'Beauty is in the eye of the beer holder': People who think they are drunk also think they are attractive

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This research examines the role of alcohol consumption on self-perceived attractiveness. Study 1, carried out in a barroom ($N = 19$), showed that the more alcoholic drinks customers consumed, the more attractive they thought they were. In Study 2, 94 non-student participants in a bogus taste-test study were given either an alcoholic beverage (target BAL [blood alcohol level] = 0.10 g/100 ml) or a non-alcoholic beverage, with half of each group believing they had consumed alcohol and half believing they had not (balanced placebo design). After consuming beverages, they delivered a speech and rated how attractive, bright, original, and funny they thought they were. The speeches were videotaped and rated by 22 independent judges. Results showed that participants who thought they had consumed alcohol gave themselves more positive self-evaluations. However, ratings from independent judges showed that this boost in self-evaluation was unrelated to actual performance.

> *'Beauty is in the eye of the beer holder'*
>
> —Kinky Friedman

Alcohol has many consequences on social perception and relationships. After a drink, intoxicated people see members of the opposite sex through 'beer goggles', which makes them look especially attractive (Jones, Jones, Thomas, & Piper, 2003; Lyvers, Cholakians, Puorro, & Sundram, 2011; Neave, Tsang, & Heather, 2008). But alcohol can also influence self-perceptions. Previous research on alcohol and self-awareness has found that alcohol reduces self-awareness by inhibiting self-relevant encoding processes (Hull, Levenson, Young, & Sher, 1983). The purpose of the present research is to test the hypothesis

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that alcohol consumption increases self-perceived attractiveness. Whereas meta-analytic reviews indicate that alcohol consumption enhances mood and sexual arousal (Hull & Bond, 1986), the link between alcohol consumption and self-perceived attractiveness remains to be clarified and theoretically developed.

In order to understand the link between alcohol and self-processes, we relied on the dual-process model of alcohol-related behaviour (Moss & Albery, 2009; see also Moss & Albery, 2010; Wiers & Stacy, 2010). This model suggests that although alcohol consumption disrupts cognitive controlled processes, the mind may still become 'intoxicated' even in the absence of alcohol consumption (Moss & Albery, 2009). For example, when people believe that they are intoxicated, they behave more aggressively (Bègue *et al.*, 2009), and show more sexually disinhibited behaviours (Crowe & Georges, 1989). Various studies indicate that the effects of alcohol on human cognition and behaviour should distinguish pharmacological and social psychological consequences of alcohol consumption. In the field of sexual arousal, for example, a meta-analytic review indicated that alcohol consumption had a non-significant effect on sexual arousal, whereas the mere expectation of drinking alcohol significantly increased sexual arousal (Hull & Bond, 1986). From this perspective, behaviours that are disinhibited after drinking a placebo can be understood as a consequence of the activation of alcohol-related concepts in memory. In one study, the mere subliminal activation of alcohol-related concepts caused men to rate the faces of women as more sexually attractive (Friedman, McCarty, Forster, & Denzler, 2005).

Drunkenness is thus not merely a physiological consequence of alcohol, but involves complex interactions of both limited processing capacities (myopia theory, see below) and chronically and temporarily activated mental representations that make certain patterns of responding more accessible (expectancy theory, see below). According to the dual-process model of the alcohol behaviour (Moss & Albery, 2009), a full understanding of alcohol effects has to integrate both pharmacological and extra-pharmacological consequences of alcohol on human cognition and behaviour. Expectancies are the first component of the model. They are considered as the result of learned associations between alcohol-related representations in memory. The sources of this associative process could be referred to as conditioning (Hull & Bond, 1986) or vicarious learning (Bandura, 1965). For example, content analyses show that media characters who drink alcohol are generally depicted as more attractive than those who do not drink alcohol (McIntosh, 1999). Hence, to the extent that people strongly endorse alcohol-self-enhancement expectancies, concepts of 'alcohol' and 'attractiveness' would be linked together in memory. According to alcohol expectancy theory, alcohol-related cues could implicitly activate alcohol-related expectancies, which could, in turn, affect social judgements and behaviours that are in line with these alcohol-related expectancies. The concept of alcohol expectancy is based on a semantic network model of memory (Collins & Quillian, 1969), which posits that concepts that frequently co-occur, or share a similar meaning, are stored close together in memory. When one concept is activated, other related concepts also become more accessible through a spreading activation process (Collins & Loftus, 1975). For instance, social knowledge regarding alcohol effects is automatically activated in memory during the natural course of perception, without awareness or intention. Knowledge activation, in turn, shapes and guides people's impressions, judgements, feelings, and intentions without awareness that such influence is occurring (see Bargh & Erin, 2006; Bargh & Ferguson, 2000; Ferguson & Bargh, 2004).

Another aspect of the dual-process model is related to the physiological consequences of alcohol consumption. According to the attention allocation model, alcohol has a

'myopic' or narrowing effect on attention (Giancola & Corman, 2007; Steele & Josephs, 1990), which causes people to focus attention on the most salient cues and to not pay attention to more subtle or distal cues. Alcohol myopia is therefore defined as a state of short-sightedness in which superficially understood, immediate aspects of experience have a disproportionate influence on behaviours and emotions (Steele & Josephs, 1990). Although a sober individual can consider a range of information more or less salient before responding to a social situation, an intoxicated individual will be less concerned with consideration distal in time and place because he will be captive of an impoverished version of reality in which the breadth, depth, and timeline of his understanding will be affected. Various studies show that intoxicated people no longer have the prerequisite processing skills to attend to all of the multiple cues involved in social behaviour (Streufert, Pogash, & Gingrich, 1993) and seek cognitive closure (Lange, 2002).

In our study on perceived attractiveness, two hypotheses were possible. First, alcohol could lead to a general increase of perceived attractiveness, because being attractive is a salient feature of the self. Second, alcohol could produce more polarized responses such that attractive people would judge themselves even more attractive, whereas unattractive people would judge themselves as even less attractive.

Overview of present research

The present research investigates the effects of alcohol consumption on self-perceived attractiveness. In Study 1, carried out in a barroom, we analyse the relationship between an objective measure of intoxication (i.e., breathalyser reading) and self-perceived attractiveness. Study 2, an experimental study, clarifies the causal link between alcohol consumption and self-perceived attractiveness using a balanced placebo design (Marlatt & Rohsenow, 1980), which allows one to separate the pharmacological effects of alcohol from the psychological effects of alcohol. In Study 2, objective measure of attractiveness were also obtained by independent raters to determine whether the effects of alcohol consumption on self-perceived attractiveness are grounded in reality, or whether they are simply an illusion of the drinker.

STUDY 1

Study 1 provided an initial test of the hypothesis that intoxicated people think they are more attractive than sober people do. One major strength of Study 1 is that it was conducted in a naturalistic setting – a barroom.

Method

Participants

Participants were 19 customers (63% males; $M_{age} = 22.5$, $SD = 5.0$, range = 19–40) in a barroom in Grenoble, France. They received a lottery ticket in exchange for their voluntary participation.

Procedure

Participants rated how *attractive*, *bright*, *original*, and *funny* they felt at the moment (1 = *not at all* to 7 = *extremely*; Cronbach's $\alpha = .71$; $M = 4.27$, $SD = 1.11$). Next, we

estimated blood alcohol level (BAL) using a breathalyser (Draeger 5100S; $M = 0.34\%$, $SD = 0.38$). A debriefing followed.

Results and Discussion

Because they were not normally distributed, BAL values were transformed using a natural log function. As expected, the higher the BAL, the more attractive participants thought they were, $r = .56$, $p = .012$.

These results are consistent with the hypothesis that intoxicated people think they are more attractive than sober people do. Because of the correlational nature of Study 1, however, we cannot rule out the possibility that individuals who think they are attractive tend to drink more in barrooms, or that some third factor is related to perceived attractiveness and alcohol consumption.

Study 1 also does not allow one to determine whether it is the actual consumption of alcohol or the mere belief that one has consumed alcohol that relates to perceived attractiveness. In the real world it is impossible to separate the pharmacological and expectancy effects of alcohol, but in the laboratory it is possible to separate them using a balanced placebo design (Marlatt & Rohsenow, 1980). Study 2 was therefore carried out to disentangle both possible origins of the alcohol-self-perceived attractiveness relationship.

Study 1 also did not allow us to test whether intoxicated participants were, in fact, more attractive. We wanted to conduct videotaped interviews with barroom patrons, and then show these interviews to independent judges, but this was not possible. Study 2 also overcomes this weakness of Study 1.

STUDY 2

In Study 2, we experimentally tested the expectancy and pharmacological effects of alcohol consumption on self-evaluated attractiveness. Participants drank a beverage that contained or did not contain alcohol. Within each group, half were told the beverage contained alcohol and half were told it contained no alcohol. Next, participants delivered a message that was filmed, supposedly to be used in future advertisements for the beverage. After watching the filmed message, participants rated how attractive, bright, original, and funny they thought they were. We predicted that alcohol consumption would increase self-perceived attractiveness, as in Study 1. However, we were unsure whether this effect would be due to the pharmacological effects of alcohol, the expectancy effects of alcohol, or both.

As an objective measure of how attractive participants were, independent judges, blind to beverage conditions, also rated participants on the same dimensions. Because the judges were sober, we predicted that alcohol consumption would be unrelated to this objective measure of attractiveness.

Method

Participants

Participants were 94 French men. Three did not follow instructions, and two in placebo condition and three participants in anti-placebo condition suspected a discrepancy between what they were told concerning their beverage and what they were actually

given. We therefore excluded them from the sample. Thus, the final sample included 86 men ($M_{age} = 27$, $SD = 7$). Participants were recruited via newspaper advertisements for a taste-test study and were paid 14€ ($21) per hour. Men who responded to the ads were interviewed over the phone, ostensibly to determine if they were allergic to any foods, including alcohol. Potential at-risk drinkers were identified by the CAGE screening test for alcohol dependence (Beresford, Blow, Hill, Singer, & Lucey, 1990), and were excluded from the study.

Procedure

Participants were told the private research firm *Stat-Food* (actually a bogus company) was conducting a taste-test study at a community health centre. Participants fasted from food and drink (except water) for 3 hr prior to their scheduled appointment (Millar, Hammersley, & Finnigan, 1992). A physician verified that each participant was healthy.

After informed consent was obtained, participants were randomly assigned to beverage conditions in a balanced placebo design. The balanced placebo design is a 2 × 2 factorial design that crosses alcohol content (participants drink a beverage that contains either alcohol or no alcohol) with alcohol-related expectancies (participants are told that their beverage either contains or does not contain alcohol). The major strength of the balanced placebo design is that it allows researchers to untangle the pharmacological effects of alcohol from the expectancy effects of alcohol.

Unfortunately, suspicion is often very high in the balanced placebo design, as high as 90% in some studies (Martin & Sayette, 1993). Three different types of cues can make participants suspicious: (1) internal cues (i.e., participants in the placebo condition do not feel intoxicated even though they are told their beverage contains alcohol; participants in the anti-placebo condition feel intoxicated even though they are told their beverage contains no alcohol); (2) gustative cues (i.e., participants in the placebo condition expect to taste alcohol, but do not taste it; participants in the anti-placebo condition do not expect to taste alcohol, but they taste it), and (3) instructional cues (e.g., manipulation checks make participants question the actual content of the beverage, cover stories are not believable). In Study 2, as in our previous research (e.g., Bègue *et al.*, 2009), we attempt to reduce suspicion by focusing on all three cues. We handled the issue of internal cues indirectly by using several distracting tasks to divert participants' attention away from their bodily sensations. Previous alcohol research has shown that distraction decreases the salience of interoceptive cues (Rohsenow & Marlatt, 1981). The issue of gustative cues was handled by a major change in typical procedures used in alcohol-related research. In the anti-placebo condition, participants were told that we were testing a new non-alcoholic beverage that tasted like alcohol, for people who appreciated the taste of alcohol but wished to avoid drinking alcohol. In the placebo group, we mixed a small quantity of alcohol in the beverage, placed alcohol on the surface of the beverage, and sprayed alcohol on the rim of the glass. We handled the issue of instructional cues by disguising the study as a taste-test study. In addition to handling these three cues, we also used people from the general population as participants, because they are far less suspicious about psychological studies than college students are.

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 BAL of 0.10 g/100 ml. The dose was not adjusted, except when the participant's weight was more than 20 kg

under or over the median weight (75 kg). Within each group, half the participants were told that the beverage contained alcohol (the equivalent of five to six shots of vodka), whereas the remaining participants were told that the beverage contained no alcohol. In the expected alcohol conditions, the rims of the glasses were sprayed with alcohol immediately prior to serving. The drinks were mixed by a research assistant, allowing the experimenter to be blind to beverage condition.

Participants were given 10 min to consume their beverage. Next, they were given 5 min to write an advertising message that would allegedly be used by the (bogus) company *Stat-Food* to promote their products. Participants then evaluated their drinks, which took 15 additional minutes (giving time for alcohol absorption for participants who consumed an alcoholic beverage and distracting participants who consumed a placebo beverage from focusing on internal cues). Next, participants delivered their advertising message on a stage while a female experimenter filmed them. After the recording, participants viewed their advertising message and, as in Study 1, rated how attractive, bright, original, and funny they thought they were (1 = *not at all* to 7 = *extremely*; Cronbach's α = .70).

Participants then left the main room, were offered some food and drink, and were kept busy with various tasks. When their BAL was theoretically near to 0, an experimenter posing as the person in charge of the food evaluation agency took them to another room and asked various questions about the agency's hostess and the tasting experience. By that pre-debriefing procedure, we expected to hinder the participants' propensity to answer consistently with what another experimenter had previously told them (see Knight, Barbaree, & Boland, 1986 for a description of this debriefing procedure). The experimenter doing the debriefing pretended not to be informed of what they had drunk and the participants had simply to inform him at the beginning of the interview (see Knight *et al.*, 1986). If there was a discrepancy between the quantity of alcohol said to be in the drink and what the participant reported in the debriefing, or if the participant expressed doubts about the content of the drink, he was considered suspicious and was discarded from the sample. Five participants were discarded, two in the placebo condition and three in anti-placebo condition.

When the manipulation verification phase was complete, each participant received a thorough debriefing. All participants agreed that the collected data could be used for research purposes. We then estimated BAL with a breath alcohol testing device (Draeger 5100S). Once BAL was equal to 0.00, participants were thanked, paid, and released from the lab.

Validation of self-evaluations of attractiveness by independent judges

To obtain an objective measure of how attractive speakers were, an independent group also evaluated the filmed messages. Judges were 22 university students (36% males; M_{age} = 20, SD = 3). Each judge evaluated the filmed messages from all 86 participants. The judges were blind to any information about the alcohol consumption/expectancy status of the participant. They used the same rating dimensions and rating scales as participants did. Judges rated whether the person in the filmed performance was attractive, bright, original, and funny (1 = *not at all* to 7 = *extremely*; Cronbach's α = .95).

Results and Discussion

Self-evaluations

Data were analysed using a 2 (given alcohol vs. given no alcohol) $\times$ 2 (expected alcohol vs. expected no alcohol) ANOVA. Results showed that participants who thought they had consumed alcohol expressed more positive self-evaluations than did those who thought they had not consumed alcohol, $Ms = 3.91$ and 3.42, respectively, $F(1,85) = 4.03$, $p = .04$, $d = 0.44$. The main effect of alcohol content was non-significant, and the interaction between alcohol content and alcohol expectancy, were both non-significant, $F(1,82) = 2.46$, $p = .12$, and $F(1,82) = 1.38$, $p = .24$, respectively. A Levene's test showed that alcohol and non-alcohol group variances did not differ ($p = .55$), which suggested that no polarization effect of alcohol of self-perceived attractiveness was observed. Descriptive statistics are in Table 1. These results suggest that alcohol related expectancies, but not actual alcohol content, influenced self-evaluations of attractiveness.

Validation of self-evaluations by independent judges

Judges' ratings of speeches were analysed using a 2 (given alcohol vs. given no alcohol) $\times$ 2 (expected alcohol vs. expected no alcohol) ANOVA. No significant effects were found. These findings indicate that the boost in self-perceived attractiveness experienced by people who thought they were drunk was unrelated to the way they were perceived by independent raters. Judges blind to beverage condition gave similar attractiveness ratings to people who thought they were drunk and to people who thought they were sober, $Ms = 3.51$ and 3.45, respectively, $F(1,85) = 0.09$, $p > .80$, $d = 0.065$. Descriptive statistics are in Table 2.

Table 1. Self-perceived attractiveness as a function of alcohol consumption and alcohol expectancy

| | Expected | | | | |
| | Alcohol | | | No alcohol | |
	M	SD		M	SD
Alcohol	3.96	1.33		3.42	1.12
No alcohol	3.86	1.00		3.09	1.11

Table 2. Judges evaluations of attractiveness as a function of target's alcohol consumption and alcohol expected

| | Expected | | | | |
| | Alcohol | | | No alcohol | |
	M	SD		M	SD
Alcohol	3.61	1.13		3.55	0.87
No alcohol	3.40	0.78		3.35	0.73

GENERAL DISCUSSION

Our results showed that when people drink alcohol, they evaluate themselves as more attractive (or at least, less unattractive), but this self-perception appears to be an illusion. When independent judges evaluate attractiveness, the ratings are not influenced by expected or actual alcohol consumption. Our use of the balanced placebo design in Study 2 showed that the boost in self-perceived attractiveness can be interpreted as a consequence of the activation of mental representations implicitly related to alcohol in long-term memory. These findings are consistent with dual-process alcohol models that propose that the mind may still become 'intoxicated' if people expect to consume alcohol, even if they do not consume a single drop (Moss & Albery, 2009). These results are consistent with the hypothesis that alcohol stimuli operate on implicit expectancies, which, in turn, influence explicit self-perception.

Our findings also indicate that alcohol-related expectancies lead to a general increase of perceived attractiveness. There was no evidence that alcohol-related expectancies decreased perceived attractiveness in unattractive individuals. Indeed, almost everyone thinks they are more attractive after they think they have consumed alcohol. Moreover, our analysis showed that alcohol and non-alcohol group variances did not differ, which suggested that no polarization effect of alcohol of self-perceived attractiveness was observed. In order to find such a polarization, we maybe should have introduced salient cues referring to body self-esteem. According to the alcohol myopia theory (Steele & Josephs, 1990), in such a case, attractive people could have perceived themselves as even more attractive, whereas the reverse may have occurred with less attractive people. Future research is needed to clarify the interesting issue of polarization under the physiological influence of alcohol.

Our study has also indicated that the quantity of alcohol ingested was not related to self-perceived attractiveness. We may hypothesize that pre-experimental individuals' alcohol use and chronic self-representations should be further investigated to understand such a result. A within-subjects experiment could provide useful information regarding this issue.

Previous studies have shown that alcohol consumption increases the attractiveness of members of the opposite sex (Jones, Jones, Thomas, & Piper, 2003). Our studies provide complementary results showing that the mere belief that one has consumed alcohol increases self-perceived attractiveness. This is an important topic to deal with because self-perceived attractiveness has been shown to significantly influence intimate interactions. For example, in one diary study it was observed that people who thought they were attractive had more intimate interactions of all types than did those who thought they were less attractive (Nezlek, 1999).

In summary, the present research shows that alcohol-related expectancies can significantly boost self-perceived attractiveness. However, the perceived attractiveness lies in the eyes of the 'beer holder' and is not shared by anyone else.

Acknowledgement

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