

Method

Participants

The present study will include 56 male participants, who will be recruited via ads in community and city newspapers, and on relevant online sites. [Though we are disinclined to favor recruitment of males over females in alcohol research, the sample size of the present study is modest and alcohol-related social rewards are particularly strong for male drinkers (Sayette, 2017). As our lab has done with social bonding research, should this initial study with males show promise, we plan to conduct a follow-up with both genders (Kirchner et al., 2006; Sayette et al., 2012).] Ads will request individuals to call the Alcohol and Smoking Research Laboratory (ASRL) if they and a friend are social drinkers who are interested in earning money for participation in an experiment. Individuals who contact the ASRL will be screened for eligibility via telephone.

To qualify, participants must be male social drinkers between the ages of 21–28 (the same age range as that represented by the attractiveness stimuli, to reduce the likelihood of rater-target age discrepancy affecting attractiveness ratings; Foos & Clark, 2011). They must report drinking at least one day per week and affirm that they can comfortably drink at least three drinks in 30 minutes (a cutoff used in prior studies; see Sayette et al., 2012), as well as indicate willingness to do so per study protocol. They must report consuming approximately five or more drinks on a single occasion in the past 6 months. Participants will be required to be within 15% of the ideal weight for their height (Harrison, 1985). Participants will need to have a nonromantic same-sex friend with whom they regularly drink and whom they would be willing to have call the laboratory to also pursue study participation.

Per past research (e.g., McCarthy, Niculete, Treloar, Morris, & Bartholow, 2012), participants will be excluded if they have any medical or psychiatric conditions that ethically contradict alcohol consumption (e.g. diabetes, bipolar disorder), are currently taking medication for which the use of alcohol is contraindicated, weigh greater than 200lb, or have ever intentionally abstained from alcohol due to either a formal diagnosis or concern about having an substance use disorder. Participants will also be excluded if they have uncorrected visual impairment as it may reduce their ability perceive facial features of images being used as stimuli.

Participants will then be asked to identify a nonromantic same-sex friend with whom they regularly drink and to have that friend contact the ASRL to undergo the eligibility screening. Once both individuals within a dyad have been screened and deemed eligible, they will be scheduled for two study sessions.

Procedure

Dyads who meet eligibility criteria based on the phone screen will be invited to participate in a two-session laboratory experiment. They will be informed that if they choose to participate each member of the dyad will: (a) need to abstain from alcohol for 24 hours, as well as food and caffeine for four hours, prior to each session; (b) be required to provide a breath alcohol concentration (BAC) sample to confirm sobriety by a zero reading on each session day, and that failure to do so will result in withdrawal from the experiment and no further monetary compensation; and (c) be required to consume alcohol during one of the sessions.¹ Dyads who agree to the above terms and indicate interest will be scheduled for two sessions, which will occur within one week of one another.

¹ Participants will be told that they will need to arrange transportation to and from the experimental sessions, particularly noting that they will not be permitted to drive themselves to or from the session on the day in which they will consume alcohol.

Session one. Upon arrival to the laboratory for session one, participants will be seated in separate rooms and provided with informed consent forms, which an experimenter will review with them verbally. Participants who agree to participate will be weighed to inform pre-drink food amount and alcohol dosage. They will then be asked to rinse their mouths with water and to provide a BAC sample. Any participant who provides a breath reading of $> .003$ will be withdrawn from further participation (i.e., they and their friend will be thanked for their interest in participating and permitted to leave). Participants with confirmed sobriety will be seated in separate rooms to complete multiple questionnaires (e.g., baseline mood measure), while they consume a bagel (amount determined by weight). Participants will use an intercom to inform the experimenter when they have completed the questionnaires, at which time the experimenter will escort participants into an experimental room wherein they will be seated together at a circular table. The experimenter will inform participants that the next phase of the session will be the drink consumption period.

Participants will be told that at the midpoint of the drinking period, they will begin a rating task, wherein they will view a series of images on a computer screen and will be prompted to rate the attractiveness of each image. Participants will be told that the images are of participants from a recent, previous study who may participate in a future study in the ASRL and that they (i.e., the present-study participants) too may be invited to participate in the future study. Participants will be informed that at the end of the rating task they will be prompted to select four individuals they rated whom they would be interested in potentially interacting with during the future study (though no such future study will occur). This use of deception, which will be disclosed to participants at the end of session two, is designed to enhance participants' beliefs that they have potential to interact with the individuals whom they are rating, as perceptions of

physical attractiveness (PPA) may differ when individuals do vs. do not have potential to interact with the targets of their perception (Zebrowitz & Montepare, 2006). We will make participants aware of this post-task prompt prior to the drink consumption period to ensure all participants are sober at the time of receiving this potentially crucial information. As we have done in past studies (Sayette et al., 2012), participants will also be told that there are cameras in the experimental room that will be used to monitor drink consumption rates from an adjoining room. During debriefing, we will inform participants that the cameras were used to record their social interaction and we will ask permission to retain the video footage for future research purposes (irrelevant to the present study).

Drink administration. Drink conditions (alcohol vs. no-alcohol control) will be randomized by dyad and counter-balanced across sessions. The drink procedure will follow a protocol used in prior studies conducted at the ASRL (e.g., Sayette et al., 2012). For the alcohol condition, a 0.82g/kg dose of alcohol will be provided (e.g., a 150-lb male will receive about five ounces of vodka) and participants will be informed that their drinks contain alcohol. The drink will be one part 100 proof vodka and 3.5 parts cranberry-juice cocktail. For the control condition, participants will receive cranberry-juice cocktail and will be told that their drinks do not contain alcohol. Total beverage will be isovolumetric in the alcohol and control conditions.

Participants will receive one half of their beverage at minutes 0 and 18, respectively, such that they will consume entire beverage across 36 minutes. They will be asked to drink each half evenly over the 18 minute intervals. Immediately after the second half is finished (minute 36), participants will rinse their mouths with water, provide another BAC breath sample, and will report their subjective intoxication. In both conditions, participants will be informed that they are

permitted to talk during the drinking period but will be asked to refrain from commenting on their perceived intoxication.

Computer-based tasks. At minute 18, participants will be given the second portion of their drink and begin the PPA task on a desktop computer in the experimental room. They will consume the second part of their drink as they partake in the PPA task to permit assessment of alcohol's effect on PPA while intoxications continue to rise steeply (Sayette, 2017). Participants will be informed that the experimenter will leave the room and will return upon completion of the rating task and beverage consumption. Participants will view a series of facial image stimuli, which they will rate using a scale of 1 (very unattractive) to 10 (very attractive). [Attractiveness stimuli will be derived from video images of participants who participated in a previous study conducted in the ASRL.] Each participant will record their responses using a separate keyboard that will be connected to the computer. The responses will be obfuscated on screen. Participants will be asked to refrain from discussing their reactions to the images but will be otherwise permitted to talk during the task as they so choose. This approach is intended to create an attractiveness perception experience that more closely mirrors the social aspect of naturalistic experiences, while mitigating the likelihood that participants may feel pressured to agree on a number rating were the specific number ratings permitted in discussion. The experimenter will wait in a lab room next to the experimental room, wherein participants' completion of the task will be monitored via camera to ensure compliance with instructions.

After completing all ratings, a screen with the static smiling stimulus for each target will be displayed and subjects will be prompted to select four individuals whom they would be interested in potentially interacting with in a future study. They will record their responses individually on a sheet of paper. Participants will use an intercom to communicate to the experimenter when they

have completed the task and subsequent prompt, as well as consumed their beverages. The experimenter will return to the room and participants will be asked to indicate whether they recognized any of the individuals whom they rated during the task. Any participants who affirm recognition will again be shown the computer screen displaying static smiling images of all targets and will be prompted to identify which target(s) they had recognized. Ratings provided on targets who raters recognized will be removed from analyses, as these ratings may be confounded by the rater's prior experience with and additional information about the target.

Post-task. Participants in the control condition will be separated, provide another BAC sample, report their subjective intoxication, provide an estimate of how many ounces of alcohol they consumed during the session, and complete a post-drink mood measure. They will then be paid a portion of their total compensation (\$25 of \$90), prior to being reminded of their next session date and the need to arrange transportation to and from the session, such that they will not drive themselves after the session (as they will consume alcohol during session two). They will be asked to refrain from discussing their ratings with their friend and will then be permitted to leave. Participants in the alcohol condition will be separated, provide another BAC sample, report their subjective intoxication, and complete the post-drink mood measure. They will then be seated together, given a light meal, and will wait until their BACs drop below 0.04% (per NIAAA alcohol administration study guidelines; National Institute on Alcohol Abuse and Alcoholism, n.d.). While they are waiting, they will be permitted to converse but asked to refrain from discussing their ratings. Once their BACs have sufficiently decreased, participants will provide an estimate of how many ounces of alcohol they consumed during the session, be paid a portion of their total compensation (\$25 of \$90), reminded of their next session date, and once they confirm that they will not be driving themselves, permitted to leave.

Session two. Session two will generally mirror session one. Upon arrival to the laboratory, participants will provide a BAC sample to confirm sobriety. They will then complete the baseline mood measure (the same baseline mood measure as in session one) and will be reminded of the study timeline (i.e., drinking period, rating task, post-rating prompts). For the drinking period, participants will be administered the beverage type that they did not receive in session one (i.e., dyads who received alcohol during session one will receive control beverages during session two, and vice versa). Participants will then complete the attractiveness rating task and subsequent prompts. For the rating task, participants will view a different set of images than they did during session one to reduce potential familiarity effects (Peskin & Newell, 2004).²

After task and prompt completion, participants will be separated, provide a BAC sample, report their subjective intoxication, and complete a post-drink mood measure. Then, participants will complete some subsequent tasks and questionnaires irrelevant to the present study.

Next, participants will be debriefed together and will be told that we did not explain earlier that their social interaction would be videotaped as research shows that such information alters how participants respond. They then will be presented with a consent form requesting their permission for the researchers to retain the videotaped footage for facial and vocalization coding purposes (irrelevant to the present study). In the unlikely event that a participant objects to the video recording, we will delete it in their presence. As we and others have done in prior studies, participants who give their consent will be presented in a consent form with six options regarding how we can use their videos (e.g., use in publications). Participants will also be informed of the purpose of the study and that they will not have potential to interact with the individuals in the images that they rated. Participants will be given an opportunity to ask

² Image set will be counterbalanced across sessions.

questions, then will be paid the remainder of their compensation (\$65 of \$90) and permitted to leave.

Participants in the alcohol condition will provide another BAC sample and report their subjective intoxication. They will then be seated together, given a light meal, and will remain in the lab until their BACs drop below 0.04%. Once their BACs approach .04% (i.e., <.05%) – as measured by BAC readings every 30 minutes – participants will be separated to complete the final questionnaires. At the time their BACs have dropped below .04%, they will be debriefed, paid, and permitted to leave after they confirm that they will not be driving themselves.