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ABSTRACT

If people in a normal, baseline state are asked about certain behaviors, such as drinking and driving, they are likely to report negative intentions; however, the context within which intentions are assessed may significantly affect the relationship among attitudes, intentions, and behavior. Male undergraduates who completed a questionnaire about drinking and driving either while sober (n=23) or after consuming alcohol (n=22) reported similar negative intentions regarding questions such as "Would you drink and drive?" However, when a contingency such as "Would you drink and drive if you had only a short distance to go?" was embedded in the question, intoxicated subjects reported less negative intentions than sober subjects. These results are consistent with the term "alcohol myopia" (Steele and Josephs, 1990) which states that intoxication decreases cognitive capacity, so that people can attend only to the most salient cues. Intoxicated subjects may be focussing on excuses to drink and drive, discounting possible negative outcomes of the behavior. Differences in the environment or the physical, social, or emotional state of the individual can attenuate the observed relation between intentions and behavior. (Author/MSF)

The Effects of Alcohol on Intentions to Drink and Drive

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Abstract

This study addresses the hypothesis that intentions to engage in specific behaviors are affected by altered psychological states. Male undergraduates completed a questionnaire about drinking and driving based on Fishbein and Ajzen's (1975) Theory of Reasoned Action, either while sober (n = 23) or after consuming alcohol (n = 22). Results indicated that when simply asked 'would you drink and drive?' the groups reported similar intentions. However, when a contingency was embedded in the question (e.g., would you drink and drive if you only had to go a short distance?), intoxicated subjects reported less negative intentions toward drinking and driving. These results are consistent with 'alcohol myopia' (Steele & Josephs, 1990), which states that alcohol intoxication decreases cognitive capacity, so that people can only attend to the most salient cues. In this case, intoxicated subjects may be focussing on excuses to drink and drive, and discounting possible negative outcomes of this behavior. Implications of these findings for the intention-behavior discrepancy are discussed.

The effects of alcohol on intentions to drink and drive

Why do people engage in behaviors that contradict their intentions? If we ask people about issues such as drinking and driving (e.g., Denton & Krebs, 1990), or having sex without a condom (e.g., Campbell, Peplau, & DeBro, 1992), people are likely to report negative intentions toward these actions. Paradoxically, the same individuals often admit that at one time or another, they have engaged in these behaviors. Research testing the Theory of Reasoned Action (Fishbein & Ajzen, 1975) has shown that attitudes can predict intentions with reasonable accuracy. However, in some domains (e.g., drinking and driving) intentions are inconsistent predictors of behavior. In this study we hypothesize that the context in which intentions are assessed may be an important factor moderating the relationship between attitudes, intentions, and behavior.

Intentions, which are used to predict behavior, are typically assessed when individuals are in a normal, baseline state. However, the decision whether to engage in a specific behavior often occurs in an environment far removed from the context in which intentions were assessed. Also, such decisions are often made in an altered psychological state (i.e., different from the baseline state in which intentions are typically measured). Such changes in social, emotional, and cognitive states may influence the decision-making process. Here, we apply this hypothesis to drinking and driving.

Research by Steele and Josephs (1990) has detailed the social and cognitive effects of alcohol, demonstrating that intoxication can induce 'alcohol myopia,' by decreasing cognitive capacity and limiting the amount of information to which one can attend. Consequently, individuals who are intoxicated can pay attention to only the most salient aspects of a situation, and response conflicts (i.e., competing impelling and inhibiting cues) are blocked. In this way, alcohol intoxication may preclude a person from recognizing cues that would be perceived in a non-impaired state. For instance, it may be that intoxicated people do not attend to the possible negative consequences of drinking and driving, such as being in a car accident; instead, they may focus on impelling cues, such as wanting to go home as quickly and inexpensively as possible.

We tested this hypothesis in the laboratory by giving attitude questionnaires to subjects who were either sober, or intoxicated to the legal limit, and compared their responses to items assessing intentions to drink and drive. Some of the items were non-contingent in nature, whereas others had a contingency embedded in the question. We expect that subjects in the intoxicated condition will have less negative

intentions about drinking and driving than subjects in the sober condition when a contingency was present, because the contingencies will be more salient than cues normally inhibiting drinking and driving.

There are other plausible reasons why people who are against drinking and driving when sober may in fact do so when faced with that situation. People may drink and drive out of ignorance, not knowing about the legal consequences of this behavior, or accept 'myths' about intoxication (e.g., 'coffee can make a person more sober'). Alternatively, people may not be able to accurately discern how intoxicated they are, and underestimate their blood alcohol level (Jaccard & Turrisi, 1987). We also investigate these possibilities in our research.

Method

Subjects

Forty-five introductory psychology students were recruited for participation in return for course credit, and a sum of money. Males who reported on a pretest that they were at least 19 years old (the legal drinking age in Ontario), owned a car, and reported spending at least $20.00 a month on alcohol were asked to participate.

Measures

Intentions to drink and drive. Subjects responded to items which assessed their intentions to drink and drive, and their history of drinking and driving on a Likert-type scale with endpoints labelled 1 (strongly disagree) and 9 (strongly agree). The scale was scored in such a way that high numbers would reflect positive attitudes toward drinking and driving. Some of the intention items had a contingency, or excuse, embedded in the question, whereas other items did not. See Table 1 for examples of intention items.

Knowledge about drinking and driving. We wanted to determine whether intentions to drink and drive were related to knowledge about this issue. We designed a brief questionnaire assessing knowledge about intoxication (e.g., Drinking coffee, tea, or other caffeinated beverages will help decrease the effects of alcohol), and laws pertaining to drinking and driving (e.g., In order to be charged with drinking and driving, your blood alcohol level must be equal to or over 0.08%).

Estimations of intoxication. Subjects in the alcohol condition were asked to estimate their blood alcohol level, both in a scale form and by estimating the actual percentage of alcohol in the

blood. In addition, we were interested in knowing whether subjects could accurately estimate how intoxicated they would be in a hypothetical situation after consuming different amounts of alcohol. Using the procedure designed by Jaccard & Turrisi (1987) we devised 10 scenarios, and asked subjects to estimate how intoxicated they would be on a scale of -9 (extremely under the legal limit) to +9 (extremely above the legal limit). Each scenario provided subjects with information about the type of drink, the number of drinks, and the time taken to consume the drinks (e.g., If I were to drink five beers in two hours, I would be:). Using each subject's weight, we could calculate how intoxicated he actually would be, and classify estimates into one of four categories (correct perception of being over/below limit, and incorrect perception of being over/below limit, as in Jaccard & Turrisi, 1987).

Procedure

Subjects were run in groups of three, and were assigned to the experimental (alcohol) or control (sober) condition in groups. Upon their arrival, they were informed that they were in the sober ($n = 23$) or the alcohol ($n = 22$) condition. Subjects in the control condition filled out the informed consent, completed the measures described above, and were debriefed. The procedure was identical in the experimental condition, except that subjects were given a dose of alcohol before filling out the questionnaire. Specifically, the weight of each subject was obtained, and this information was used to determine the amount of alcohol (we used alcool, 40% alc./vol.) that would be given to each subject. This amount was measured using a calibrated cylinder, and poured into a flask. Soda (Wink) was used to dilute the alcohol, with a ratio of one part alcohol to two parts soda. Each subject drank three drinks, with twenty minutes between each drink. Fifteen minutes after the last drink, subjects completed the measures. Immediately after doing so, their blood alcohol level was assessed, using a breathalyser. This procedure resulted in an average blood alcohol level of 0.09%, with a standard deviation of 0.01%.

Results

Intentions to drink and drive

We examined non-contingent intentions and found that sober and intoxicated subjects reported equally negative intentions toward drinking and driving (overall mean = 1.58). Next, we formed an index for intentions by subtracting the non-contingent item from the average of six contingent

items (Cronbach's $\alpha = .86$). Controlling for past drinking and driving behavior, there was a significant difference between conditions for this index, F (1, 42) = 4.17, $p < .05$. As expected, subjects who were intoxicated to the legal limit reported greater intentions to drive while intoxicated ($M = 2.68$, $SD = 1.94$) than those who did not consume any alcohol ($M = 1.65$, $SD = 2.09$). These data are represented graphically in Figure 1. Intoxicated subjects were more favorable about drinking and driving only when a contingency was made salient.

Knowledge about drinking and driving

There was no difference between the conditions as to how much they knew about alcohol, or the legal consequences of drinking and driving. Generally, subjects were quite informed about the effects of alcohol, and aware of laws about drinking and driving. However, there was a significant correlation between knowledge about laws pertaining to drinking and driving and past drinking and driving behavior ($r = -.38$, $p < .05$). Subjects who reported drinking and driving in the past were less knowledgeable about the legal implications of this behavior.

Estimates of intoxication

When estimating how intoxicated they would be in various hypothetical situations, subjects were correct 49% of the time. When they were incorrect, they were far more likely to overestimate how intoxicated they would be (95% of errors), rather than underestimate their blood alcohol level (5% of errors). These data are presented in Figure 2.

We calculated how many times each subject underestimated their intoxication level. Intoxicated subjects were no more likely to underestimate their blood alcohol level than their sober counterparts. Moreover, rate of underestimation was unrelated to past drinking and driving behavior.

Finally, subjects in the alcohol condition were asked to estimate their blood alcohol level after consuming the dose of alcohol. They were not very accurate in their estimates; the correlation between actual and estimated blood alcohol levels was very low, r (21) = .08, n.s. Again, there was a tendency for subjects to overestimate their intoxication level --15 out of 21 subjects (71%) did so.

Discussion

When responding to contingent questions, intoxicated subjects were more likely than sober subjects to express intentions to drink and drive. When no excuse to drink and drive was made salient to the subjects, both intoxicated and sober people may have been able to access relevant inhibiting cues (i.e., receiving a fine or license suspension), and therefore decided that they would not engage in this behavior. Even when an excuse to drink and drive was made prominent in these items, sober subjects had the cognitive capacity to weigh the attendant costs and benefits of driving while intoxicated, and indicated an intention not to do so. In contrast, subjects who had consumed alcohol to the legal limit may have only been able to focus on the more salient impelling cue (i.e., getting home very quickly) instead of the less apparent inhibiting cues (i.e., the possible negative outcomes) persuading them to make the decision to drink and drive. In the face of a plausible impelling cue to drink and drive, their 'alcohol myopia' may have kept them from seeing to the possible distant consequences of their actions, attending only to the short-term benefits.

We investigated other factors that may lead people to drink and drive, such as accuracy of estimates of intoxication and knowledge about issues related to drinking and driving. Subjects exhibited a marked tendency to overestimate, rather than underestimate their blood alcohol level. They were also quite knowledgeable about laws pertaining to drinking and driving, and about the effects of alcohol. However, those who had a history of drinking and driving were less familiar with these laws. This suggests that when people drink and drive they know they are doing so, but may not be aware of the consequences.

This study demonstrates that the context in which a behavioral decision is to be made is an important factor to consider when using intentions to predict behavior. Differences in the environment, or the physical, social, or emotional state of an individual can attenuate the observed relation between intentions and behavior. We are currently investigating the generality of these results by studying the effects of alcohol on attitudes and intentions toward drinking and driving in more 'natural' environments (e.g., a campus pub). In addition, we are studying attitudes and intentions toward other behaviors that are decided upon in altered states (e.g., condom use in a state of sexual arousal).

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Table 1.

Contingent items used in
intention questionnaire

1) If I drove my friends to a party or bar, and we had all been drinking, I would feel obligated to drive, even if intoxicated, because I had told my friends that I would drive.

2) If it was possible for me to drive home on back roads that do not usually have much traffic, I would drive while intoxicated.

3) If I only had a short distance to drive, I would drive while intoxicated.

4) If I had been drinking, and had no money to take a cab or a bus, I might drive, even if intoxicated.

5) If I was at a party with friends, and all of my friends were more intoxicated than I was, I would drink and drive.

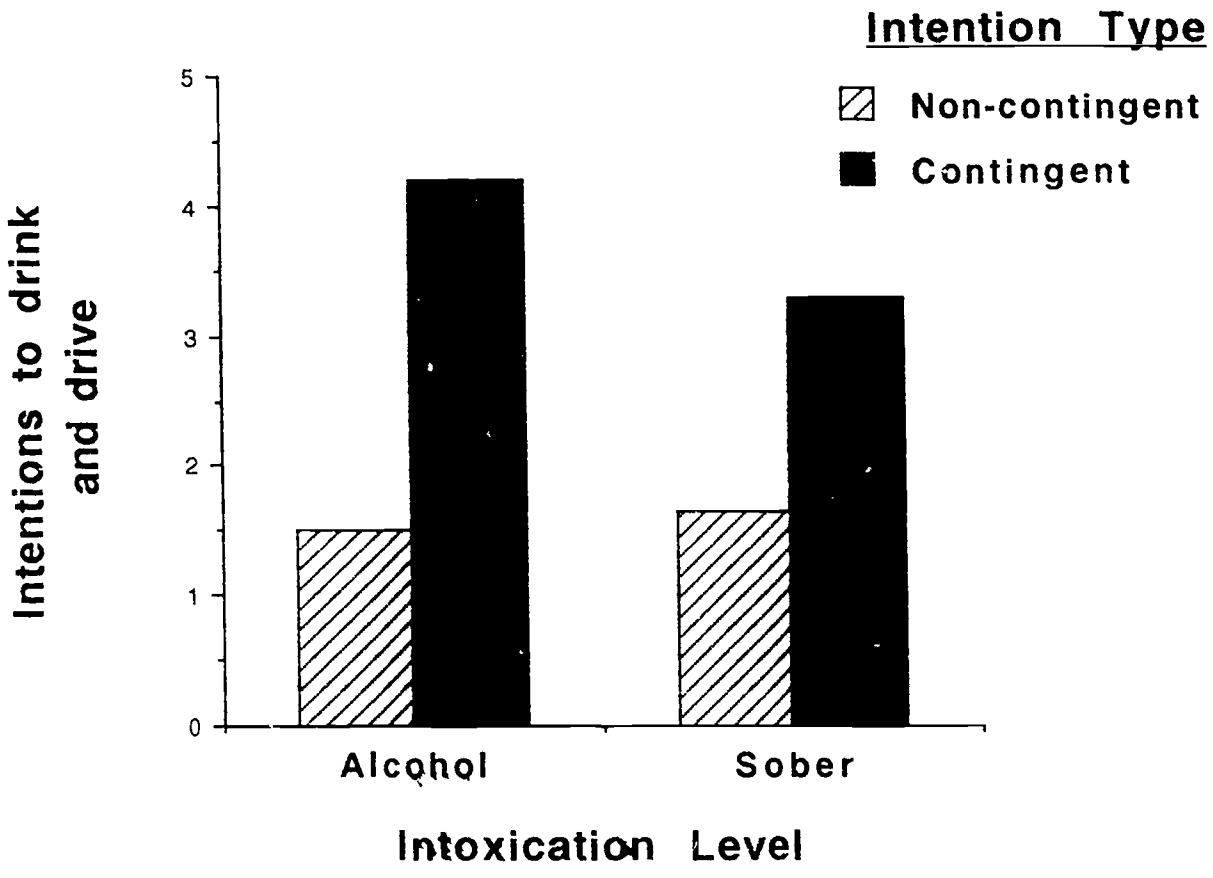
6) If my friends tried to persuade me to drink and drive, I would do so.

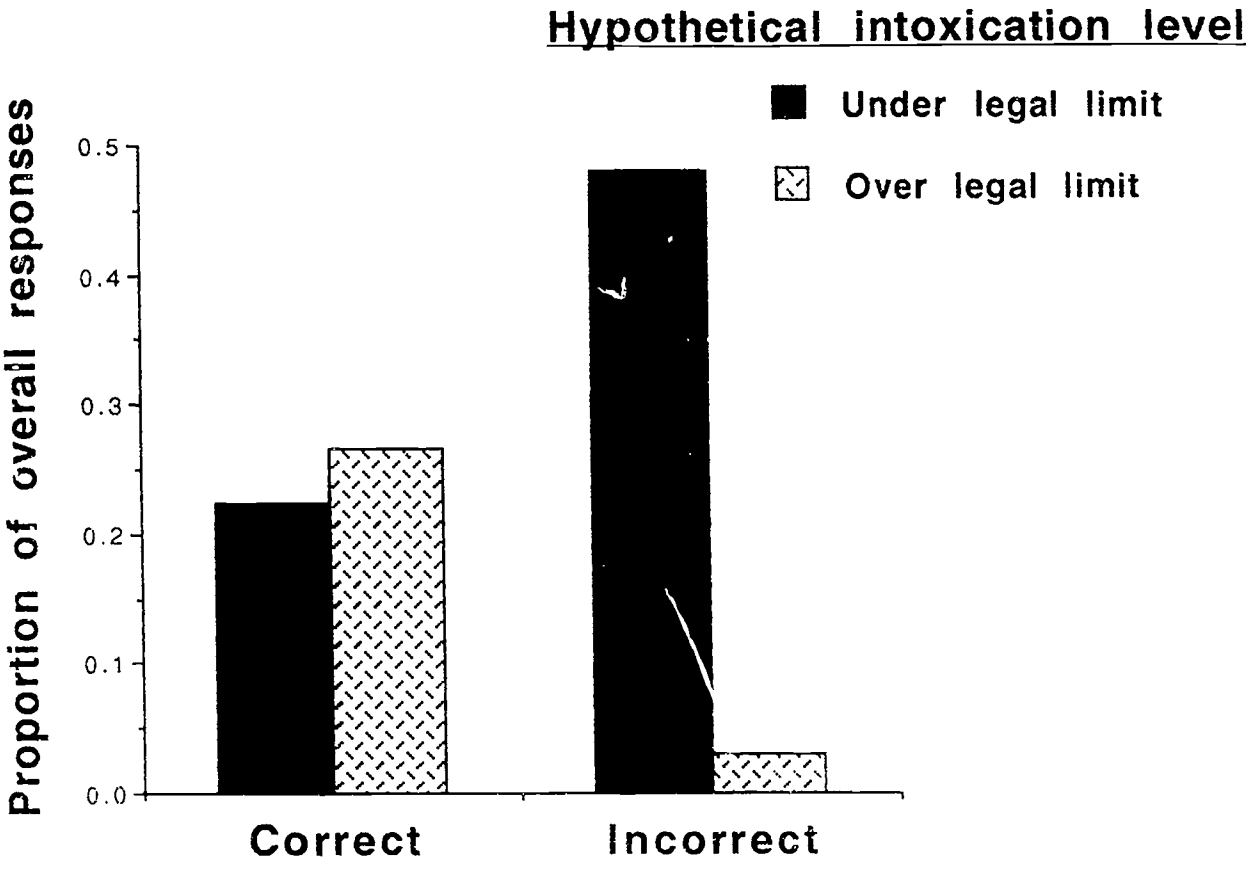
Non-contingent: I will drink and drive the next time that I am out at a party or bar.

Figure Captions

Figure 1. Ratings of intentions to drink and drive by type of intention and level of intoxication.

Figure 2. Responses to scenarios by accuracy and hypothetical intoxication level.


Intention Type
Non-contingent
Contingent
Intentions to drink and drive
5
4
3
2
1
0
Alcohol
Sober
Intoxication Level


Hypothetical intoxication level
Under legal limit
Over legal limit
Proportion of overall responses
0.5
0.4
0.3
0.2
0.1
0.0
Correct
Incorrect