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# “There Is No Such Thing as an Accident,” Especially When People Are Drunk

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## Abstract

The intentionality bias is the tendency for people to view the behavior of others as intentional. This study tests the hypothesis that alcohol magnifies the intentionality bias by disrupting effortful cognitive abilities. Using a 2 × 2 balanced placebo design in a natural field experiment disguised as a food-tasting session, participants received either a high dose of alcohol (target BAC = .10%) or no alcohol, with half of each group believing they had or had not consumed alcohol. Participants then read a series of sentences describing simple actions (e.g., “She cut him off in traffic”) and indicated whether the actions were done intentionally or accidentally. As expected, intoxicated people interpreted more acts as intentional than did sober people. This finding helps explain why alcohol increases aggression. For example, intoxicated people may interpret a harmless bump in a crowded bar as a provocation.

## Keywords

alcohol, intentionality bias, aggression, alcohol-related behavior, attribution, conflict

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There is no such thing as accident.

Napoleon Bonaparte

Suppose you come home to discover an heirloom vase in broken pieces on the ground. Does it matter whether you think the vase was broken accidentally or intentionally? You bet it does! Our interpretations of events matter a great deal. Understanding whether an act was intended or not allows us to navigate our daily sea of social interactions and make sense of other people’s behavior (Malle, 2004). Developmental and experimental studies suggest that people have a bias toward intentional explanations, probably because they are computationally easier than accidental interpretations (Kelemen, 2004; Pressler & Bloom, 2008). The present research examines the role of alcohol on the intentionality bias.

## The Intentionality Bias

Recent research suggests that adults have a default explanatory bias to interpret all acts as intentional. In a series of studies examining adults’ judgments about the intentionality of ambiguous actions (Rosset, 2008), findings showed that people initially interpreted acts as intentional, though this interpretation can be revised with additional processing. For instance, when deciding whether ambiguous actions such as “He ripped the piece of paper” or “She woke the baby up” were generally done “on

purpose” or “by accident,” people judged more actions as generally done on purpose when they had to make their decisions quickly, as compared to people who had more time. In addition, people provided more intentional interpretations of actions (e.g., “He broke the window”) when not explicitly reminded of the possibility that the action could be accidental. Finally, a memory recall task indicated that people required additional processing to decide that an action was accidental, even for actions that are always done accidentally, such as dropping a glass of milk.

These studies suggest we may have an “intentionality bias” when explaining other people’s behavior. The ability to inhibit the intentional interpretation develops with age as people gain understanding of alternate causes for behavior, of people’s goals and desires, and of how to read behavioral cues (Flavell, 1999; Malle, 2004).

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## Alcohol's Effects on Cognitive Functioning

It is well known that acute alcohol consumption disrupts cognitive functioning (Giancola, 2000). However, its most disruptive effects are on controlled effortful processing such as inhibitory control, abstract reasoning, mental flexibility, and the ability to attend to the multiple external cues involved in decision making (Evert & Oscar-Berman, 1995; Peterson, Rothfleisch, & Zelazo, 1990; Robert, Robbins, & Weiskrantz, 1998; Streufert, Pogash, & Gingrich, 1993). It has been theorized that alcohol intoxication has a "myopic" or narrowing effect on attention, whereby intoxicated people focus their attention on the most salient features of a situation and not on more subtle features (Steele & Josephs, 1988). This alcohol myopia effect is relevant to any situation where attention to multiple cues is necessary to elaborate an accurate judgment, such as deciding whether another person's behavior is intentional or accidental. Because alcohol also reduces inhibitory control (Fillmore, 2003), drunk people may have more difficulty than sober people in inhibiting the tendency to make the intentionality bias.

### Overview of the Present Study

Given alcohol's disruptive effect on cognitive functions that play a key role in intentionality bias, it is reasonable to hypothesize that alcohol intoxication should magnify it. The key to avoiding the intentionality bias is to inhibit the inclination to make intentional attributions when explaining the behavior of another person. To avoid this bias, one must pay close attention to, and accurately process, subtle external factors, but alcohol impairs this ability and has the myopic effect of drawing attention to more salient internal factors. Thus, alcohol should magnify the intentionality bias. To separate the pharmacological effects of alcohol from the expectancy effects, we used a balanced placebo design to test our hypothesis (for a description of the balanced placebo design see Marlatt & Rohsenow, 1980). The pharmacological effects of alcohol should magnify the intentionality bias because alcohol disrupts cognitive functioning. We also explored whether expectations would magnify the intentionality bias.

## Method

### Participants

Participants were 92 French men, between the ages of 20 and 46 years ( $M = 27$  years,  $SD = 7$  years). They were recruited via newspaper advertisements for a taste-test study and were paid €14 (\$21) per hour. Potential participants were interviewed over the phone, ostensibly to determine if they were allergic to any foods. The researcher asked participants if they were willing to taste 30 different food items, including alcohol. Potential at-risk drinkers were excluded from the study (they were identified by

the CAGE screening test for alcohol dependence; Beresford, Blow, Hill, Singer, & Lucey, 1990).

### Procedure

Participants were told the private research firm Stat-Food (actually a bogus company) was conducting a taste-test study at a community health center. Participants fasted from food and drink (except water) for 3 hours prior to their scheduled appointment (Millar, Hammersley, & Finnigan, 1992). A physician verified the state of health of each participant. After informed consent was obtained, participants were randomly assigned to beverage conditions. Each participant was given three cold isovolemic glasses that contained a cocktail of grapefruit and grenadine cordial, mint, and lemon concentrate. For half the participants, the beverage contained 2.01 oz of pure alcohol to target a peak BAC of .10%. The dose was adjusted when the participant's weight deviated more than 20 kg (44 lbs) from the median weight of 75 kg (165 lbs). Within each group, half the participants were told that the beverage contained alcohol (the equivalent of 5 to 6 shots of vodka), whereas the other half were told that the beverage contained no alcohol. In the expect alcohol conditions, the rims of the glasses were sprayed with alcohol immediately prior to serving. This balanced placebo design allows one to separate the pharmacological effects of alcohol from the expectancy effects of alcohol (Marlatt & Rohsenow, 1980). The experimenter was blind to beverage condition. Participants were given 10 min to consume their beverage and 20 additional min to complete some filler tasks (giving time for alcohol absorption for participants who consumed alcohol).

Next, participants read 50 sentences describing simple actions. Of these, 20 could be done intentionally or accidentally (e.g., "He deleted the email," "She made a mark on the paper"), 15 could be done only intentionally (e.g., "She looked for her keys," "He buttoned his jacket"), and 15 could be done only accidentally (e.g., "She tripped on the jump rope," "She caught a cold"). For each sentence, participants indicated whether the action was intentional or accidental (see Rosset, 2008, for the whole list). Finally, participants were fully debriefed. Those who consumed alcohol remained in the lab until their BAC was .00.

## Results

### Manipulation Checks

Responses on the control sentences demonstrated that people were following instructions and understood the nature of the task: 98% of the control intentional items were judged to be generally done on purpose and 99% of the control accidental items were judged to be generally done by accident.

Regarding the beverage manipulation checks, 5 participants suspected a discrepancy between what they were told concerning their beverage and what they were actually given and were

**Table 1.** Intentionality as a Function of Alcohol Consumption and Alcohol Expected

	Expected					
	Alcohol		No alcohol		All	
	M	SD	M	SD	M	SD
Alcohol	0.40	0.14	0.45	0.17	0.43	0.15
No alcohol	0.40	0.17	0.32	0.14	0.36	0.15

**Table 2.** Result of a 2 × 2 Between-Subjects ANOVA

Source	SS	df	Ms	F	p
Alcohol	0.09	1	0.09	3.75	.05
Expectancies	0.00	1	0.00	0.26	.60
Alcohol × expectancies	0.08	1	0.08	3.24	.07
Error	1.88	76	0.02		
Total	14.57	80			

therefore excluded from the study. An additional 7 participants were excluded because they did not properly follow instructions or because of missing data. Thus, data from 80 participants were analyzed.

### Primary Analyses

For each of the 20 ambiguous sentences, intentional judgments were scored 1 and accidental judgments were scored 0. The scores from the 20 sentences were then averaged. Thus, the average score indicates the proportion of sentences judged to be intentional. Data were analyzed using a 2 (given alcohol vs. given no alcohol) × 2 (expected alcohol vs. expected no alcohol) ANOVA. As expected, intoxicated participants perceived more actions to be intentional than did sober participants ( $M = 0.43$  and  $0.36$ , respectively),  $F(1, 76) = 3.75$ ,  $p < .05$ ,  $d = 0.43$ . The main effect for expectancy and the interaction between alcohol and expectancy were both nonsignificant (see Tables 1 and 2).

### Discussion

When explaining the behavior of others, people have a bias to conclude that the observed behavior was intentional rather than accidental. Alcohol intoxication magnifies this bias. In the present study, drunk participants interpreted more acts as intentional than did sober participants. The simplest explanation for our results is that alcohol disrupts cognitive functions that play a role in making accurate explanations. As expected, alcohol-related expectancies had no significant effect on the intentionality bias.

Our findings are consistent with findings reported by other researchers. For example, one study found that when asked to focus on the dispositions of others, intoxicated participants exaggerated the extent to which these dispositions influenced

their behaviors (Herzog, 1999). Other studies found that alcohol consumption increases a hostile information-processing style (Ogle & Miller, 2004; Sayette, Wilson, & Elias, 1993), which suggests that the intentionality bias has real-world consequences. In our study, most of the ambiguous behaviors had negative outcomes. People are especially biased toward assuming intentionality for harmful behavior (Knobe, 2003). Thus, our findings can help explain why there is a link between alcohol and aggression. Drunk people have an intentionality bias, and the intentionality bias has been shown to be a contributing factor in aggressive behavior (for a meta-analytic review, see Orobio de Castro, Veerman, Koops, Bosch, & Monshouer, 2002). For example, suppose a person bumps into another person in a crowded bar. The person could interpret this action as intentional (e.g., the person wants to pick a fight) or accidental. If the action is interpreted as intentional, an angry response is more likely, which increases the likelihood of an aggressive altercation. If the person is drunk, the action is more likely to be interpreted as intentional than if the person is sober. Thus, alcohol consumption contributes to a hostile interpretation of events and therefore to aggression.

In summary, the present research shows that alcohol magnifies the intentionality bias. Napoleon said, "There is no such thing as accident." Our findings suggest that drunk people are more likely to believe Napoleon's statement than are sober people.

### Declaration of Conflicting Interests

The authors declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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