ranging from 1 (*not at all important*) to 7 (*very important*). According to Klinger (1975) and Heckhausen (1977), the subjective importance of goal attainment reliably indicates the incentive value of goals.

Beverage administration. We randomly assigned participants to one of the two conditions (alcohol and placebo). All participants were told that they would receive alcohol. The experimenter mixed the drinks from appropriate bottles in a graduated cylinder in plain sight of the participants. Participants in the alcohol condition saw their drinks being mixed from a tonic bottle and a bottle labeled "vodka" that contained 40% vodka (Moskovskaya). Participants in the placebo condition saw their drinks being mixed from a tonic bottle and a bottle labeled "vodka" that contained decarbonated tonic.

The amount of alcohol that participants in the alcohol condition received was calculated individually for each participant to result in a peak blood alcohol content (BAC) of .04%. To calculate the amount of alcohol, we used a BAC calculator that considered gender, weight, height, and age (Schmidt, 2006). The drinks were mixed in a ratio of five parts tonic and one part vodka; at this dilution individuals cannot reliably detect the presence of vodka (Marlatt, Demming, & Reid, 1973). Participants in the placebo condition received the respective amount of liquid. The experimenter added a squirt of lime juice and poured the beverages into four glasses. To enhance the credibility of the placebo, all glasses were smeared with vodka prior to the start of the experiment. The experimenter instructed participants to consume each drink within 8 min and stressed the importance of adhering to the 8-min rule.

While consuming their drinks, participants watched a neutral movie about an art exhibition (Kabisch, 2002). During that period of time, participants were left alone in the laboratory room. A tone sounded every 8 min to prompt the participants to finish their current drink and start drinking the next. After participants finished

their last drink, the movie continued for another 15 min, allowing for the absorption of the alcohol (the movie had a total playtime of 47 min). Once the movie ended, we took a second BAC reading. Whereas participants in the alcohol condition saw their actual BAC, for participants in the placebo condition, the breathalyzer was preset to read a random value of around .04%.

Goal commitment. To measure commitment, we asked "How disappointed would you feel if you did not attain your goal?" on a 7-point scale ranging from 1 (*not at all disappointed*) to 7 (*very disappointed*). This item has been used in previous studies as an indicator of commitment (Oettingen, 2000; Oettingen et al., 2001). Finally, to check the effectiveness of the placebo manipulation, we asked participants to estimate the amount of alcohol consumed equivalent to glasses of wine. The experimenter then thanked and fully debriefed the participants. We asked participants to remain in the laboratory until their BAC dropped below .03% and encouraged them to contact us any time if they had further questions.

Results

BACs

The initial BAC for all participants was 0%. Participants in the alcohol condition had a mean BAC of .038% ($SD = .015$) after the beverage consumption.

Manipulation Checks

When asked to estimate the amount of alcohol they had consumed, 2 participants in the placebo condition indicated not having consumed any alcohol. These participants were excluded from the analyses. The remaining participants in the placebo condition estimated having consumed fewer glasses of wine ($M = 1.62$, $SD = .96$) than participants in the alcohol condition ($M = 2.55$, $SD = 1.04$), $t(56) = 3.35$, $p < .01$. Given that all remaining participants in the placebo condition reported some alcohol in their beverages, the placebo manipulation appeared credible for establishing the expectation of receiving alcohol.

Descriptive Analyses

Mean expectation of attaining the goal was 4.55 ($SD = 1.52$) on the 7-point scale. Mean incentive value of the goal was 5.93 ($SD = 1.32$) on the 7-point scale, indicating that participants indeed named goals that were highly important to them. Mean expectation and incentive value did not correlate substantively ($r = .18$, *ns*). The mean of our dependent variable commitment was 5.47 ($SD = 1.43$) in the alcohol condition and 5.36 ($SD = 1.22$) in the placebo condition on the 7-point scale.

Expectations–Commitment Link

To investigate whether expectations predict commitment in the alcohol and placebo conditions, we conducted simple regression analyses. As hypothesized, expectations did not predict commitment in the alcohol condition, $\beta = .01$, $t(28) = .06$, *ns,* but predicted commitment in the placebo condition, $\beta = .55$, $t(26) = 3.32$, $p < .01$ (see Figure 1). To examine whether the slopes of the regression lines differed from each other, we used a general linear model (GLM) with commitment as dependent variable, condition as fixed between-subject factor, and the continuous expectation measure, as well as the interaction of Condition × Expectation as independent variables (Aiken & West, 1991). We observed a marginal significant main effect of condition, $\beta = -.75$, $t(54) = 1.84$, $p < .10$, and the predicted interaction effect, $\beta = 1.00$, $t(54) = 1.92$, $p < .05$, indicating that the relation between expectation and commitment in the alcohol condition was weaker than in the placebo condition.

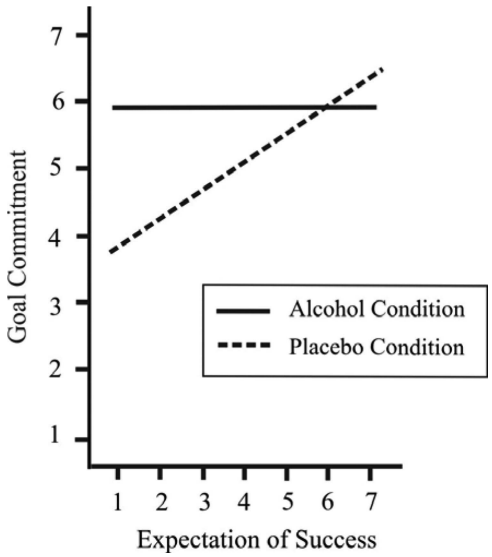

Figure 1. Regression lines depict the link between expectations and commitment as a function of condition. $p < .05$.

Moreover, presumably because they focus on the desired outcomes, rather than on their expectations, intoxicated participants should feel *strongly* committed to their goals. Therefore, the effect of alcohol on commitment should manifest itself particularly in light of bleak prospects. Indeed, when expectations were low, participants in the alcohol condition felt more committed than did participants in the placebo condition, $t(54) = 1.80$, $p < .05$, but when expectations were high, commitment between the alcohol and the placebo conditions did not differ, $t(54) = .58$, *ns*.

Gender Effects

To investigate possible gender effects, we repeated the above analyses, adding gender, Gender × Condition, Gender × Expectation, and Gender × Condition × Expectation into the regression equation. We did not observe any main or interaction effects with gender, (ts < 1.56, *ns*).

Discussion

Participants who consumed alcohol felt strongly committed to their goals, irrespective of their expectations, whereas participants who consumed a placebo had their expectations incorporated in their commitments: They felt strongly committed to their goals when expectations were high and weakly committed to their goals when expectations were low. Furthermore, intoxicated participants' lack of considering their expectations particularly played out when chances to attain the goals were grim: In light of low

expectations, participants in the alcohol condition felt more committed to their goals than did participants in the placebo condition, whereas in light of high expectations, commitment did not differ between conditions. Thus, our results suggest that alcohol creates strong commitments in light of low expectations.

What are the implications of our findings for goal striving when individuals are sober again? Would intoxicated individuals' strong commitments push them to pursue their goals intensively and persistently over time, regardless of their low expectations? Or would intoxicated individuals, when sober again, adjust their efforts for goal attainment to their low expectations? To answer this question, we conducted a second study. Previous research focused on investigating either the effects of alcohol on immediate behavior while participants were still intoxicated or the long-term behavioral effects of chronic alcohol consumption (summary by Hull & Slone, 2004). Study 2 investigates whether a one-time alcohol consumption affects behavior over time, even after the immediate effect of the drug has vanished.

Moreover, in Study 2, we wanted to replicate the results of Study 1 and address the following issues: First, in Study 1, as a manipulation check to investigate whether participants in the placebo and alcohol conditions had comparable beliefs in having consumed alcohol, we asked them to estimate the amount of alcohol they had consumed during the experiment. However, participants in the placebo condition reported having consumed less alcohol than did participants in the alcohol condition. Therefore, in Study 2, we increased our efforts to establish comparable beliefs in having consumed alcohol between the alcohol and placebo conditions by running a double-blind design to prevent the experimenter from unintentionally conveying any information regarding the beverage content to the participants.

Second, individuals who frequently consume alcohol may develop a tolerance toward alcohol (Vogel-Sprott & Fillmore, 1999). Therefore, in Study 2, we administered a personal drinking habits questionnaire (Vogel-Sprott, 1992). We wanted to investigate whether the effect of alcohol on the expectancy–commitment link would be attenuated in participants who consume more alcohol in their everyday life, compared with those who consume less alcohol.

Third, one may argue that intoxicated individuals feel strongly committed to their goals because alcohol leads them to misjudge their expectations, rather than to ignore their expectations. In other words, intoxicated individuals may overestimate their chances of success and therefore feel strongly committed to their goals. Therefore, in Study 2, to examine whether the effect of alcohol on the expectations–commitment link was due to alcohol-induced changes in the mean level of expectations we assessed expectations a second time after participants consumed their beverages and indicated their commitments.

Fourth, although alcohol-myopic effects have been documented at BACs similar to participants' mean BAC in Study 1 (.38%; e.g., Gross, Bennett, Sloan, Marx, & Juergens, 2001; Steele, Critchlow, & Liu, 1985, Study 1), reviews indicate that alcohol effects on social cognitive processes reliably occur at a BAC of about .05% (Koelega, 1995; Sayette, 1993). Therefore, in Study 2, we selected an alcohol dosage that would produce a mean BAC of at least .05%. This dosage appeared not to be too high for participants in the placebo condition to believe in having consumed alcohol (Marlatt & Rohsenow, 1980). Finally, to examine whether our results bear up against different indicators of commitment, we added two more items to assess commitment.

Study 2: Goal Striving Over Time

Study 2 focused on how individuals act toward realizing their goals once they are sober. Specifically, we examined whether intoxicated participants' strong commitments would translate into concrete actions for goal attainment. We used the same design and procedure as in Study 1. In addition, to assess goal striving over time, 3 weeks after the experiment, we asked participants to indicate all actions they had undertaken to realize their goals since they took part in the experiment. The number of actions individuals perform for goal attainment are a basic indicator of their involvement in goal striving (Kiesler, 1971; Wicklund & Gollwitzer, 1982), and the same questions were used in previous studies to assess goal striving (Oettingen et al., 2001; Wicklund & Gollwitzer, 1982). Moreover, a meta-analysis by Webb and Sheeran (2006) indicated that self-report measures are reliable indicators for goal striving.

Because commitment fosters goal striving (Klein et al., 1999), intoxicated individuals' strong commitments might urge them to act toward realizing their goals, even after individuals have become sober. However, once the acute alcohol effects have vanished, individuals are no longer in a state of shortsightedness that leads them to ignore their expectations. Therefore, we hypothesized that once low-expectancy participants who consumed alcohol are sober, they refrain from pursuing their goals in line with the strong commitments they held when they were intoxicated. Rather, they should adjust their efforts for goal attainment to reflect their low expectations. Thus, whereas expectations should predict goal striving in the alcohol as well as in the placebo conditions, commitment after the beverage administration should *not* predict goal striving in the alcohol condition but should predict goal striving in the placebo condition.

Method

Participants

Sixty-three undergraduate students (47 female and 16 male) at a large German university, with a mean age of 25.17 years (SD = 5.06) participated in this study, which was advertised as a study on "alcohol and perception." Participants had to meet the same requirements as in Study 1 (being over 18, not being on medication, and not being pregnant) and were screened by telephone with the Brief Michigan Alcoholism Screening Test (Pokorny, Miller, & Kaplan, 1972). The study was approved by the ethics commission of the German Psychological Association as well as by the German Medical Association. We asked participants to abstain from eating for at least 4 hr and from drinking alcohol for at least 12 hr prior to the experiment; participants were also requested to refrain from driving to the experiment. They received course credit for participation.

Procedure

We used the same design and procedure as in Study 1, with the following modifications: First, to assess participants' drinking habits, after participants signed the consent form, they completed the Personal Drinking Habits Questionnaire (Vogel-Sprott, 1992). This questionnaire yielded three measures of an individual's

current drinking habits: (a) frequency (number of drinking occasions per week), (b) quantity (milliliters of absolute alcohol per kilogram body weight typically consumed during a single drinking occasion), and (c) duration (time span in hours of a typical drinking session).

Second, to ensure a double-blind administration of the beverages, prior to the start of the experiment a research assistant had prepared bottles labeled "vodka" in the room where the experiment took place. Whereas in the alcohol condition, the prepared bottles contained 40% vodka (Moskovskaya), in the placebo condition, the bottles contained decarbonated tonic water. Before mixing the drinks in plain sight of the participants, the experimenter, who was blind to the content of the bottles, told all participants that they would now receive an alcoholic beverage. We adopted this procedure from Abrams and Wilson (1983). A pretest showed that when mixing the drinks, the experimenter could not reliably guess the content of the bottles.

Third, the amount of alcohol that participants in the alcohol condition received was calculated to result in a peak BAC of .05%. Accordingly, for participants in the placebo condition, the breathalyzer was preset to read a random value of around .05% at the second BAC reading.

Fourth, because of the higher alcohol dosage than in Study 1, we chose a slightly longer movie to allow for the absorption of the alcohol. The movie was a documentary about llamas (Arendt & Schweiger, 1991) and had a total playtime of 52 min.

Fifth, we added two more items to our commitment measure from Study 1. Specifically, we added "How hard would it be for you if you did not attain your goal?" and "How determined are you to attain your goal?" Participants indicated their answers on 7-point scales. All items were used in previous studies as indicators of commitment (e.g., Oettingen, 2000; Oettingen et al., 2001; Tubbs & Dahl, 1991). Because the three items showed good internal consistency (Cronbach's $\alpha = .73$), we combined them into an index of commitment.

Sixth, to examine whether alcohol leads individuals to overestimate their expectations, rather than to ignore their expectations, we assessed expectations once more after participants had consumed their beverages and indicated their commitments. We measured expectations with the same item as in Study 1.

Seventh, to assess participants' subsequent goal striving, 3 weeks after the experiment, we sent out a questionnaire that participants were asked to answer within 3 days. Fifty-five participants (87%) sent the follow-up form back on time. Participants were to list all actions they had undertaken to attain their goals since they had participated in the experiment (participants named, e.g., "went out with some fellow students" and "talked to my boyfriend"). The number of actions participants listed was our indicator for goal striving. We debriefed participants in a final letter that explained in detail the purpose, hypotheses, and design of the experiment. Moreover, in the letter we encouraged participants to contact us any time if they had further questions.

Results

Drinking Habits

Participants' mean frequency of drinking was 1.60 ($SD = .94$) times per week, with an average quantity per occasion of 0.93 ($SD = 0.43$) ml absolute alcohol per kilogram of body weight. This is equivalent to an average consumption of 3.42 standard drinks per occasion for the whole sample. A standard drink is defined by the National Institute on Alcohol Abuse and Alcoholism (2007) as any drink that contains about 18 ml of absolute alcohol, for example a standard bottle (355 ml) containing beer of 5% alcohol. On average, participants consumed 5.86 ($SD = 4.66$) standard drinks per week. The mean duration of a drinking session was 4.59 ($SD = 1.87$) hrs. There were no differences between conditions in frequency, quantity, and duration of drinking ($ts < 1.25$, *ns*), indicating that participants of both conditions had comparable experiences with alcohol.

BACs

The initial BAC for all participants was 0%. Participants in the alcohol condition had a mean BAC of .052% ($SD = .013$) after the beverage consumption.

Manipulation Checks

When asked to estimate the amount of alcohol they had consumed equivalent to glasses of wine, 2 participants in the placebo condition and 1 participant in the alcohol condition indicated not having consumed any alcohol. These participants were excluded from the following analyses. On average, participants in the placebo condition estimated having consumed 2.47 ($SD = 1.13$) glasses of wine and participants in the alcohol condition 2.65 ($SD = 1.08$) glasses of wine. There was no difference between conditions, $t(58) = .63$, *ns*. Thus, participants of the alcohol and placebo conditions had comparable beliefs regarding the amount of alcohol they consumed.

Descriptive Analyses

Before the beverage administration, mean expectation of attaining the goal was 4.98 ($SD = 1.31$), and mean incentive value was 6.08 ($SD = 1.14$) on the 7-point scales, indicating that participants indeed named goals that were highly important to them. Expectation before the beverage administration and incentive value correlated positively ($r = .37$, $p < .01$). After the beverage administration, mean expectation was 5.05 ($SD = 1.50$). Mean commitment was 5.23 ($SD = 1.18$) in the alcohol condition and 4.74 ($SD = 1.51$) in the placebo condition. Finally, on average, participants in the alcohol condition had taken 2.93 ($SD = 1.93$) actions toward goal attainment in the 3 weeks after the experiment, and participants in the placebo condition had taken 3.57 ($SD = 1.85$) actions.

Expectations–Commitment Link

We replicated the results from Study 1: Expectations did not predict commitment in the alcohol condition, $\beta = .20$, $t(29) = 1.09$, *ns,* but predicted commitment in the placebo condition, $\beta = .77$, $t(27) = 6.29$, $p < .001$ (see Figure 2). A GLM with commitment as dependent variable, condition as fixed between-subjects factor, and the continuous expectation measure as well as the interaction of Condition × Expectation as independent variables revealed a main effect of condition, $\beta = 1.32$, $t(56) = 3.19$, $p < .01$, and the predicted interaction effect, $\beta = 1.47$, $t(56) = 2.87$,

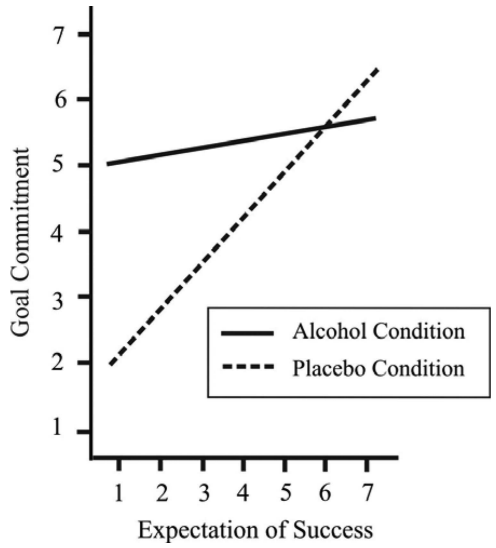

Figure 2. Regression lines depict the link between expectations before the beverage administration and commitment as a function of condition. $p < .05$.

$p < .01$, indicating that the relation between expectations and commitment was weaker in the alcohol condition than in the placebo condition. Moreover, as in Study 1, when expectations were low, participants in the alcohol condition felt more committed than participants in the placebo condition, $t(56) = 3.23$, $p < .01$. When expectations were high, commitment did not differ between the alcohol and the placebo conditions, $t(56) = 1.56$, *ns*.

Drinking habits as a moderator. To investigate whether the effect of alcohol on the expectancy–commitment link would be attenuated in participants who consume more alcohol in their everyday life compared with participants who consume less alcohol, we repeated the above analysis entering the average amount of alcohol per kilogram of body weight participants consumed per week as a main effect, as an interaction with condition, as an interaction with expectation, and as an interaction with condition and expectation in our GLM. Neither the main effect of alcohol consumed per week nor the respective interaction effects were significant (ts $< .14$, *ns*), indicating that participants' past experiences with alcohol consumption did not influence the effect of alcohol on the expectancy–commitment link.

Change in expectations as alternative process. To examine whether the effect of alcohol on commitment is due to changes in the level of expectations, we computed a 2×2 mixed analysis of variance on expectations with measurement time (before vs. after the beverage consumption) as a within-subject factor and condition (alcohol vs. placebo) as a between-subjects factor. We did not observe any main or interaction effects (Fs < 0.50, *ns*), indicating that alcohol did not change expectations.

Expectations–Goal Striving Link

Consistent with our assumption that expectations before the beverage administration predict goal striving in the 3 weeks following the experiment in both conditions, expectations predicted the number of actions initiated toward goal attainment in the alcohol condition, $\beta = .42$, $t(27) = 2.40$, $p < .05$, as well as in the placebo condition, $\beta = .42$, $t(21) = 2.13$, $p < .05$. A GLM with number of actions as dependent variable, condition as fixed between-subjects factor, and the continuous expectation measure and the interaction of Condition $\times$ Expectation as independent variables revealed a main effect of expectations, $\beta = .42$, $t(48) = 2.09$, $p < .05$. Neither the main effect of condition nor, it is important to note, the Condition $\times$ Expectation interaction effect were significant (ts < 0.82, *ns*). Thus, expectations before the beverage administration predicted goal striving after the experiment, regardless of whether participants consumed alcohol or a placebo during the experiment.

Commitment–Goal Striving Link

Consistent with our assumption that commitment after the beverage administration differentially affects goal striving in the alcohol condition versus the placebo condition, commitment did not predict the number of actions initiated toward goal attainment in the alcohol condition, $\beta = -.20$, $t(27) = 1.07$, *ns,* but predicted the number of actions in the placebo condition, $\beta = .58$, $t(21) = 3.26$, $p < .01$. A GLM with number of actions as dependent variable, condition as fixed between-subjects factor, and the continuous commitment measure and the interaction of Condition $\times$ Commitment as independent variables revealed a main effect of condition, $\beta = -1.10$, $t(48) = 2.22$, $p < .05$, and the predicted interaction effect, $\beta = 1.56$, $t(48) = 2.75$, $p < .01$, indicating that the relation between commitment and goal striving was weaker in the alcohol condition than in the placebo condition.

Gender Effects

To investigate possible gender effects, we repeated the above analyses adding gender, gender as an interaction with condition, gender as an interaction with the respective independent variable, and gender as an interaction with condition and the respective independent variable in the GLMs. We did not observe any main or interaction effects with gender (ts < 1.16, *ns*).

Goal Commitment as a Mediator for the Relation Between Expectations and Goal Striving in the Placebo Condition

Because in the alcohol condition, expectations before the beverage administration did not predict commitment, $\beta = .20$, $t(29) = 1.09$, *ns*, commitment does not qualify as a mediator for the relation between expectations and goal striving in the alcohol condition (see Figure 3A; Baron & Kenny, 1986). However, because in the placebo condition, expectations before the beverage administration predicted commitment, $\beta = .77$, $t(27) = 6.29$, we tested whether commitment predicted goal striving over and above expectations in the placebo condition. Indeed, commitment still predicted number of actions initiated toward goal attainment, $\beta = .71$, $t(20) = 2.25$, $p < .05$, when expectations were entered into the regression. In addition, the link between expectations and number of actions, $\beta = .42$, $t(21) = 2.13$, $p < .05$, was reduced to nonsignificance when commitment was entered into the respective regression, $\beta = -.16$, $t(20) = .50$, *ns*. The Sobel (1982) test showed that there was an indirect effect of expectations on goal

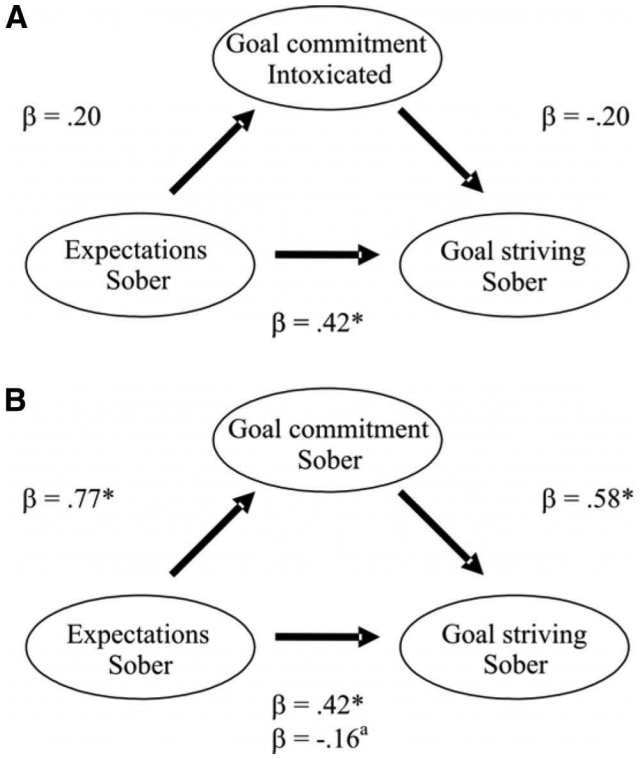

Figure 3. Relation between expectations before the beverage administration, commitment, and goal striving in the 3 weeks after the experiment in the alcohol condition (A) and the placebo condition (B). [a] Expectations predicting goal striving controlled for commitment. * $p < .05$.

striving through commitment ($z = 2.12$, $p < .05$). Thus, commitment fully mediated the relation between expectations before the beverage administration and goal striving in the placebo condition (see Figure 3B).

Discussion

Study 2 replicated the findings of Study 1: Alcohol led participants to feel strongly committed to their goals, even when chances to attain their goals were bleak. Moreover, Study 2 showed that once the effects of the alcohol had vanished, participants adjusted their efforts for goal attainment to their expectations: The number of actions initiated for goal attainment within the 3 weeks following the experiment depended on expectations in both conditions. It is important to note that although participants reported feeling strongly committed toward reaching their goals while intoxicated, once sober, they did not act according to their strong commitments. These results suggest that commitments of low-expectancy individuals who consumed alcohol were empty. When intoxicated, participants reported feeling dedicated toward reaching their goals, but when it came to actually acting toward reaching their goals, they did not put their money where their mouths were.

In addition, in participants who consumed a placebo, commitment mediated the effect of expectations on goal striving. This finding is in line with previous research indicating that commitment mediated the effect of self-efficacy expectations on test performance (Johnson, 2005). Apparently, commitment functions as a mechanism for the effect of expectations on goal striving. That is, expectations determine goal striving via individuals' commitments to their goals.

Second, Study 2 suggests that the observed effect of alcohol on commitment stems from the pharmacological properties of alcohol, rather than from participants' belief in having consumed alcohol; participants in the alcohol and the placebo conditions believed they had consumed a comparable amount of alcohol. However, one may argue that participants' estimates of their beverage content may be influenced by experimenter demand (Knight, Barbaree, & Boland, 1986).Therefore it is difficult to fully disentangle the pharmacological effects of alcohol from the effects of the belief in having consumed alcohol (Martin & Sayette, 1993). To further investigate the effects of the belief in having consumed alcohol on commitment, future research should use an alcohol, a placebo, as well as an additional control condition in which participants are told that they receive a nonalcoholic beverage and receive a nonalcoholic beverage.

Third, participants' drinking habits did not influence the effect of alcohol on commitment. This result is in line with previous research in which alcohol tolerance effects were observed only in people who regularly drink very large amounts of alcohol (alcoholics; e.g., Chesher & Greeley, 1992). Alcohol tolerance effects in social drinkers were found only when a specific response was rewarded, mentally rehearsed before drinking, or learned in an intoxicated state (summary by Vogel-Sprott & Fillmore, 1999).

Fourth, the observed effects of alcohol on commitment are unlikely to be due to alcohol-induced changes in expectations, because alcohol did not affect the absolute level of expectations; participants' expectations before the beverage consumption did not differ from their expectations after the beverage consumption in both conditions. Accordingly, our findings suggest that intoxicated individuals feel strongly committed to their goals because they do not consider their expectations, not because they overestimate their expectations. However, because participants in Study 2 indicated their level of expectations twice within the same session, one could argue that the demands to give consistent answers were high. Future research may use a between-subjects design to further investigate the effect of alcohol on the absolute level of expectations.

Finally, in Study 2, we used a combination of different indicators to measure commitment. In line with Locke, Latham, and Erez's (1988) definition of goal commitment as people's attachments to or determinations to reach their goals, our measure of commitment includes indicators of participants' attachment to their goals and their determination to reach their goals.

General Discussion

In two studies, alcohol led participants to feel strongly committed to their goals, irrespective of their expectations, and this effect particularly manifested itself when chances of goal attainment were bleak. Specifically, participants who consumed alcohol felt more committed to their goals than did participants who consumed a placebo when prospects for goal attainment were low. However, when prospects for goal attainment were high, participants who consumed alcohol as well as participants who consumed a placebo felt strongly committed to their goals. Moreover, Study 2 suggests that the strong commitments in low-expectancy individuals who

are intoxicated were empty. That is, once sober, low-expectancy participants failed to act on their commitments to realize the desired outcomes.

Contrary to intoxicated participants, those who consumed a placebo based their commitments on their considerations about the probability of attaining the goals. Thus, in sober participants, strong commitments derived from high expectations. High expectations have been consistently found to foster goal striving as well as successful performance (e.g., Bandura, 1997; Oettingen & Mayer, 2002; Taylor & Brown, 1988).

Commitment and Psychopathology

Commitment is a variable of great importance for mental and physical health. For instance, commitment to behavior change may influence whether individuals abandon maladaptive behaviors, such as smoking, excessive drinking, or unhealthy eating. In addition, individuals who are committed to pursue personal goals may show enhanced well-being compared with individuals who are not committed (Emmons, 1986). However, when individuals cannot attain goals to which they are strongly committed, they are likely to experience negative psychological consequences, such as disappointment, depression, dysphoria, and aggression (Brunstein, 1993; Klinger, 1975; Strauman & Higgins, 1987). According to Klinger (1975), one way to overcome these negative consequences is to disengage from the unfeasible goals. Our finding that intoxicated people feel strongly committed to unfeasible goals suggests that ongoing alcohol consumption may interfere with this disengagement process.

Alcohol Use and Abuse

There are many reasons for why people use alcohol (Leonard & Blane, 1999). To name just one, Steele and Josephs (1990) suggested that by inflating self-evaluations, alcohol brings people mentally closer to their ideal selves. This makes alcohol attractive, especially if the discrepancies between the ideal selves and the real selves are large and if the ideal selves are important to people. Similarly, our findings suggest that by leading individuals to ignore their expectations of attaining their goals, alcohol brings people mentally closer to goals for which they have only low expectations. This should make alcohol attractive, especially for people who hold goals that are unlikely to be attained but that are highly important to them. Consequently, individuals who do not expect to attain their goals may be more at risk of using and abusing alcohol than those who expect to attain their goals.

Moreover, for the goal to reduce one's alcohol consumption (Palfai, 2006), the findings of Study 2 that once individuals are sober, they do not follow up on their strong commitments imply that although people might feel strongly committed to quit drinking while they are intoxicated, they still might refrain from taking the necessary steps (e.g., starting a therapy) to attain their goal once they are sober.

Limitations and Future Research

Although we showed that intoxicated individuals' strong commitments did not determine their goal striving once they were sober, we did not investigate whether thinking about personal goals in an intoxicated state has immediate behavioral consequences for goal striving while individuals are still intoxicated. Further research may investigate whether intoxicated individuals' not considering their expectations has immediate behavioral effects while they are intoxicated, for example in terms of increased risk-taking.

In addition, the alcohol doses in this research were relatively low compared with doses typically employed in alcohol research (see e.g., Sayette, 1993; Steele & Southwick, 1985). Future studies may use higher doses to investigate whether the effect of alcohol on the expectancy–commitment link increases at higher BACs.

Furthermore, intoxicated participants felt strongly committed to their goals, presumably because the alcohol-induced shortsightedness led them to focus on the desired outcomes, rather than on information about the probability of reaching the outcomes. However, the precise cognitive mechanisms underlying alcohol myopia are yet unclear. For instance, some researchers have suggested that alcohol leads individuals to focus on the most salient aspects of a situation by impairing their ability to divide attention, rather than by narrowing their attentional focus (Curtin, Lang, Patrick, & Stritzke, 1998; Curtin, Patrick, Lang, Cacioppo, & Bierbaumer, 2001). Other researchers have emphasized the role of impaired sustained attention in explaining alcohol-myopic effects (Sher, Bartholow, Peuser, Erickson, & Wood, 2007). Further research is needed to investigate the precise mechanisms for the effect of alcohol on commitment. Moreover, future researchers may manipulate the salience of participants' expectations to investigate whether focusing on low expectations leads intoxicated individuals to actually feel less committed to their goals than sober individuals.

Finally, future research may investigate whether the use of a self-regulation strategy that makes people's expectations salient (e.g., by mentally contrasting a desired future outcome with obstacles in the present reality; Oettingen, 2000) can counteract the observed effects of alcohol on commitment and lead intoxicated individuals to consider their expectations when thinking about their goals.

Conclusion

Alcohol distorts people's minds in often unfavorable ways: The present research suggests that alcohol leads people to feel strongly committed to their goals, even when prospects to attain these goals are bleak. However, our findings also indicate that intoxicated people's strong commitments in light of bleak prospects are empty commitments, because once sober again, people do not pursue their goals in line with the strong commitments they report when intoxicated. Or, to put it in a nutshell: People may indicate being determined to reach their goals after having consumed alcohol, but once sober again, they do not walk the talk.

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Received August 20, 2008
Revision received March 23, 2009
Accepted March 27, 2009 ■