

The Effects of Contextual Familiarity on Alcohol Expectancies

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Abstract

Social familiarity has been widely studied by researchers across a range of psychological disciplines, with level of familiarity in social context being indicated as a powerful factor influencing affective and motivational states. The degree of familiarity among drinking companions has further been linked to patterns of alcohol use, with regular drinking in unfamiliar social settings being associated with heavy consumption and drinking in highly familiar settings being indicated as a potentially protective factor. But social familiarity has received relatively little attention in relation to the psychological and cognitive processes supporting alcohol consumption. Here, in two studies, we explore the effects of social familiarity as it relates to alcohol expectancies—psychological processes believed to serve as among the most proximal determinants of alcohol consumption. In Study 1, we use a between-subject design to explore the effects of familiarity in a sample of 400 undergraduates (40% Male), producing evidence that individuals believe that alcohol consumption will be associated with significantly greater social enhancement and tension reduction when it is consumed in the company of unfamiliar vs. familiar individuals. In Study 2 (N=107; 41% Male), we replicate these effects using a within-subject design and reveal effects of familiarity that are large in magnitude. Results of these studies provide initial evidence for familiarity among drinking companions as a factor driving beliefs surrounding alcohol's effects, and indicate familiarity as a potentially promising line of inquiry for future research exploring determinants of drinking.

Public Health Significance: Research has long shown that drinking among unfamiliar individuals—e.g., in public drinking establishments, large parties, and groups of strangers—is associated with problematic patterns of alcohol consumption. But we know little about the psychological processes that might explain this link. This research provides the first evidence

that drinkers believe they will gain more reward from drinking when they drink among unfamiliar vs. familiar individuals.

Keywords: social familiarity, acquaintance, alcohol expectancies, alcohol cognition, social context

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The setting in which drinking takes place exerts an important influence on patterns of alcohol use. Evidence from survey studies indicates that characteristics of typical drinking settings map closely to overall levels of consumption (Senchak, Leonard, & Greene, 1998; Single & Wortley, 1993; Storm & Cutler, 1981), and findings from experimental research illustrate that altering characteristics of the drinking context impacts the amount of alcohol people consume in these settings (Babor, Mendelson, Uhly, & Souza, 1980; Caudill & Marlatt, 1975). Specifically, most alcohol consumption takes place in social contexts, and the social characteristics of drinking context are believed to play an especially important part in determining drinking behaviors (Brown, 1985a; Hull, 1981). Researchers have explored a wide variety of social contextual factors—e.g., the size of the drinking group, the “stressfulness” of social interaction, the behavior of drinking companions—as they pertain to alcohol consumption and the psychological processes supporting consumption (Collins, Parks, & Marlatt, 1985; Ham, Zamboanga, Bridges, Casner, & Bacon, 2013; Senchak et al., 1998). Importantly, while much research has examined these key social contextual factors in relation to alcohol, one social variable that has received little direct attention, but may nonetheless be important for understanding problem drinking, is the drinker’s level of familiarity with drinking companions. In this paper, we take a step towards filling this gap, exploring social familiarity as it relates to alcohol-expectancies, psychological processes believed to be among the most proximal determinants of drinking, examining whether beliefs about alcohol's positive effects differ significantly at differing levels of social familiarity.

Alcohol Expectancies, Context, and Social Familiarity

Researchers have long been interested in the beliefs that people hold about alcohol’s effects (termed “alcohol expectancies”) as processes supporting alcohol use (Goldman, Del

Boca, & Darkes, 1999). A number of reviews (e.g., Goldman, 1994) indicate alcohol expectancies to be among the strongest predictors of drinking, even after other variables are controlled, and that expectancies about alcohol's positive effects—e.g., strong beliefs about alcohol's ability to relieve tension, increase positive mood and enhance social interaction—are particularly potent predictors of problematic alcohol use (Leigh, 1989). In more recent years, there has been increasing interest in potential variation in alcohol expectancies across contexts, and an emerging body of research explores how beliefs about alcohol's effects can differ depending on the setting in which expectancies are measured and/or the anticipated context of drinking (Ham et al., 2013; Read & Curtin, 2007; Wall, Hinson, McKee, & Goldstein, 2001; Wall, McKee, & Hinson, 2000). Using context manipulations ranging from vignettes (Wardell & Read, 2013, 2014) to in-vivo exposure (Wall et al., 2000), and a variety of implicit (Read & Curtin, 2007) and explicit measures (Monk & Heim, 2013; Wall et al., 2000) of alcohol expectancies, this emerging body of work produces compelling evidence for the importance of context as a factor in understanding alcohol expectancies as well as alcohol use more generally. Importantly, however, the settings examined within studies of context-specific alcohol expectancies tend to vary according to a wide range of factors—for example, studies compare participants' alcohol expectancies in a natural bar setting to their expectancies in a university building or a university laboratory, settings that differ dramatically according to a range of social and physical characteristics (Monk & Heim, 2013; Wall et al., 2001, 2000; although see Read & Curtin, 2007). In order to more fully understand context in relation to alcohol expectancies, further research isolating specific contextual characteristics seems warranted.

One specific element of drinking context with potentially important implications for alcohol's effects is social familiarity (Fairbairn & Sayette, 2014). In some cases, drinking

environments involve only familiar individuals—e.g., family, close friends, and/or romantic partners—whereas in other cases drinking environments involve individuals who may be largely unfamiliar to one-another prior to the drinking occasion, and so these drinking settings can be used as a framework for deepening acquaintance (Beck, Thombs, Mahoney, & Fingar, 1995; Brown, 1985a, 1985b; Single & Wortley, 1993). Of note, heavy and otherwise problematic alcohol consumption does certainly occur within exclusively familiar social settings, and some social dynamics associated with interactions between familiar individuals have been identified as powerful predictors of drinking patterns (e.g., social modeling; Caudill & Marlatt, 1975; Leonard & Eiden, 2007). Nonetheless, evidence has accumulated to indicate a link between regular drinking in the company of unfamiliar individuals and problematic patterns of alcohol consumption. Drinking among strangers and/or within contexts that facilitate stranger interaction (e.g., public drinking establishments, large parties, groups including unfamiliar individuals) is a robust predictor of heavy drinking (Brown, 1985b; Casswell & Zhang, 1997; Senchak et al., 1998; Shih et al., 2015), whereas regular drinking only among familiar individuals (e.g., within families, couples, and groups of close friends) has been indicated as a protective factor against problem alcohol use (Ahlström-Laakso, 1976; Reboussin, Song, & Wolfson, 2012; Roberts & Leonard, 1998; Room & Makela, 2000). This striking relationship between contextual familiarity and patterns of alcohol consumption emerges both within global studies mapping alcohol consumption across cultures around the world, as well as within longitudinal studies tracking drinking behaviors within individuals over time (Fairbairn & Sayette, 2014).

A variety of factors may account for the relationship between drinking in unfamiliar social contexts and problematic alcohol consumption. One possibility, indicated by both

pharmacological and expectancy literatures, is that drinking in the company of strangers is associated with stronger positive expectancies for alcohol's effects (Fairbairn & Sayette, 2014). Interactions with unfamiliar individuals are among the most reliable and widely-researched triggers of anxiety and negative emotion (Martin et al., 2015; Moreland & Beach, 1992; Zajonc, 1968). Importantly, however, stranger interactions are not only triggers to negative feelings, but they also offer possibilities for a particularly heady sense of reward—the pleasure associated with the acquisition of a new social bond (Baumeister & Leary, 1995). Alcohol is widely believed to help relieve social anxiety (Goldman et al., 1999), and thus it is likely that alcohol would be perceived by drinkers as helping to relieve the anxiety associated with stranger interactions, and thus potentially help them access the rewards possible within these novel social contexts (Fairbairn & Sayette, 2014).

Some of the earliest investigations of alcohol expectancies provides support for such a view, indicating that alcohol expectancies may differ depending on social familiarity within habitual drinking contexts. In particular, early work by Brown and colleagues (1985a, 1985b) found that individuals who typically drink in the company of strangers, vs. those who typically drink with more familiar individuals, tend to hold more positive expectancies for the effects of alcohol across a range of expectancy domains. But all research to date has been correlational, and therefore the causal direction of the relationship between familiarity and alcohol expectancies is unclear—i.e., whether different social contexts might truly alter expectancies, or if, instead, individuals with certain expectancies tend to gravitate towards particular contexts.¹ The current study revisits these important questions, this time employing experimental methods

¹ One study (Rauch & Bryant, 2000) examined participants' alcohol expectancies in response to a hypothetical "blind date" scenario vs. a scenario involving a date with a long-time partner. But scenarios used in this study differed according to factors other than level of familiarity, including those associated with sexual intimacy.

aimed at helping to disentangle the direction of causality in the relationship between social familiarity and alcohol expectancies.

The Current Research

The present research represents the first, to our knowledge, to explore the question of whether people believe the consequences of drinking to be different depending on whether drinking takes place in the company of strangers vs. familiar individuals. For the purposes of this initial study, we chose to examine a sample of university students. College students are not only a population at risk for problematic alcohol use (Johnston, O'Malley, Bachman, & Schulenberg, 2006), but they are also a population likely to be regularly exposed to a range of drinking contexts that may vary significantly in the extent to which they involve familiar individuals (Brown, 1985b; Senchak et al., 1998). Our measures were not intended to offer a comprehensive examination of people's expectancies regarding alcohol's effects across all domains, but instead to focus on those positive expectancies that have emerged as the most consistent predictors of alcohol use. In particular, informed by widely-used measures of alcohol expectancies (Brown, Christiansen, & Goldman, 1987; Fromme, Stroot, & Kaplan, 1993), as well as measures that have proved sensitive to relevant constructs within the pharmacological literature (Fairbairn & Sayette, 2014), we examine beliefs about alcohol's ability to relieve tension, improve positive mood, and enhance social experience. Finally, in this initial examination of social familiarity as a predictor of alcohol expectancies, we manipulate familiarity using a series of vignettes. These vignettes allow us to portray the details of various drinking contexts while, importantly, permitting us to hold constant across conditions all elements of these contexts aside from familiarity. We further use these vignettes to make an initial effort at exploring the effects of familiarity within the context of familiar social

relationships that vary, to some extent, in the valence of social feelings portrayed (positive vs. negative). On the basis of prior work (Brown, 1985a, 1985b; Fairbairn & Sayette, 2014), we predicted that, across both studies, participants would report expecting more tension relief, greater increases in positive mood, and more social enhancement in drinking contexts featuring unfamiliar individuals vs. those featuring familiar individuals.

Study 1

Methods

Participants: Participants consisted of 434 undergraduate students at a large public university in the Midwestern United States. Participants were 59.7% female with an average age of 19.59 years ($SD=1.71$). Participants were required to report drinking alcohol at least once within the past month. On average, participants in this study reported drinking 8.43 ($SD=5.54$) days out of the past 30, and consuming an average of 4.88 ($SD=2.20$) drinks per occasion. Participants were 60.4% White (non-Hispanic), 14.5% White Hispanic, 5.1% Black, 17.3% Asian, .7%, Middle Eastern, and 2.1% “other” racial category. See Table 1 for descriptive statistics by gender. Since the study required attentive reading on the part of participants, including the reading of several scenarios, we included 6 “attention check” questions distributed across the survey (e.g., “select ‘not at all’ in response to this question”). Participants were excluded if they did not respond to all 6 of these “attention check” questions correctly ($N=34$), leaving a final sample of 400 participants.

Materials and Procedures: Participants were asked to read 4 brief scenarios, to imagine themselves in each of these scenarios, and to report on the effects that they believed alcohol would have if they drank in that particular situation. Participants were randomly assigned to read either scenarios depicting drinking settings involving mainly individuals who they were familiar

with (“Familiar” condition; N=200) or drinking settings involving individuals who were strangers or only minimally acquainted with them (“Stranger” condition; N=200). For the purposes of this research, we chose to use the more detailed scenario format, rather than simply providing a list of drinking companions, for the following reasons: 1) providing a credible narrative can act as a cue to memory (Miller et al., 1987); and 2) stranger and familiar drinking contexts are likely to vary across various dimensions aside from familiarity, and our scenarios were aimed at holding these other factors constant (vs. leaving the details to the imaginations of participants). Scenarios were written to reflect drinking settings that college student drinkers might be expected to encounter, and to vary along various parameters including the physical setting of drinking, the size of the social group involved, and the gender composition of the group (Senchak et al., 1998). Scenarios for the “Familiar” condition were likewise written to reflect common drinking companions among college students, involving a range of relationships—romantic partner, friends, roommates (family drinking settings not included). In an effort to reflect realistic drinking settings and chosen drinking companions, most familiar scenarios explicitly noted (or implied) positive feelings towards familiar drinking companions, although one scenario (the “roommate” scenario) did describe negative feelings towards these companions. The order in which scenarios were presented was fixed across all participants. Familiar scenarios were slightly longer than “stranger” scenarios—on average, 7 words, 6% longer. No scenario content was changed across familiar and stranger conditions aside from that pertaining to level of familiarity and that required to ensure that the scenario would be perceived as reasonably credible within each condition—73% of content remained constant across conditions (see Appendix). Participants were not informed of the purpose of the study.

After reading each of the 4 scenarios, participants were asked to “rate the extent to which drinking alcohol would have the following effects in this situation.” They completed 10 items assessing their expectations regarding alcohol’s effects (a total of 40 alcohol expectancy items). We chose this brief scale format in order to minimize response burden across the 4 scenarios. Expectancy items consisted of 3 subscales: tension, social, and positive expectancies. Three items measured tension-reduction expectancies (e.g., “Drinking would make me feel more relaxed”), 3 measured positive mood and positivity, (e.g., “Alcohol would make me feel happy”) and 4 items measured sociability (e.g., “Alcohol would make me more outgoing”). Items for the positive subscale were adapted from Brown and colleagues’ (1987) Alcohol Expectancy Questionnaire and items for the tension and social subscales were adapted from Fromme and colleagues (1993) Comprehensive Effects of Alcohol scale. Participants responded on a 5-point Likert-type scale ranging from “Not at All” to “A Great Deal.” Internal consistency of each subscale was good (Tension $\alpha = .92$; Positive $\alpha = .91$; Social $\alpha = .92$).

Participants were also asked to provide some information about their recent drinking patterns. More specifically, they were asked to report on how many days of the past 30 they had consumed any alcohol (drinking frequency), and, on the days they did drink alcohol, how many drinks they typically consumed (drinking quantity).

Data Analysis Plan: The primary aim of data analysis was to compare alcohol expectancies across participants assigned to familiar and stranger conditions. Analyses examined 3 alcohol expectancy subscales: tension reduction, positive mood enhancement, and sociability. We used mixed effects ANCOVA in alcohol expectancy analyses, with expectancy subscale for each of the 4 individual scenarios entered as outcomes, familiarity condition, gender, and scenario (within-subject) entered as factors, and age, drinking frequency, and drinking quantity

entered as covariates. Given that we used random assignment, each covariate was explored in its own model. Since the aim of our analysis was to examine the overall effect of familiarity across individuals and social situations, primary analyses focused on overall alcohol expectancies across all 4 scenarios and all individuals. However, we also present the results of analyses examining whether the effects of familiarity on alcohol expectancies differed according to individual-difference criteria (e.g., gender) and according to the specific scenario.

Results

In our sample, men and women did not differ significantly in their drinking frequency, $t(398)=1.01$, $p=.314$, but men drank in larger quantities than women, $t(398)=2.86$, $p=.004$ (see also Table 1). Participants' age correlated with drinking quantity, $r(398)=-.120$, $p=.016$, but not drinking frequency, $r(398)=.048$, $p=.342$, such that older participants drank less per drinking occasion than younger participants. Drinking quantity differed significantly by race/ethnicity, $F(7, 392)=5.89$, $p<.001$, such that White participants ($M=5.35$, $SD=2.13$) drank significantly more alcohol per drinking occasion than Black participants ($M=3.89$, $SD=2.03$) or Asian participants ($M=3.93$, $SD=2.06$).

Table 2 presents descriptive statistics regarding alcohol expectancies for each scenario. As expected, and in line with past studies using related alcohol-expectancy scales (Brown et al., 1987; Fromme et al., 1993), we found that alcohol expectancy scores were related to drinking patterns as well as to the gender of the drinker. Individuals who drank alcohol more frequently as well as those who drank in greater quantities reported higher alcohol expectancies for tension reduction [frequency, $F(1, 398)=51.80$, $p<.001$; quantity, $F(1, 398)=19.71$, $p<.001$] positive mood enhancement [frequency, $F(1, 398)=50.69$, $p<.001$; quantity, $F(1, 398)=19.40$, $p<.001$], and social enhancement [frequency, $F(1, 398)=48.89$, $p<.001$; quantity, $F(1, 398)=20.93$,

$p < .001$], than individuals who consumed alcohol less frequently or in smaller quantities. Men had significantly higher expectancies for alcohol's effects along tension, $F(1, 398) = 7.00, p = .008$, positive, $F(1, 398) = 9.48, p = .002$ and social, $F(1, 398) = 9.46, p = .002$, subscales compared with women.

In tests of key study hypotheses, we found significant effects of familiarity condition along two of the three alcohol-expectancy subscales. Those assigned to the stranger scenario condition reported significantly higher expectancies for alcohol-related social enhancement, $F(1, 398) = 4.37, d = .21, p = .037$, and tension reduction, $F(1, 398) = 8.91, d = .30, p = .003$, than those assigned to the familiar scenario condition (see Figure 1). There were no significant differences or trends towards significance for the positive subscale, $p = .739$. There were no significant interactions between familiarity condition and gender in predicting alcohol expectancies, [Social, $F(1, 396) = .210, p = .65$; Tension, $F(1, 396) = .004, p = .95$; Positive, $F(1, 396) = .061, p = .81$]. Drinking patterns, p 's $> .32$, and age, p 's $> .06$, also did not significantly interact with familiarity condition in predicting alcohol expectancies.

Thus, social enhancement and tension-reduction alcohol expectancies in the stranger condition emerged as significantly higher than in the familiar condition when all four scenarios were considered together (results reported above). Follow-up analyses using Mixed ANOVAs further indicated a significant familiarity condition by scenario interaction, $F(3, 1194) = 27.97, p < .001$. The same pattern of means—stranger higher than familiar—was found in 3 out of 4 of these scenarios. With respect to the 4th (“roommate”) scenario, when this scenario was considered independently, the reverse pattern was found, such that expectancies for alcohol tended to be higher in the familiar vs. the stranger condition, p 's $< .11$, an effect that appeared to be driven by higher reported-alcohol expectancies within the familiar condition (see Table 2).

When effects of familiarity were considered only in the other three scenarios among which the pattern of effects was consistent, effects of the roommate scenario removed, results were as follows [Social, $F(1, 398)=13.87$, $d=.37$, $p<.001$; Tension, $F(1, 398)=23.22$, $d=.48$, $p<.001$; Positive, $F(1, 398)=1.52$, $d=.12$, $p=.22$].

Discussion

The results of Study 1 were generally in line with our predictions—individuals assigned to the stranger condition expected drinking to bring more social enhancement and tension reduction than individuals assigned to the familiar condition. These effects emerged consistently across three of the four scenarios presented. Nonetheless, given the recent emphasis for replication in psychology (Pashler & Harris, 2012; Schmidt, 2009) and the relative novelty of our findings, we thought it important to replicate the results of Study 1 within an independent sample. Further, in order to ensure that effects were truly due to the context manipulation and were not a spurious effect associated with our between-subjects study design, we opted to replicate these effects in the context of a within-subjects study. Between and within-subjects designs each have strengths, and each of these designs is also associated with distinct limitations—in interpreting the results of between-subjects studies, the researcher can never rule out the possibility that effects are an artifact of unmeasured differences between groups, while in interpreting within-subjects studies, the researcher cannot rule out the possibility of carry over effects associated with exposure to both conditions. Thus, through replicating our paradigm using a within-subjects study design, we sought to strengthen evidence for the effect of familiarity as a true effect and not an artifact of unmeasured differences across study groups.

Study 2

Methods

Participants: One hundred twenty-two (59.17% women) undergraduate students completed Study 2 (mean age=20.68, $SD=1.62$). Participants were again required to report drinking at least 1X/month. On average, participants reported drinking 8.65 days out of the past 30 ($SD=6.22$), and consuming an average of 4.55 drinks per occasion ($SD=2.57$). The racial/ethnic breakdown was similar to Study 1: 56.6% White (non-Hispanic), 10% White Hispanic, 10% Black, 19.1% Asian, .8%, Middle Eastern, and 3.3% “other” racial category. See Table 3 for descriptive statistics by gender. Fifteen participants (12%) were excluded for not correctly responding to attention check items, leaving a final sample of $N=107$.

Materials and Procedures: The procedures and stimuli for Study 2 were the same as in Study 1 with the key difference being that all participants responded to Familiar and Stranger variants of the 4 original scenarios—a total of 8 vignettes, or two versions of each of the 4 original scenarios. The order of the 4 scenarios was the same as in Study 1. Within each scenario, the order of stranger and familiar versions was counterbalanced, and the order of presentation of these versions within the 1st scenario (the “starting” position) was randomly assigned. More specifically, participants were randomly assigned to whether scenario 1 began familiar 1st or stranger 1st. From this point forward, the order of stranger and familiar versions was counterbalanced across scenarios (e.g., if scenario #1 had displayed the familiar version 1st, then scenario #2 would display the stranger version 1st, and so on). The wording of scenarios was the same as in Study 1, except that, in the case of all scenarios, the 2nd repetition of each scenario (either stranger or familiar version, depending on the randomly determined order) omitted some wording that was entirely redundant with the 1st version of the scenario. The alphas for the Tension ($\alpha=.93$), Positive ($\alpha=.96$), and Social ($\alpha=.96$) expectancy ratings were similar to Study 1.

Data Analysis Plan: We followed a similar data analytic plan as in Study 1. We used mixed model ANOVA with condition and vignette as within-subject factors and gender as a between-subject factor. Given that in Study 2 all effects were within-subject, covariates were not necessary as each participant served as their own control. Instead we explored whether age, drinking frequency, and/or drinking quantity moderated the within-subject effects in three separate models. In order to allow for the interpretation of the within-subject effects, between-subject factors were mean centered (e.g., age) or effect coded (e.g., gender; Schneider, Avivi-Reich, & Mozuraitis, 2015).

Results

In Study 2, drinking frequency and drinking quantity did not differ significantly according to age [frequency, $r(105)=-.07, p=.431$; quantity, $r(105)=.08, p=.378$], gender [frequency, $t(105)=-1.15, p=.252$; quantity, $t(105)=.66, p=.510$], or ethnicity [frequency, $F(5, 99) = .64, p = .668$; quantity, $F(5, 99) = .34, p = .887$]. As in Study 1, men had significantly higher expectancies for alcohol's effects along tension, $F(1,105)=4.04, p=.046$, positive, $F(1,105)=4.16, p=.043$, and social, $F(1,105)=4.77, p=.031$, subscales compared with women. Unlike Study 1 general expectancies were not significantly related to drinking frequency [Social, $F(103)=1.75, p=.188$; Tension, $F(1,103)=.59, p=.444$; Positive, $F(1,103)=1.07, p=.363$] or drinking quantity [Social, $F(1,103)=.73, p=.393$; Tension, $F(1,103)=1.32, p=.253$; Positive, $F(1,103)=.81, p=.369$].

In the main model, there was a significant effect of familiarity for the social enhancement, $F(1,106)=58.55, d_{av}=.76, p<.001$, positive mood $F(1,106)= 16.97, d_{av}=.36, p<.001$, and tension reduction, $F(1,106)=14.16, d_{av}=.84, p<.001$, subscales (see Figure 2). Participants reported expecting more social enhancement, positive mood enhancement, and tension reduction in the stranger condition compared to the familiar condition. Marginally significant interactions

between familiarity condition and gender emerged [Social, $F(1, 105) = 3.91, p = .051$; Tension, $F(1, 105) = 2.66, p = .11$; Positive, $F(1, 105) = 3.00, p = .087$]. Both men and women reported expecting that alcohol would have more positive effects in stranger vs. familiar situations, but these expectations tended to be particularly pronounced among men (Social, $d_{av} = .94$; Positive $d_{av} = .50$; Tension $d_{av} = .97$) compared with women (Social, $d_{av} = .60$; Positive $d_{av} = .25$; Tension $d_{av} = .69$). Neither drinking frequency, $p's > .31$, drinking quantity, $p's > .35$, nor participant age, $p's > .61$ moderated the effect of familiarity.

As in Study 1, results of ANOVAs indicated that the effects of familiarity condition did differ significantly according to scenario for social, $F(3, 318) = 7.42, p < .001$ positive, $F(3, 318) = 2.59, p = .058$, and tension, $F(3, 318) = 8.57, p < .001$, suggesting that an analysis of effects within each scenario would be appropriate. Of note, effects of familiarity condition remained consistent when each vignette was considered individually (all $p's < .011$ see Table 4). The only effect that was no longer significant was positive mood for scenario 1, $t(106) = 1.43, d_{av} = .15, p = .156$; however, the means were in the expected direction.

Discussion

Study 2 used a within-subject design to replicate the effects of Study 1. Results of this within-subjects study provided robust support for an effect of familiarity on alcohol expectancies. More specifically, participants reported expecting that alcohol would enhance social experience, enhance positive mood, and relieve tension to a greater extent in unfamiliar vs. familiar social situations, and these effects emerged consistently across scenarios examined.

General Discussion

Results of this research provide the first evidence for an effect of social familiarity on alcohol expectancies. Prior research has suggested that people's beliefs about alcohol's effects

vary dramatically according to context, but has generally not isolated specific elements of context that explain these findings (e.g., Monk & Heim, 2013; Wall et al., 2001). Here we identify social familiarity, which has been implicated as a moderator of alcohol response as well as a correlate of problematic drinking (Fairbairn & Sayette, 2014), as a factor driving alcohol expectancies. Results of our research suggest that individuals expect more social-enhancement, tension reduction and, to some extent, positive-mood enhancement from alcohol when they drink in the company of unfamiliar individuals vs. when they drink among familiar individuals. These effects emerged using a between-subject design in Study 1, and were then replicated using a within-subject design in Study 2.

Although results of this study deal most directly with expectations about alcohol's effects, these expectancies are informed, at least in part, by drinkers' direct experience with alcohol (Goldman et al., 1999). Therefore, a discussion of the current findings in light of the pharmacological literature seems warranted. The literature examining alcohol's pharmacological effects indicates that alcohol can act as a powerful stress reliever (Conger, 1951, 1956; see Sayette, Fairbairn, & Creswell, 2015). Importantly, alcohol's anxiolytic effects have tended to emerge as most pronounced when stress is attributable to uncertainty and/or self-consciousness (Hull, 1981; Moberg & Curtin, 2009). We have argued that interactions among strangers, which consistently give rise to feelings of uncertainty as well as self-consciousness (Berger & Calabrese, 2006; Leary & Kowalski, 1995), act as an "ideal" context for alcohol's mood enhancing and stress-relieving effects to emerge (Fairbairn & Sayette, 2014). Indeed, while a limited number of laboratory studies have examined the pharmacological effects of alcohol in social context, those that have provide some support for this notion—alcohol-administration studies exploring social interaction among strangers consistently produce moderate to large

subjective effects of alcohol (Doty & de Wit, 1995; Fairbairn, Sayette, Wright, et al., 2015; Kirkpatrick & de Wit, 2013), whereas alcohol-administration studies examining interactions among familiar individuals often produce non-significant or small subjective effects (Fairbairn & Testa, in press; Smith, Parker, & Noble, 1975; Testa, Crane, Quigley, Levitt, & Leonard, 2014). Future research should further examine the generalizability of the expectancy findings reported here within the domain of pharmacology, employing laboratory methods to examine whether the pharmacological effects of alcohol might be more pronounced in stranger vs. familiar contexts.

Left unresolved by the current research is the question of whether the same pattern of findings extend to situations in which feelings towards familiar individuals are negative. Although our vignettes mainly portrayed drinking contexts involving positive feelings towards familiar interaction partners—since we viewed these as more likely to portray realistic chosen drinking companions—one of our vignettes did depict a familiar drinking scenario involving negative feelings towards familiar individuals. In Study 1, participants reported believing that alcohol would have more positive effects in the context of negative interaction with familiar individuals vs. within the context of an analogous interaction with strangers—the only scenario that produced effects opposite to our predictions. In contrast, Study 2 produced effects for this scenario that were consistent with our hypotheses—participants reported believing that alcohol would have *less* positive effects in the context of negative interaction with familiar individuals vs. within the context of stranger interaction. One possibility is that since, in their everyday drinking lives, individuals may rarely elect to drink in the company of familiar individuals whom they actively dislike, their experience in such contexts might be limited and therefore their beliefs surrounding alcohol's effects in these negative familiar contexts might be less stable. In the current study, however, the order of scenarios was fixed, and therefore the study was not well

designed to examine effects on an individual scenario basis, since such effects would necessarily be confounded with any order effects. It is thus left for future research to examine whether effects of familiarity are independent of the valence of feelings towards interaction partners.

Finally, analyses in this study also produced some (limited) evidence that gender might moderate the impact of familiarity on alcohol expectancies. In Study 2, we found trends towards a significant interaction between familiarity and gender. More specifically, in this study, both men and women reported expecting more positive outcomes from drinking in stranger vs. familiar contexts, but these familiarity effects were especially pronounced among men. These findings are generally consistent with the results of laboratory studies revealing particularly pronounced socially enhancing effects of alcohol among men interacting in groups of strangers (Fairbairn, Sayette, Amole, et al., 2015; Fairbairn, Sayette, Aalen, & Frigessi, 2015). Nonetheless, gender effects were inconsistent across studies, and further research is needed before firm conclusions can be drawn about the role of gender.

Additional limitations should be noted. First, in an effort to isolate the influence of familiarity from other factors that might be confounded with familiarity in everyday drinking contexts, we used an "imagined" vignette design for this initial study. Future research—for example, using experience sampling designs—might explore the effects of familiarity among drinking companions on alcohol expectancies across real-life drinking contexts. Second, in this study, we focused on a sample of college students as a population of individuals at risk for heavy drinking who might (unlike individuals later in life) have active experience in a range of drinking contexts that vary in the extent to which they feature familiar individuals. Future research should explore whether effects generalize to other populations of individuals. Third, the current study did not assess the sexual orientation of participants. It is likely that participants' interpretation of

the social situations described in vignettes would have differed depending on their sexual orientation. Future research might explore the intersection of familiarity and sexuality in examining beliefs about alcohol's effects. Finally, in this study we focus on positive alcohol expectancies, since past research has indicated that these positive beliefs are the most consistent predictors of drinking behaviors. But people hold not only positive but also negative expectancies for alcohol's effects (e.g., alcohol will make me feel ill, alcohol will make me aggressive), and it is possible that both positive and negative expectancies differ according to social familiarity. Future research should explore expectancies across a range of positive and negative domains, and might also employ not only explicit but also implicit measures of expectancies.

In sum, this study provides the first evidence for social familiarity as a potentially important factor driving cognitions surrounding alcohol's effects. While social familiarity has been widely researched in other domains of psychology, where it has been identified as having a key influence on affective and motivational states, it has as of yet received little direct attention in relation to alcohol and other substances. This research indicates social familiarity as a potentially important factor in alcohol consumption and the psychological processes supporting consumption, and suggests promising avenues for future research.

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Table 1. Demographic characteristics of participants in Study 1

	Men (N=175)	Women (N=259)	Cohen's d [95% CI]
Age [M(SD)]	19.53 (1.31)	19.64 (1.93)	-0.06 [-0.26, 0.13]
Drink quantity [M(SD)]	5.27 (2.32)	4.61 (2.07)	0.30 [0.11, 0.50]
Drink frequency [M(SD)]	8.64 (6.03)	8.28 (5.18)	0.07 [-0.13, 0.26]
Race/Ethnicity [N(%)]*			-0.01 [-0.20, 0.18]
White	110 (62.9)	152 (58.7)	
Hispanic	18 (10.3)	45 (17.4)	
Black	6 (3.4)	16 (6.2)	
Asian	36 (20.6)	39 (15.1)	
Middle Eastern	1 (.6)	2 (.8)	
Other	4 (2.2)	5 (1.8)	
Average Alcohol Expectancies [M(SD)]			
Tension Reduction	2.99 (.84)	2.77 (.91)	0.25 [0.05, 0.44]
Social Enhancement	2.98 (.93)	2.72 (.91)	0.28 [0.09, 0.48]
Positive Mood Enhancement	2.80 (.93)	2.51 (.93)	0.31 [0.12, 0.51]

Note. Descriptives reported here reflect characteristics of the larger sample of participants who completed the study. For the purposes of final analyses, 34 participants were disqualified for answering “attention check” items incorrectly (see methods).

*Effect size estimate (Cohen's d) for Race/Ethnicity represents the effect of gender on the overall distribution of subjects across the 6 racial/ethnic categories

Table 2.

Alcohol Expectancy Descriptives by Scenario and Condition in Study 1

	Social		Positive		Tension	
	STR M (SD)	FAM M (SD)	STR M (SD)	FAM M (SD)	STR M (SD)	FAM M (SD)
Large Group/Party Scenario	3.46 (.97)	3.33 (1.04)	3.05 (1.04)	3.06 (1.11)	3.46 (.98)	3.24 (1.10)
Small Group/Pub Scenario	2.67 (1.10)	2.47 (1.16)	2.42 (1.08)	2.39 (1.17)	2.68 (1.07)	2.43 (1.13)
Roommates Scenario	2.87 (1.10)	3.14 (1.09)	2.55 (1.12)	3.02 (1.16)	2.88 (1.08)	3.13 (1.10)
Date Scenario	2.64 (1.09)	1.96 (1.05)	2.38 (1.26)	2.05 (1.06)	2.90 (1.09)	2.10 (1.09)
All 4 scenarios	2.91* (.88)	2.73* (.87)	2.60 (.92)	2.63 (.93)	2.98* (.84)	2.72* (.87)

Note. STR=Stranger condition; FAM=Familiar condition.

*Denotes a significant difference across stranger and familiar conditions within relevant alcohol-expectancy subscale. Since scenario is confounded with order—and therefore individual scenario-level effects are not readily interpretable—significant differences are marked at the level of the subscale and not the scenario (see methods).

Table 3. Demographic characteristics of participants in Study 2

	Men (N=49)	Women (N=73)	Cohen's d [95% CI]
Age [M(SD)]	21.59 (.86)	21.53 (.63)	.20 [-.17, .56]
Drink quantity [M(SD)]	4.73 (2.81)	4.30 (2.35)	.17 [-.19, .53]
Drink frequency [M(SD)]	7.87 (7.07)	9.18 (5.55)	-.21 [-.57, .15]
Race/Ethnicity [N(%)]*			
White	28 (57%)	41 (56%)	-.25 [-.11, .61]
Hispanic	2 (4%)	10 (13%)	
Black	3 (6%)	10 (13%)	
Asian	12 (25%)	11 (15%)	
Middle Eastern	1 (2%)	0 (0%)	
Other	3 (6%)	1 (1.3%)	
Average Alcohol Expectancies [M(SD)]			
Tension Reduction	3.09 (.72)	2.81 (.75)	.38 [.02, .74]
Social Enhancement	3.06 (.72)	2.75 (.74)	.39 [.03, .76]
Positive Mood Enhancement	2.85 (.75)	2.55 (.79)	.42 [.06, .79]

Note. Descriptives reported here reflect characteristics of the larger sample of participants who completed the study. For the purposes of final analyses, 15 participants were disqualified for answering “attention check” items incorrectly (see methods).

*Effect size estimate (Cohen's d) for Race/Ethnicity represents the effect of gender on the overall distribution of subjects across the 6 racial/ethnic categories

Table 4.

Alcohol Expectancy Descriptives by Scenario and Condition in Study 2

	Social		Positive		Tension	
	STR M (SD)	FAM M (SD)	STR M (SD)	FAM M (SD)	STR M (SD)	FAM M (SD)
Large Group/Party Scenario	3.43 (1.10)	3.11 (1.02)	3.10 (1.10)	2.94 (.97)	3.46 (1.09)	2.95 (1.08)
Small Group/Pub Scenario	3.04 (1.12)	2.37 (1.09)	2.64 (1.11)	2.36 (1.09)	3.08 (1.10)	2.41 (1.06)
Roommates Scenario	3.26 (1.09)	2.67 (1.02)	2.93 (1.12)	2.65 (1.12)	3.35 (1.08)	2.83 (1.11)
Date Scenario	3.11 (1.09)	2.12 (1.10)	2.72 (1.09)	2.19 (1.06)	3.36 (1.18)	2.20 (1.15)
All 4 scenarios	3.22* (.92)	2.57* (.76)	2.85* (.93)	2.54* (.76)	3.32* (.92)	2.60* (.78)

Note. STR=Stranger condition; FAM=Familiar condition.

*Denotes a significant difference across stranger and familiar conditions within relevant alcohol-expectancy subscale. Since scenario is confounded with order—and therefore individual scenario-level effects are not readily interpretable—significant differences are marked at the level of the subscale and not the scenario (see methods).

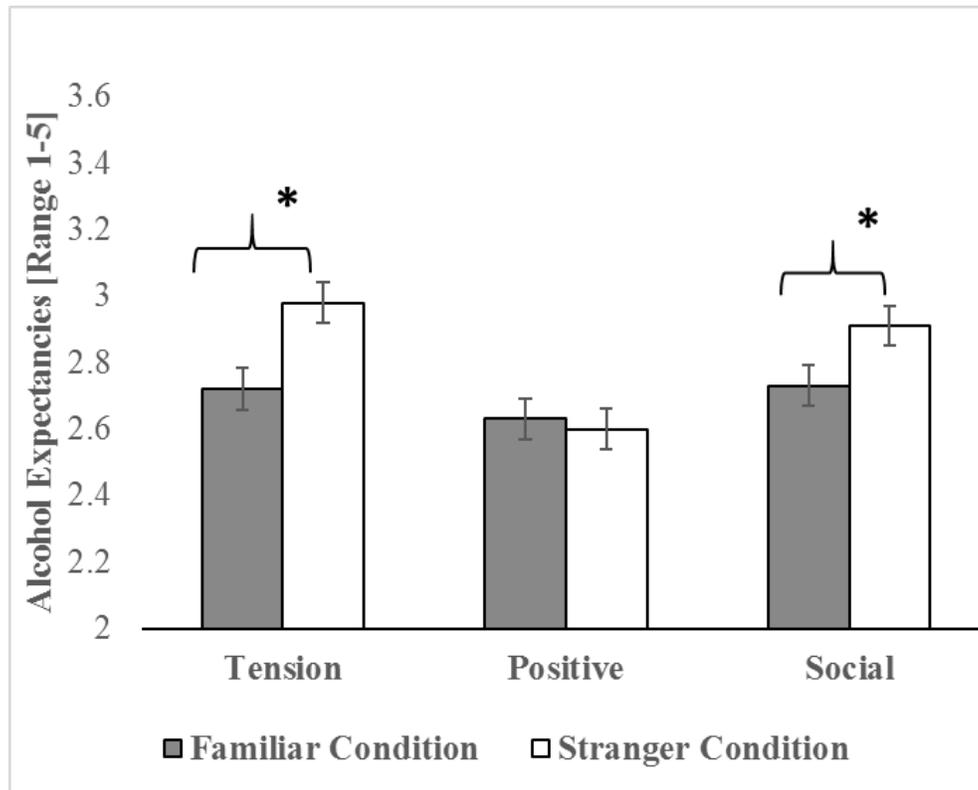


Figure 1. Study 1 mean levels of tension reduction, positive mood enhancement, and social enhancement alcohol expectancies among those assigned to familiar and stranger conditions. Bars attached to each column represent standard errors. Significant differences across conditions are marked by an asterisk.

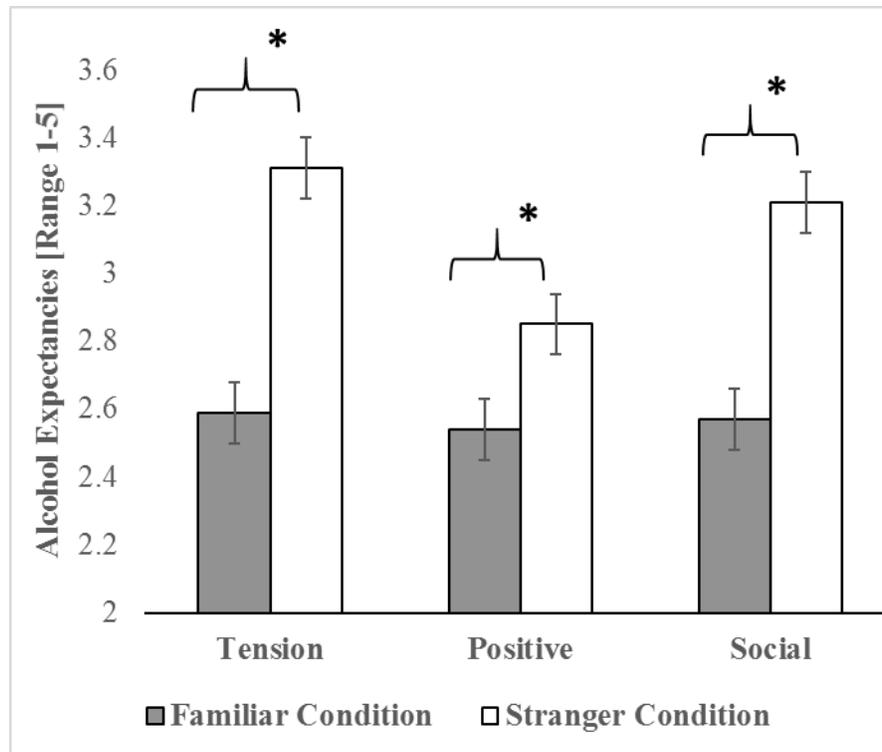


Figure 2. Study 2 mean levels of tension reduction, positive mood enhancement, and social enhancement alcohol expectancies among those assigned to familiar and stranger conditions. Bars attached to each column represent standard errors. Significant differences across conditions are marked by an asterisk.

Appendix

Scenarios by Stranger and Familiar Condition

	Strangers/Minimal Acquaintance Condition (N=200)	Familiar Condition (N=200)
Large Group/Party Scenario	“Imagine that you are invited to a big party one Friday night. You arrive at the house where the party is being held and find the place is packed. The music is pounding, drinks are being served, and people have already started to dance. You enter the living room, take a look around, and see a ton of unfamiliar faces. Almost everyone you run into is a complete stranger to you or is someone you only vaguely know. ” (78 words, 14 altered)	“Imagine that you are invited to a big party one Friday night. You arrive at the house where the party is being held and find the place is packed. The music is pounding, drinks are being served, and people have already started to dance. You enter the living room, take a look around, and see a ton of familiar faces. Most of the people you run into are friends or close acquaintances, and many of them are people you have known for years. ” (83 words, 20 altered)
Small Group/Pub Scenario*	“Imagine that you have just met two potential friends at school today. They just recently transferred to this university from another campus, and you guys spend a few minutes talking after you are randomly seated next to them in one of your courses. These two guys seem really cool. But you have only just met them and haven't chatted for more than a couple of minutes so you all really don't know much about each other yet. One of them suggests that the three of you hang out on Saturday night, and you decide to head to a local pub/restaurant. On Saturday, you meet up with the two guys later in the evening, and the three of you head into the restaurant. You slide into a booth, place your orders, and start to talk and get to know each other better. ” (141 words, 44 altered)	“Imagine that you have just run into two very old friends at school today. They just recently transferred to this university from another campus, which you find out when you are randomly seated next to them in one of your courses. These two guys are really cool. You have been friends with them for years and, although you haven't chatted to them in a few months, you all know almost everything there is to know about each other. One of them suggests that the three of you hang out on Saturday night, and you decide to head to a local pub/restaurant. On Saturday, you meet up with your old friends later in the evening, and the three of you head into the restaurant. You slide into a booth, place your orders, and start to talk and catch up. ” (138 words) 45 altered)
Roommates Scenario*	“Imagine that it's the beginning of the school year and you've just moved into a new dorm room. You've been assigned to share a place with suitemates—five guys who are in the same year as you. You've only chatted with them very briefly as you moved	“Imagine that it's the end of the school year and you're just about to move out of your dorm room. You've been sharing a place with assigned suitemates—five guys who are in the same year as you. Since you all share the same small living space, you've

	<p>your stuff in. So you have no idea how you feel about them yet or how much you might like them. One of your suitemates suggests that the six of you have a little celebration on Friday to kick off the new school year. You're a little uneasy about the idea of hanging out, since you really don't know these guys yet, but figure you should put in the effort and show up for this first gathering. The six of you meet in the common room for food and drinks and start to chat." (141 words, 44 altered)</p>	<p>spent a ton of time together and you know them very well. But, although you rarely fight, you find these guys really obnoxious and just don't like being around them at all. One of your suitemates suggests that the six of you have a little celebration on Friday to mark the end of the year. You're a little uneasy about the idea of hanging out, since you really don't get along with these guys, but you figure you should put in the effort and show up for this last gathering. The six of you meet in the common room for food and drinks and start to chat." (155 words, 58 altered)</p>
Date Scenario	<p>"Imagine that it is Friday night and you are scheduled for a date with someone new. A mutual friend suggested that the two of you might make a good couple and offered to set you up. Aside from exchanging a few texts, you guys have never talked before. Your date, who enjoys cooking, has invited you over and offered to make you a romantic dinner this Friday. You spend more time than usual getting ready, and arrive at your date's house in one of your best outfits. Your date has set the table with candles and flowers and has prepared an impressive-looking meal. The two of you dig in and start up a conversation." (114 words, 17 altered)</p>	<p>"Imagine that it is Friday night and you are scheduled for a date with your long-time boyfriend/girlfriend. Four years ago, a mutual friend suggested that the two of you might make a good couple and offered to set you up. The two of you have been dating ever since, and you spend a ton of time together just talking. Your partner, who enjoys cooking, has invited you over and offered to make you a romantic dinner this Friday. You spend more time than usual getting ready, and arrive at your partner's house in one of your best outfits. Your partner has set the table with candles and flowers and has prepared an impressive-looking meal. The two of you dig in and start up a conversation." (125 words, 29 altered)</p>

*In the "Roommate" and "Pub" scenarios, gender pronouns were changed such that male participants read scenarios depicting interactions with men and females read scenarios interactions depicting interactions with women

The "altered" words refer to the number of words that were added to the "base" version of the scenario—which is identical across condition—within each condition in order to shape it into "stranger" or "familiar" version.