Experiential Avoidance and Negative Affect as Predictors of Daily Drinking

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Abstract

People who drink alcohol to cope with negative affect tend to drink more and experience more frequent negative alcohol-related consequences. Experiential avoidance, the tendency to avoid, suppress, or otherwise attempt to control unwanted inner experiences, is a largely pathological process that may help account for how negative affect is linked to increased alcohol consumption. However, research to-date has typically used global, trait-like measures, which limit our understanding of the conditions under which experiential avoidance is problematic. The current study tested both between-person (trait) and within-person (daily) variation in experiential avoidance and negative affect as predictors of solitary and social drinking in a sample of 206 adult drinkers who completed daily diaries for 21 days. Participants higher in trait experiential avoidance drank alone more often, while those higher in trait negative affect consumed greater quantities when drinking alone. Although daily fluctuations in experiential avoidance did not predict solitary drinking, there was a significant interaction between daily experiential avoidance and trait negative affect. For participants high in trait negative affect, greater experiential avoidance on a given day predicted consuming more when drinking alone. For participants low in trait negative affect, greater experiential avoidance on a given day predicted drinking alone more often, but consuming fewer drinks on these occasions. Experiential avoidance did not predict social drinking in any model. Overall, results suggest that a broader tendency to experience negative affect sets the context for experiential avoidance to be linked to more harmful patterns of drinking.

Keywords: experiential avoidance, alcohol, negative affect, substance use disorder, solitary drinking, social drinking

Experiential Avoidance and Negative Affect as Predictors of Daily Drinking

Research has repeatedly shown that alcohol use is triggered by negative affect in many individuals (Bresin, Mekawi, & Verona, 2018; Cheetham, Allen, Yücel, & Lubman, 2010; Simons, Wills, & Neal, 2014). Negative reinforcement (Baker et al., 2004) and tension-reduction models (Cooper, Frone, Russell, & Mudar, 1995) articulate how negative reinforcement processes can maintain and accelerate drinking when alcohol consumption enables escape or avoidance of negative affect. However, not all drinkers respond to negative affect with increased drinking and many individuals drink for other reasons (e.g., social and enhancement motives; Kuntsche, Knibbe, Gmel & Engels, 2005). For example, negative reinforcement based drinking appears to be more influential among those with alcohol dependence than those without (Cho et al., 2019). Additionally, people who drink alcohol to cope with negative affect tend to drink more alcohol in general and also experience more frequent negative alcohol-related consequences (e.g., Cooper, et al., 1995; Kuntsche, Stewart, & Cooper, 2008; Simons, Gaher, Oliver, Bush, & Palmer, 2005).

One process that may help clarify how and when negative affect may precipitate drinking is experiential avoidance (EA), a broad class of coping behavior that refers to the tendency to control, suppress, or otherwise alter the form, frequency, or intensity of unwanted internal experiences, such as negative affective states (Hayes, Strosahl, & Wilson, 1999). Hundreds of studies have shown that EA is a broadly pathological process that is cross-sectionally associated with and longitudinally predicts the development of mental health problems across a wide range of disorders (e.g., Bluett et al., 2014; Chawla & Ostafin, 2007; Spinhoven, Drost, de Rooij, van Hemert, & Penninx, 2014). EA has also been associated with established avoidance neurocircuitry in the brain (Schlund, Magee, & Hudgins, 2011). Thus, researching links between

EA and alcohol use has the potential to strengthen connections between the vast research on EA and human avoidance learning and problematic substance use. In addition, it may be useful to focus on avoidance in addition to negative affect in that emotion regulation mechanisms may be more modifiable than internal experience (Hayes, Strosahl, & Wilson, 2012). Such mechanisms are postulated to arise as learned responses to internal experiences, rather than to be caused by them, and thus are may vary independently of the intensity or quality of one's emotional state (Hayes et al., 2012). In relation to alcohol, EA has been posited as a trait that can link negative affect to behavior that reduces negative affect, such as drinking, through negative reinforcement learning (Kingston, Clarke, & Remington, 2010). Survey research using global, trait-like measures have found EA to correlate with alcohol use disorders (Levin et al., 2014), negative alcohol-related consequences (Levin et al., 2012), and drinking coping motives (Stewart, Zvolensky & Eifert, 2002).

However, to date this research has only been conducted using trait-like measures assessing the general tendency to engage in EA and patterns of problem drinking. Such studies indicate the potential role of EA in problem drinking, but do not answer critical questions that would further inform prevention and treatment, such as *how* engaging in EA leads to alcohol use problems and *under what conditions* this occurs (i.e., when is engaging in EA problematic?). These questions might be best answered using intensive longitudinal designs that provide a more fine-grained analysis at both the between-person (i.e., trait) and within-person (i.e., state) level. While there is some evidence that between-person differences in EA predict drinking and alcohol problems (i.e., EA predicts who is at greater risk for alcohol problems), little is known about within-person fluctuations in EA or temporal links between state changes in EA and alcohol (i.e., when and how people are at risk for alcohol problems). This is important to investigate empirically as some studies have shown that within-person and between-person associations with alcohol consumption can differ (Dvorak & Simons, 2014; Luoma, Guinther, DesJardins, & Vilardaga, 2018; Simons et al., 2014).

EA fluctuates from day-to-day (Shahar & Herr, 2011) and hour-to-hour (Levin et al., 2018; Wenze et al., 2018). These fluctuations have been shown to be meaningful in terms of predicting negative and positive affect (Hershenberg et al., 2017; Levin et al., 2018; Wenze et al., 2018), engagement in valued activities (Levin et al., 2018), and social anxiety (Kashdan et al., 2014). In addition, state fluctuations in EA have been shown to predict later changes in negative thinking, mood, and stress (Wenze, Gaugler, Sheets, & DeCicco, 2018) and later decreases in self-esteem and increases in paranoia (Udachina et al., 2009, 2014). Thus, research suggests that the tendency to engage in EA is not only associated with psychological problems at a global, between-person level (i.e., individuals high in EA in general are at risk of problems), but also at a within-persons level (i.e., engaging in EA in the moment has negative effects). This raises the question of whether within-person fluctuations in EA similarly predicts problematic alcohol use (i.e., "does engaging in EA lead to problem drinking on a given day?") and the moderating conditions under which engaging in EA leads to negative outcomes (i.e., "when and for whom does EA lead to problem drinking?"). In particular, because EA appears to consist of patterns of response primarily to unwanted or unpleasant affective states, it is important to consider how heightened negative affect may be a context in which momentary elevations in EA could lead to problematic drinking outcomes.

Current Study

The current study sought to gain a more complete understanding of how EA contributes to alcohol use by modeling both within-person (state) and between-person (trait) variations in

EA and negative affect as well as their interaction. We recruited a community sample of light-to-heavy drinkers to allow us to assess the effects of EA and negative affect at every level of drinking behavior. Following a baseline assessment, participants were asked to submit data on EA, mood, and drinking every day for 21 days. This daily process approach allowed us to model both between-persons and daily within-persons fluctuations in EA and negative affect as they predicted drinking behavior in our sample. Based on previous studies (e.g., Levin et al., 2012; 2014; Wenze et al., 2018), we predicted that both trait-level between-persons and daily state-level within-persons EA and negative affect would predict drinking behavior.

In addition, we modeled social drinking separately from solitary drinking. This was because both theory (Cooper et al., 1995) and previous research (e.g., Sayette, 2017) suggest that the causes of social drinking are largely distinct from the causes of solitary drinking and that previous authors have called for modeling social and environmental factors in studies of daily drinking behavior (Stevenson, Drovak, Kramer, Peterson, Dunn, Leary, Pinto, 2019). In particular, negative mood states are more often tied to solitary drinking than social drinking (Arpin et al., 2015; Mohr et al., 2001; Mohr et al., 2010; Mohr et al., 2005; Blevins, Abrantes, & Stephens, 2018). As EA is largely a form of escape from or avoidance of negative affect, we hypothesized that EA would have its strongest relationship to drinking in solitary contexts where people are more likely to use drinking to cope, rather than social contexts where people are more likely to use drinking to contact social contingencies (Mohr et al., 2001; Blevins et al., 2018) or as part of larger patterns of sensation-seeking (Arbeau, Kuiken, & Wilde, 2011) or through social conformity (O'Donnell, Richardson, Fuller-Tyszkiewicz, Liknaitzky, Arulkadacham,Dvorak,& Staiger, 2019). Therefore, we expected that negative affect and EA and would be more strongly linked to solitary drinking than social drinking.

As EA is primarily a response to aversive affect and some studies have found that the relationship between substance use and EA may depend upon the level of negative affect (Levin et al., 2014; Gorka, Ali, & Daughters, 2012; Ostafin & Marlatt, 2008), we modeled the interaction between daily fluctuations in EA and negative affectivity. For example, one study with 972 first year college students found that students with comorbid SUD and depressive/anxiety disorder were higher on EA than students with only SUD (Levin et al., 2014). Studies on constructs related to EA, such as distress tolerance and acceptance also moderated links between EA and substance use. For example, a study of 150 adults found that depressive symptoms were only associated with problematic alcohol use among low, but not high distress tolerance participants (Gorka, Ali, & Daughters, 2012). Similarly, a study of 50 undergraduate drinkers (Ostafin & Marlatt, 2008), found that mindful acceptance moderated the association between automatic drinking motivation and hazardous drinking.

Based these studies, we anticipated that the effects of state, within-participant changes in EA would depend upon a person's level of negative affect. Specifically, we hypothesized that daily fluctuations in EA would more strongly predict drinking among participants generally higher in negative affect and that daily fluctuations in EA might interact with daily fluctuations in negative affect to predict drinking behavior. Finally, we expected that these effects would be larger for solitary drinking versus social drinking, as the former has been more consistently associated with coping in response to unwanted affective states.

Methods

Participants

A sample of 238 drinkers were recruited for the research study, and 206 participants were included in the final analysis sample for the study. Reasons for exclusion included completing only one diary response (*N* = 8), reporting extreme drinking that was over 5 SD above other participants (*N* = 3; drinking on average 20 or more drinks a night), reporting no drinking at all during the study period (*N* = 13), or not responding to any of the diaries (*N* = 14). The average age of participants in the final analysis sample was 33.6 years (*SD* = 11.8 years, range of 18-75), and 69.1% identified as female, 29.4% as male, and 1.5% as "other" gender. When asked about their race/ethnicity, 78.5% of participants identified as White, 11.2% multiracial, 3.9% Black or African American, 2.9% Hispanic, 1.0% Asian, 0.5% American Indian or Alaska Native, and 1.0% an "Other" race or ethnicity. With regard to marital status, 62.1% of participants identified being "single," with 21.8% currently married or partnered, 13.1% divorced or separated, and 1.9% "widow" or "widower." On average, participants completed 15.25 years of education (*SD* = 2.25), with the majority (98.3%) completing high school and over half (59.2%) completing 4 or more years of education after high school.

Design and Procedure

The study design was approved by a federally registered IRB. Participants were screened via phone or email to ensure they had at least one drink per week over the last two weeks. Other inclusion criteria included daily access to the internet, not currently pregnant, ability to travel to the research center, being at least 18 years of age, and the ability to read English. Following the phone screen, participants were scheduled for an in-person assessment; participants were required to be sober at the appointment. Participants provided informed consent, whereupon they completed baseline questionnaires, only some of which we report in this paper. Participants were then trained how to use the online survey and were instructed to complete the survey remotely on a daily basis for the next 21 days, between the hours of 4:00 p.m. and 6:00 p.m. This daily survey included assessment of negative affect and EA for the current day, as well as alcohol use the prior evening. We only included data for entries received between 3:50 p.m. and 6:10 p.m. We stayed in contact with participants to provide feedback about their diary completion rates and to troubleshoot any obstacles. Participant compensation was based on the portion of the study they completed, with a maximum compensation amount of $50. On average, participants completed 14.70 dairies. In order to conduct study analyses, we required back-to-back diaries, of which we obtained an average of 11.71 (*SD* = 5.77) per participant for a total of 2,271 diaries.

Measures

Daily negative affect. To assess mood, participants reported how they felt over the course of the day (since waking up that day until survey completion that day, 4-6 p.m.) with items from the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988). To create a measure of overall negative mood that day, we averaged the 10 negative affect items (*M* = 1.39, *SD* = 0.54)*,* which participants rated with a five-point Likert-type scale anchored by “Very slightly or none at all” and “Extremely.” Items were similarly reliable across the between- and within-persons levels (α for between = .88; α for within = .88).

Daily EA. To assess participants’ daily efforts to avoid, suppress, or otherwise attempt to control their affective experiences, we created a 3-item measure of EA (α for between = .74; α for within = .75) and averaged across items to compute participants’ total scores (*M* = 2.14, *SD* = 1.09). We selected the three highest loading items from the daily measure of EA developed in Shahar and Herr (2011). In their study, the daily measure of EA was shown to be empirically discriminable from negative affect, associated with trait self-reports of experiential avoidance, and predicted daily associations in line with theory, providing some support for the validity of this measure. Participants were asked “When you have had negative thoughts or feelings TODAY (even if you didn’t have many), to what extent did you do the following things?”

Participants rated themselves on the following items: “I tried to distract myself from them,” “I tried to push unwanted thoughts out of my mind,” and “I tried to get rid of unwanted thoughts,” each of which participants rated with a five-point Likert-type scale anchored by “Not at all” and “A great deal.”

Drinks alone/social/total. Participants reported both the number of alcoholic beverages they consumed “while alone” and “while interacting with others” the prior evening (i.e., after completing their last diary but before waking up that day). Participants were presented with familiar types and volumes of alcoholic beverages and instructed to enter the number of drinks consumed for each type; we transformed the number of each type of beverage into standard drinks (defined as 14g of “pure” alcohol) based on typical alcohol concentrations in each drink type and summed these to obtain the total standard drinks within each time period.

Alcohol Use Disorders Identification Test (AUDIT). The AUDIT (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993; current study $\alpha = .85$) is a 10-item self-report measure of intake, dependence, and problems related to the consumption of alcohol. The AUDIT is a reliable and valid measure of alcohol abuse, dependence, and harmful use (de Meneses-Gaya, Zuardi, Loureiro, & Crippa, 2009).

Acceptance and Action Questionnaire – II (AAQ-II). The AAQ-II (Bond et al., 2011; current study $\alpha = .89$) is a seven-item self-report measure psychological inflexibility, of which experiential avoidance is a facet. The AAQ-II is probably the most widely used measure of these constructs and demonstrated good psychometric properties in its initial publication but has also been questioned as to how well it measures experiential avoidance (Gamez, Chmielewski, Ruggero, Kotov, & Watson, 2011).

Overview of Data Analyses

We conducted three sets of analyses to assess how both state (within-participant) and trait (between-participant) variation in EA and negative affect affected social and solitary drinking. The unit of our analysis was whether a participant drank on a given evening as well as how much the participant drank if they chose to do so, as predicted by variables measured earlier in the evening. Each predictor variable was assessed based on the participant's reports on the day of the target evening (i.e., in the afternoon prior to that evening). Drinking behavior on the target evening was reported the next day in the subsequent diary entry (i.e., on the day after the target evening). As such, both the EA and negative affect variables were lagged from the daily diary at day *(d-1)* relative to when the daily dairy report of drinking occurred.

All analyses were performed using MPlus, Version 8.0 (Muthén & Muthén, 2019). We modeled participants' drinking as a function of (a) the probability of having any solitary or social drinks and (b) the count of drinks consumed, if a participant chose to drink, using zero-inflated Poisson (ZIP) models (Atkins et al., 2013), using a zero-inflation specification for both the drinking variables. Briefly, ZIP models use a Poisson link function to model the association between the predictors and the count of drinks consumed, and a separate Logistic link function to model the association between the predictors and the probability of the zero-generating process (i.e., not drinking), due to a high frequency of zeros (i.e., reports of not drinking) in the data. All models incorporated a multi-level structure through specifying "TYPE=Twolevel" in the analysis section of the Mplus syntax. A multi-level analysis allowed us to examine whether state fluctuations in the predictors (EA and negative affect) during the daytime predicted within-person variance in the probability of drinking and the count of drinks consumed in the evening, as well as whether trait differences in the predictors explained between-person differences in the average probability of not drinking as well as the average number of drinks consumed across daily reports. To compute variables at the between-person or trait level of the model, the within person ratings on EA and negative affect were averaged by participant identifier prior to the analyses. This method also had the advantage of allowing us to model the factors associated the initiation of drinking separately from the factors associated with consumption levels once drinking are sometimes different (O'Donnell et al., 2019).

To facilitate interpretation of the intercepts, all within-persons predictors were centered around the participant mean for that predictor and all between-persons predictors were centered around the grand mean of the predictor. This means that intercepts reflect the average probability of not drinking and the average count of drinks consumed alone and socially, when all other predictors were held at the mean of the sample.

As this is a new area of investigation, the first set of models examined the roles of state and trait variability in negative affect and EA predicting solitary drinking (Model 1) and social drinking (Model 2). We expected the effects of EA and negative affect at the state and trait levels to independently predict drinking, and to be most strongly predictive of solitary drinking,.

Since EA is hypothesized to be a response to negative affective states, we hypothesized that it may interact with these states to predict drinking. Specifically, we hypothesized that state variability in EA may serve as a more robust predictor of solitary drinking in the context of elevated daily negative affect (i.e., state negative affect) as well as for those individuals who tend toward more ongoing and pervasive negative affect (i.e., trait negative affect). Therefore, the second and third set of models were constructed to examine the effects of state variability in EA as a predictor of drinking behavior, dependent on a person's daily negative affective experiences (Models 3 & 4) and trait levels of negative affect (Models 5 & 6). The dependency of the relation between state EA and drinking behavior on state negative affect was modeled through the inclusion of within-persons interaction between state EA and state negative affect predicting solitary or social drinking. Conversely, the dependency of the relation between state EA and drinking on participants' trait levels of negative affect was modeled through a cross-level interaction between negative affect and EA predicting either drinking behavior.

Results

Descriptive Statistics

The baseline AUDIT was included to allow comparison of this sample to other samples and was not included in daily-diary statistical models below. AUDIT scores in this sample (M = 9.33, SD = 5.68) indicated that 43.2% of the current sample could be identified as engaging in "problematic" use of alcohol based on a cutoff of 8 or more (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001), whereas 37.4% of participants could be identified as engaging in "hazardous or harmful" levels of alcohol use based on a cutoff of 10 or more (Saunders et al., 1993). Participants reported consuming alcohol on 48.7% of evenings, with social drinking (37.6% of days) more common than drinking alone (20.2% of days). On evenings when participants consumed some alcohol, they averaged 3.46 standard drinks (N = 1057 observations, SD = 1.86) in total. On nights they drank with others, they averaged 2.95 drinks (N = 816 observations; SD = 2.16). On nights when they drank alone, they averaged 2.83 drinks alone (N = 439 observations; SD = 1.68).

Zero-order correlations on aggregated (between-persons) variables from the daily diary are reported in Table 1. We included correlations of participants' average negative affect, EA, and drinking based on averaged levels of those variables from the daily entries in order to get a general sense of their relationships in this sample, while acknowledging that this does not provide a complete picture because it aggregates over repeated measures within each participant.

Average negative affect was significantly, moderately correlated with the average number of solitary drinks consumed, but not social drinks consumed. Average EA was significantly moderately associated with the average number of solitary drinks and weakly but significantly related to the average number of social drinks. Negative affect and EA had the strongest bivariate association of all pairs of variables.

Measurement Validity Analyses

To assess convergent validity of our daily measure of EA, we correlated participants' average EA score based on the daily measure with the AAQ-II and found a correlation of $r(205) = .35$, $p < .001$. To assess the construct validity of the EA and NA items, two multilevel confirmatory factor analysis models (ML-CFAs) were fit to the data. The first ML-CFA assumed that a single latent factor at both the within and between-person levels accounted for variance across all 13 EA and NA items. The second ML-CFA included two latent factors at the within and between-person levels of the model, with the first latent factor explaining variance in the 10 NA items and the second latent factor explaining variance in the three EA items at each level. A chi-square difference test for nested models was used to compare the single-factor and the two-factor models to determine whether the EA and NA items covaried with the same or distinct latent constructs. This test was highly significant, with $\chi2$ for the single factor model = 4387.6, $\chi2$ for the two factor model = 2072.0, and $\chi2$ difference at 2 degrees of freedom = 2315.6 (p <.0001), suggesting the single-factor model was significantly worse-fitting than the two-factor model. This finding was corroborated by the RMSEA for either model, where RMSEA single factor = 0.128 and RMSEA two factor = 0.087. Based on these results, it appears that the EA and NA items were best represented through separate EA and NA factors. These factors were slightly correlated at both levels, with phi = .074, $p < .001$ at the within-person level and phi = .144, $p < .001$ at the between-person level.

Models 1-2: Main Effects of EA and Negative Affect

The results of our first two models are presented in Table 2. The models examine the effects of state and trait variability in EA and negative affect in predicting social drinking (Model 1) and solitary drinking (Model 2).

Considering social drinking (Model 1), after controlling for state and trait variability in EA, both within- and between-person variability in negative affect predicted the likelihood of drinking socially. People who had more trait negative affect were less likely to drink socially than those with lower trait negative affect, such that a one standard-deviation increase in trait negative affect was associated with 25% fewer nights on which alcohol was consumed in a social context. In addition, as state negative affect increased on a given day, the likelihood of drinking socially decreased, such that participants were 16% less likely to drink socially per standard deviation increase in state negative affect (relative to that person's average negative affect). Negative affect did not predict the amount consumed once drinking was initiated. EA did not significantly predict social drinking at any level. The overall picture is that higher negative affect predicted a lower likelihood of social drinking at both a trait and state level, but that negative affect did not tend to affect *how much* a person drank socially.

Considering solitary drinking (Model 2), between-person, trait negative affect (after controlling for EA) predicted the amount consumed alone that evening once drinking was initiated. Those individuals who had higher trait negative affect tended to drink greater quantities in the evening when they had started drinking, compared to those who had lower trait negative affect. Specifically, for each standard-deviation higher in trait negative affect, participants consumed 30% more alcohol when they did drink. Neither state nor trait negative affect predicted the likelihood of solitary drinking, nor did state variability in negative affect predict the amount of alcohol consumed in solitary contexts. After controlling for negative affect, within-person variability in EA did not predict the likelihood of solitary drinking, but between-person, trait differences in EA did. In other words, those with higher trait EA tended to be more likely to drink alone in the evening than those with lower trait EA. Specifically, for each standard-deviation increase in average EA, participants drank alone on 29% more nights. Neither between- or within- person variability in EA predicted *how much* a person drank alone.

To summarize the results of Models 1-2, only negative affect predicted social drinking, with more negative affect at both state and trait levels predicting a lower probability of social drinking. EA had no effects on social drinking. In contrast, solitary drinking was predicted by both trait negative affect and trait EA. Essentially, people high in trait EA tended to drink alone *more often*, whereas people higher in trait negative affected tended to *consume greater quantities* when they did drink alone. State variability in negative affect and EA had no significant relationship with solitary drinking that evening. Thus, those who were drinking the most in solitary contexts (in terms of both frequency and quantity) were participants who had high trait levels of both negative affect and EA.

Overall, Models 1-2 suggest that negative affect has an influence at both the state and trait levels, with EA only having an influence at a trait level. In addition, these models suggest that EA is only linked to solitary drinking, not social drinking. Finally, both EA and negative affect appeared to explain independent facets of solitary drinking, even after controlling for each other.

Models 3-4: Interactions Between State EA and State Negative Affect

Models 3-4 examined whether daily fluctuations in participants' negative affect moderated the association between concurrent fluctuations in experiential avoidance and drinking. These models assessed whether state EA was more strongly associated with either solitary or social drinking in the context of concurrent state deviations in negative affect from participants' average negative affect scores. If state fluctuations in EA are differentially associated with later solitary or social drinking in the context of moments of heightened negative affect, relative to participant's typical negative affective experiences, then there should be a significant within-person interaction between negative affect and EA.

The results of models 3-4 are presented in Table 3. As this table shows, neither the likelihood of drinking nor amount of drinks consumed in solitary or social situations was associated with a within-person interaction between state negative affect and state EA.

Models 5-6: Interactions Between State EA and Trait Negative Affect

Models 5-6 were constructed to test whether a relation between state level EA and solitary drinking might be found if trait levels of NA were taken into account. If state fluctuations in EA are more influential on solitary drinking for people who tend toward more negative affect, then a statistically significant cross-level interaction should be identified in this model.

The results of this model are presented in Table 4. As this table shows, trait negative affect significantly moderated the effects of daily fluctuations in EA in predicting both the likelihood of drinking as well as the number of solitary drinks consumed that evening. As expected, the interaction did not predict social drinking and therefore those models will not be discussed further.

Figures 1 plots the relation between daily fluctuations in EA and the expected count of drinks consumed alone later in the evening. Greater state EA predicted a lower number of drinks consumed alone when trait negative affect was fixed to one standard-deviation below the mean, but predicted more drinks consumed alone when trait negative affect was held to one standard-deviation above the mean. Thus, the relation between daily fluctuations in EA (within-person) and drinks consumed alone was stronger among those who were higher in trait-level negative affect than those who were lower in negative affect (between-persons). Another way to interpret this graph is to say that for those with high trait negative affect, higher EA on a given day predicted a greater number of drinks alone compared to days with lower EA. The converse was true of people with low trait negative affect. For these individuals, higher levels of EA on a given day predicted a reduced number of drinks alone that evening.

Figure 2 plots the relation between state fluctuations in EA and the expected probability of drinking alone that evening. Surprisingly, the strongest effects of state fluctuations in EA on likelihood of drinking alone were found for those with low trait negative affect. For those individuals with low trait negative affect, as EA was higher on a given day (compared to their average level) they were increasingly likely to drink. This relationship was attenuated as trait negative affect increased, such that for those with higher trait of negative affect, state variability in EA had little influence on their likelihood of drinking alone that evening. Thus, opposite to the findings for the amount consumed alone, greater engagement in EA on a given day (within-person) was more strongly related to the likelihood of drinking alone among individuals who were *lower* in trait-level (between-person) negative affect.

Thus, the overall pattern is that for people with high trait negative affect, state fluctuation in EA bears little relation to their likelihood of drinking alone. However, if solitary drinking is initiated, higher levels of EA on a given day predict the tendency to drink more amongst people with high trait negative affect. For people with low trait negative affect, higher state EA is associated with an increased likelihood of drinking alone, but with attenuated amounts once drinking is initiated.

Discussion

The present collection of findings clarify how both experiential avoidance (EA) and negative affect are related to subsequent alcohol use through a more fine-grained analysis of both within- and between-person level predictors of the quantity and likelihood of drinking alone and socially. As discussed in more detail below, overall the results indicate that 1) EA predicts solitary drinking, but not social drinking, 2) participants who tend to engage in EA more often (trait-level) are more likely to drink alone, but do not consume more alcohol when alone, and 3) the effect of daily fluctuations in EA (state-level) on solitary drinking depends on participants' average levels of negative affect (trait-level). These results highlight possible risk factors for problematic or excessive drinking behavior, while also demonstrating person-specific effects of state fluctuations in EA. We first discuss the results for solitary drinking in more detail, which EA did predict, followed by social drinking, which EA did not predict.

At a between-person level, both trait negative affect and trait EA predicted solitary drinking. Participants who were high in trait EA tended to drink *more often* whereas those who were high in trait negative affected tended to *consume greater quantities* when they did drink. Thus, those who were drinking alone the most (in terms of both frequency and amount) were those participants who were high on both trait negative affect and trait EA (i.e., those who report a higher average level of negative affect and EA). This suggests that chronically high levels of EA may lead to the habit of solitary drinking as a means of avoiding aversive inner experiences, while trait negative affect seems to drive the amount of alcohol consumed once drinking alone has begun. These results align with those of other authors (O'Donnell et al., 2019) showing that the factors predicting the initiation of drinking may differ from those that predict quantities consumed once drinking has begun and suggest that drinking patterns that are likely to have the most severe outcomes are most likely among those who are both avoidant *and* experiencing high levels of negative affect.

Contrary to predictions, daily fluctuations in EA (state-level) did not predict solitary drinking in main effect models. This result appears consistent with two recent studies (O'Donnell et al., 2019; Stevenson et al., 2019) that found daily variability in drinking-to-cope motives was not associated with alcohol consumption in main models, but inconsistent with one study that did find a significant relationship (Dvorak, Pearson, & Day, 2014). Together, our results in combination with the above studies suggest while trait-like differences in motivation to drink to escape negative affect may be robustly associated with drinking at a between-subjects level, that daily variability in motivation to escape may not be broadly associated with drinking in the absence of moderators.

Based on the idea that EA is a response to negative affective states (Hayes et al., 2012), we conducted moderation models to test whether day-to-day variability in EA interacted with negative affect to predict solitary drinking. In the first set of analyses (see Table 3), we examined whether day-to-day negative affect moderated the association day-to-day to variability in EA with solitary drinking that evening. We expected that EA might be more strongly associated with solitary drinking on days with higher negative affect, but this was not borne out. These findings suggest that daily variability in negative affect does not moderate *when* daily variability in EA and drinking are linked to each other. We next turn our attention to analyses examining for *whom* negative affect may moderate the relationship between EA and drinking.

A second set of models (see Table 4) examined whether between-subjects variability in negative affect (trait negative affect) moderated the association day-to-day to variability in EA with solitary drinking that evening. This was intended to model concepts derived from newer research suggesting EA tends to be most harmful when deployed inflexibly and frequently (e.g., Kashdan et al., 2014; Levin et al., 2018). In other words, it may be more fruitful to examine between subject, trait-like moderators to identify *for whom* EA is more or less problematic, rather than examining within subject, state-like variables to identify *when* EA is problematic for all individuals. In these models, the cross-level interaction between trait negative affect and day-to-day EA predicted both the likelihood of drinking alone, as well as the number of drinks consumed once drinking was initiated. Overall, these results are consistent with the premise that EA is more problematic for some individuals who experience elevated NA in general. In further unpacking these complicated interactions, we first turn to interpreting results for the subgroup of individuals high in trait negative affect.

Cross-level interactions showed that among those high in trait negative affect, higher levels of EA on a given day bore little relation to their likelihood of drinking alone that evening (see Figure 2). In other words, for people chronically high in NA, their initiation of drinking appeared to remain essentially the same regardless of whether they were engaging in EA earlier in the day. In contrast, results differed when predicting levels of solitary consumption once drinking had begun. For those high in trait negative affect, daily increases in EA tended to amplify the greater quantities consumed that were observed among this group in simple effect models. These individuals were frequently exceeding five or more drinks on days with higher than usual EA. In contrast, when daily EA was lower than usual, they tended to temper the amount the consumed. One possible interpretation of these results is that while the initiation of drinking among high NA people is more habit like or based on other cues, on days with high EA they may be exhausted by chronic attempts to control negative affect and, as a result, have fewer self-control resources available in the evening to moderate the amount they drink under continuing negative affect (e.g., Muraven, Collins, & Nienhaus, 2002).

Empirically, our results are consistent with previous studies indicating the interaction between trait negative affectivity and EA is a stronger predictor of problem drinking (Gorka, Ali, & Daughters, 2012; Levin et al., 2014) than main effects and further clarify when and how these variables affect drinking behaviors. Our results suggest that it is not so much that the momentary presence of negative affect that sets the context for EA to be harmful, but rather a broader context of ongoing negative affect. In other words, engaging in EA may not tend to be harmful if experiencing high NA occasionally, but might be harmful (in this case, through triggering binge levels of consumption) for those who generally experience more NA. Perhaps this is because people with chronically elevated levels of negative affect have developed more rigid and less situationally sensitive patterns of coping through avoidance. This idea aligns with the results of Shahar and Herr (2011), which showed that people with depression tended to respond with inflexibly high levels of experiential avoidance even on days when negative affect was low. This concept also conforms to newer research and theorizing on emotion regulation, which posits that successful coping may be less related to the use of purported adaptive (e.g., reappraisal) or maladaptive (e.g., EA) emotion regulation strategies, but more to the variability in utilization of emotion regulation strategies across situations and the breadth of different coping strategies (Blanke, Brose, Kalokerinos, Erbas, Reideriger, & Kuppens, in press). Future studies could further examine this concept by focusing on the variability of EA itself and EA in comparison to other emotion regulation strategies to see whether this variability in coping is related to alcohol consumption and alcohol related problems.

We now move on to interpreting the results for those who tended toward lower levels of trait NA. Compared to high NA individuals, these individuals were no more or less likely to drink alone, but did tend to drink less alcohol once drinking began. However, these results were moderated by daily levels of EA. When EA was higher on a given day, low NA individuals tended to increase their likelihood of drinking alone. At the same time, when experiencing higher than usual EA on a given day, they appeared to slightly temper their already low quantities consumed in a typical episode, moving from about 2.7 drinks at a mean level of EA to about 1.3 drinks at high levels of EA. Thus, while low NA individuals were more likely to drink on high EA days, they still didn't drink amounts that were likely to be harmful. These results may reflect a tendency to respond to relatively rare experiences of negative affect with attempts to escape via drinking, perhaps indicating a more contextually sensitive and adaptive deployment of drinking to escape. Since parallel effects were not found for social drinking, it does not appear that people low in NA simply shift their drinking away from social contexts when experiencing high EA, but actually increase their rate of having a drink or two alone.

What is more puzzling with these low trait NA individuals are the days where they reported extremely low levels of experiential avoidance and where models predicted low level probabilities of drinking, but high amounts consumed if drinking were to occur. We could see no theoretical reason to think that a combination of low trait negative affect and low daily EA would lead to near binge levels of consumption. In response to this finding we further examined the distribution of our data and identified that at low NA, within-person EA was relatively kurtotic, meaning that people didn't show much day to day variability in EA at that end of trait NA. In contrast, at higher levels of NA, there was more variability in EA. Given this, the slope shown for low NA in Figure 1 is probably most representative of the sample at +/-1 SD around the mean of EA, whereas the slopes shown for moderate and high NA may be more representative of the sample at wider ranges of EA. Other possibilities are that the higher variability in the NA group drove the parameter estimates for moderation effects and that there may have been non-linearity in the data that we were unable to model sufficiently.

These results highlight trait negative affect as one important moderating factor that predicts when engaging in daily EA is harmful. EA might be a particularly important clinical target for SUD clients who experience high negative affect, for example, those with co-occurring mood and anxiety disorders. This idea aligns with other data showing that EA can interact with negative affect to predict substance use-related outcomes. For example, Minami et al. (2015) showed that smokers who were experiencing higher levels of depression had lower quit rates if they were also high in EA. Similarly, Levin et al. (2014) found that EA was only related to having a SUD among participants who had a comorbid depressive/anxiety disorder. The lack of a significant relation between daily EA and the frequency of solitary drinking among individuals high in negative affect, coupled with heavy drinking when solitary drinking is initiated, suggests it may be particularly important with clients who are high in negative affect to reduce the chances of engaging in solitary drinking or to reduce EA as a pathway to reducing the amount they drink when alone. In contrast, daily EA may not be an important target to reduce solitary drinking among clients who tend to have low levels of negative affect. Alcohol dependent individuals who do not report much negative affect may instead be drinking alone based on positive reinforcement or other reasons not linked to negative affect (Cho et al., 2019).

There were no significant relations between EA and social drinking in any model, at either a between-persons or within-persons level. This finding adds to between-subjects research showing that the use of alcohol to cope with negative affect is generally not associated with social drinking (Blevins et al., 2018) and suggests this may also be true at a within-subjects level We did find that people who were high in trait negative affect tended to drink less often (socially) than those with lower trait negative affect. In addition, days with higher negative affect were associated with a reduced likelihood of drinking socially. In essence, negative affect decreased the likelihood of social drinking at both a state and trait level, but did not affect the amount consumed when a person decided to drink socially. This finding suggests that people tend to react to higher levels of negative affect by refraining from drinking with others. One interpretation might be that when experiencing negative affect, people may tend to withdraw from social situations and instead drink alone.

Overall, our results are consistent with the idea that social drinking is less characterized by an avoidant function. In other words, social drinking may more often serve to increase positive mood or be triggered by external cues compared to solitary drinking such as in O'Donnelly et al. (2019) who found, in a sample of students, that being around peers who were drinking was much more powerfully associated with drinking outcomes than mood. Prior studies of mood-drinking relationships tend to find stronger relationships between negative mood and solitary drinking than between negative mood and social drinking (e.g., Arpin et al., 2015; Luoma et al., 2018; Mohr et al., 2001; Mohr et al., 2010; Mohr, Brannan, Mohr, Armeli, & Tennen, 2008; O'Connell et al., 2019). Differing associations across solitary versus social drinking are also consistent with the view that it is important to consider the social context of drinking when considering alcohol's effects (Sayette, 2017; Stevenson et al., 2019).

Our study contributes to refining tension-reduction (Cooper et al., 1995) and negative reinforcement (Baker et al., 2004) models of drinking in that it identifies at least one psychological process that may sometimes tie negative affect to more problematic levels of drinking (i.e., EA) and for whom this may be the case (i.e., those generally high in negative affect). In addition, it also highlights the importance of distinguishing social from solitary drinking, as suggested by other studies (e.g., Blevins et al., 2018; Luoma et al., 2018; Mohr et al., 2010; O'Connell et al., 2019). Similar to other studies, our research shows that negative affect is more likely to cue solitary than social drinking, at least among less problematic drinkers. Indeed, in our sample, both higher trait negative affect and higher daily negative affect, relevant to one's baseline, actually predicted less social drinking.

Characteristics of this sample should be considered when discussing generalization. The sample was largely white, female, and fairly educated. About 43% of the sample was engaged in problematic levels of drinking. For example, it's unclear whether these results would generalize to a college student sample, where it is likely that drinking occurs much more dominantly in social contexts than in our sample. Similarly, as this study included non-problem drinkers, it is unclear the degree to which predicted patterns could reflect moderate, non-problematic versus problematic drinking.

Results should also be interpreted in the context of the relatively narrow assessment of EA used in this study and its relatively low internal reliability (α for between = .74; α for within = .75). The measure we utilized was based on a previously published assessment of daily EA that showed good preliminary properties (Shahar and Herr, 2011) and which in this study also showed adequate internal reliability and adequate discrimination from our daily measure of negative affect. However, recent conceptualizations have suggested that EA may be multidimensional in nature with a newer measure identifying six potential factors: distress aversion, distress endurance, distraction/suppression, behavioral avoidance, repression/denial, and procrastination (Gamez et al., 2011). Of these factors, our scale appears most representative of their distraction/suppression subscale and as such may not represent the full range of what EA encompasses. Interestingly, in our study, the AAQ-II correlated with our daily measure of experiential avoidance ($r = .35$) at exactly the same level as the distraction/suppression subscale of the Gamez et al. (2011) measure correlated with the AAQ-II (also $r = .35$). This buttresses the idea that that our scale also measures the distraction/suppression component of EA, but the lack of other convergent validity measures still leaves some lack of certainty as to what the scale measures. As such, future studies would benefit from the development of a more comprehensive state assessment of EA that benefits from these more recent developments and should work to distinguish measurement of EA from closely associated concepts such as distress tolerance (Gorka, Ali, & Daughters, 2012) and acceptance (Ostafin & Marlatt, 2008).

It is also important to note that this study was not designed to examine whether EA mediates the relationship between negative affect and drinking. As a first step, we sought to determine the contexts in which within and between variability in EA predict alcohol consumption. The use of moderation and not mediational analyses might be particularly relevant in understanding the lack of significant interaction effects between day-to-day EA and day-to-day negative affect. One possibility is that within-subject, daily relationships might be better modeled through mediational models wherein daily increases in negative affect are seen to lead to daily increases in EA, which then might subsequently result in evening drinking. Another possibility is moderated mediation wherein mediation of relationships between daily changes in negative affect and drinking via daily changes in EA only occurs for those with heightened trait

EA (Preacher, Rucker, and Hayes, 2007). Testing for mediation and moderated mediation appears worthy of future study, but this study was not designed to test such effects.

Another limitation of this study is that the item response options for our measure of negative affect made us unable to differentiate between days with low NA and those with a complete absence of NA. Since our EA items presume some level of negative affect, some responses to the EA measures could be invalid if individuals had a complete absence of negative affect on a given day. We also noted that day-to-day variability in EA was less for participants with lower trait negative affect. This implies that future studies might want to exclude EA scores on days when there is absolutely no negative affect to respond to. We were also unable to differentiate between different types of negative affect, such as anxiety versus depression, which future researchers may benefit from doing.

Finally, it is noteworthy that a potential limitation on finding within-person effects was imposed through the requirement of obtaining back-to-back observations on all within-person variables. Certain participants may have responded several times yet may have missed days of reporting between observations, such that may have attenuated the effects observed at the within-person level yet nevertheless permitted calculation of between-person, average values. This would have reduced our power to detect within-person associations due to having some participants with limited within-person data with which to estimate such effects.

Together, these results indicate that it is the combination of high trait negative affect and higher EA, both at a trait and a state level, that predicts the highest levels of solitary drinking. In addition, these results suggest that daily variability in EA is most tied to problematic levels of drinking only among those with higher levels of negative affect. These results lend support to treatments for SUD, such as Acceptance and Commitment Therapy (Hayes et al., 2012; Luoma, Kohlenberg, Hayes, & Fletcher, 2012) and Mindfulness-Based Relapse Prevention (Bowen, Chawla & Marlatt, 2010) that aim to build the ability to notice and accept difficult emotion states without drinking. Both of these treatments have been shown to reduce EA in people with SUDs (e.g., Menéndez, García, Lamelas, & Lanza, 2014; Witkiewitz, Bowen, Douglas & Hsu, 2013), which our analyses suggest would tend to reduce the quantity of alcohol consumed, but perhaps would be less likely to affect the frequency of consumption. Perhaps just as importantly, these results suggest that targeting reductions in EA may not be as effective of a target when attempting to reduce drinking that occurs in social contexts. This may be particularly relevant to consider when targeting the problematic drinking in college students, much of which occurs in social contexts.

Fine grained and detailed analyses of drinking contexts, as well as the inclusion of both between and within-person predictors are important in developing more targeted interventions. We hope that this study will spur more research of this sort that can support translational research efforts.

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Table 1

Zero-order correlations among person-level study variables

	M_Alone	M_Social	M_NA
M_Social	.335***		
M_NA	.335***	.033	
M_EA	.317***	.174**	.446***

Note. M_Alone = Average number of drinks participant consumed alone. M_Social = Average number of drinks participant consumed socially. M_NA = Participant's average negative affect score. M_EA = Participant's average experiential avoidance score. **p < .05, **p<.01, ***p<.001.*

Table 2

Multilevel models predicting drinking from negative affect and experiential avoidance

	Parameter	RR/OR	Estimate	*SE*	*Z*	*p*	95% CI	
							UL	LL
Social Drinking (Model 1)								
Fixed Effects								
Count	Intercept	1.54	0.43	0.09	4.64	<.001	1.85	1.29
	Within-Person Time	1.00	0.00	0.00	1.60	.109	1.00	1.00
	Within-Person EA	0.96	-0.04	0.04	-0.95	.343	1.04	0.89
	Within-Person NA	0.99	-0.02	0.05	-0.29	.774	1.10	0.89
	Between-Person EA	1.07	0.07	0.05	1.51	.131	1.17	0.98
	Between-Person NA	1.04	0.04	0.05	0.75	.457	1.16	0.94
Binomial	Intercept	2.70	0.99	0.05	19.15	<.001	2.99	2.44
	Within-Person Time	1.00	0.00	0.00	-0.49	.624	1.00	1.00
	Within-Person EA	0.88	-0.13	0.08	-1.67	.094	1.02	0.75
	Within-Person NA	1.16	0.15	0.07	2.20	.029	1.33	1.02
	Between-Person EA	0.92	-0.08	0.11	-0.71	.480	1.15	0.74
	Between-Person NA	1.25	0.22	0.10	2.19	.028	1.52	1.02
Solitary Drinking (Model 2)								
Fixed Effects								
Count	Intercept	3.40	1.22	0.12	10.08	<.001	4.31	2.68
	Within-Person Time	1.00	0.00	0.00	-1.45	.147	1.00	1.00
	Within-Person EA	1.16	0.15	0.13	1.17	.240	1.50	0.90
	Within-Person NA	1.09	0.08	0.09	0.88	.377	1.30	0.91
	Between-Person EA	1.06	0.06	0.14	0.41	.682	1.40	0.80
	Between-Person NA	1.30	0.26	0.11	2.48	.013	1.60	1.06

Binomial	Intercept	2.43	0.89	0.11	8.13	<.001	3.01	1.96
	Within-Person Time	1.00	0.00	0.00	0.09	.929	1.00	1.00
	Within-Person EA	0.89	-0.12	0.09	-1.31	.190	1.06	0.74
	Within-Person NA	1.06	0.05	0.07	0.80	.423	1.21	0.92
	Between-Person EA	0.71	-0.34	0.15	-2.32	.020	0.95	0.54
	Between-Person NA	0.90	-0.10	0.14	-0.75	.451	1.18	0.69

Note. EA = Experiential Avoidance. NA = Negative Affect. All predictor variables are standardized at the respective level (within- or between-person) of the model.

Table 3

Multilevel models with within-person interactions between W.P. negative affect and W.P. experiential avoidance

	Parameter	RR/OR	Estimate	*SE*	*Z*	*p*	95% CI	
							UL	LL
Social Drinking (Model 3)								
Fixed Effects								
Count	Intercept	2.20	0.79	0.06	13.88	<.001	2.48	1.96
	Within-Person Time	1.00	0.00	0.00	1.69	.092	1.00	1.00
	Within-Person EA	0.95	-0.05	0.04	-1.48	.139	1.03	0.88
	Within-Person NA	0.84	-0.18	0.12	-1.67	.095	1.05	0.66
	Between-Person EA	1.14	0.13	0.06	2.04	.042	1.28	1.01
	Between-Person NA	1.00	0.00	0.15	0.00	.999	1.34	0.75
	W.P. NA * W.P. EA	1.05	0.05	0.08	0.61	.540	1.23	0.90
Binomial	Intercept	1.99	0.69	0.11	6.49	<.001	2.47	1.61
	Within-Person Time	1.00	0.00	0.00	-1.82	.069	1.00	1.00
	Within-Person EA	0.90	-0.11	0.08	-1.43	.154	1.05	0.77
	Within-Person NA	1.52	0.42	0.17	2.49	.013	2.12	1.09
	Between-Person EA	0.84	-0.17	0.13	-1.27	.203	1.09	0.65
	Between-Person NA	2.01	0.70	0.31	2.25	.024	3.70	1.10
	W.P. NA * W.P. EA	0.76	-0.28	0.17	-1.65	.098	1.05	0.54
Solitary Drinking (Model 4)								
Fixed Effects								
Count	Intercept	1.26	0.23	0.12	2.003	.045	1.59	0.99
	Within-Person Time	1.00	0.00	0.00	0.52	.604	1.00	1.00
	Within-Person EA	1.01	0.01	0.06	0.16	.874	1.14	0.90
	Within-Person NA	1.08	0.08	0.19	0.39	.697	1.57	0.75
	Between-Person EA	1.14	0.13	0.13	1.00	.317	1.47	0.88

	Between-Person NA	1.36	0.31	0.26	1.19	.233	2.27	0.82
	W.P. NA * W.P. EA	0.94	-0.06	0.12	-0.51	.613	1.91	0.74
Binomial	Intercept	6.42	1.86	0.16	11.82	<.001	8.79	4.69
	Within-Person Time	1.00	0.00	0.00	-0.18	.861	1.00	1.00
	Within-Person EA	0.82	-0.20	0.10	-2.09	.036	1.00	0.67
	Within-Person NA	1.16	0.15	0.19	0.80	.423	1.69	0.80
	Between-Person EA	0.62	-0.48	0.19	-2.52	.012	0.90	0.43
	Between-Person NA	0.55	-0.59	0.42	-1.39	.165	1.26	0.24
	W.P. NA * W.P. EA	0.98	-0.02	0.20	-0.11	.912	1.45	0.66

Note. EA = Experiential Avoidance. NA = Negative Affect. B.P. = Between-Persons. W.P. = Within-Persons. All predictor variables are standardized at the respective level (within- or between-person) of the model. The interaction term is based on the between-persons standardized NA value and the within-persons standardized EA value.

Table 4

Multilevel models with cross-level interactions between B.P. negative affect and W.P. experiential avoidance

	Parameter	RR/OR	Estimate	*SE*	*Z*	*p*	95% CI	
							UL	LL
Social Drinking (Model 5)								
Fixed Effects								
Count	Intercept	1.53	0.43	0.09	4.57	<.001	1.84	1.28
	Within-Person Time	1.00	0.01	0.00	1.69	.091	1.00	1.00
	Within-Person EA	0.89	-0.13	0.06	-2.06	.039	1.00	0.80
	Within-Person NA	1.01	0.01	0.06	0.14	.889	1.12	0.91
	Between-Person EA	1.07	0.07	0.05	1.49	.137	1.17	0.98
	Between-Person NA	1.04	0.04	0.06	0.76	.447	1.16	0.93
	B.P. NA * W.P. EA	0.96	-0.04	0.05	-0.91	.364	1.05	0.87
Binomial	Intercept	2.68	0.99	0.05	18.41	<.001	2.97	2.41
	Within-Person Time	1.00	0.00	0.00	-0.51	.610	1.00	1.00
	Within-Person EA	0.83	-0.19	0.08	-2.22	.026	0.98	0.71
	Within-Person NA	1.20	0.18	0.07	2.57	.010	1.37	1.04
	Between-Person EA	0.92	-0.08	0.11	-0.72	.473	1.15	0.74
	Between-Person NA	1.25	0.22	0.10	2.24	.025	1.52	1.03
	B.P. NA * W.P. EA	1.05	0.05	0.11	0.45	.651	1.29	0.85
Solitary Drinking (Model 6)								
Fixed Effects								
Count	Intercept	3.25	1.18	0.12	9.59	<.001	4.14	2.56
	Within-Person Time	1.00	0.00	0.00	-1.44	.150	1.00	1.00
	Within-Person EA	1.00	0.00	0.11	-0.03	.980	1.23	0.81
	Within-Person NA	1.11	0.10	0.08	1.31	.189	1.29	0.95

	Between-Person EA	1.05	0.05	0.15	0.30	.761	1.42	0.78
	Between-Person NA	1.26	0.23	0.11	2.08	.038	1.56	1.01
	B.P. NA * W.P. EA	1.41	0.34	0.15	2.24	.025	1.90	1.04
Binomial	Intercept	2.29	0.83	0.12	6.86	<.001	2.91	1.80
	Within-Person Time	1.00	0.00	0.00	0.19	.852	1.00	1.00
	Within-Person EA	0.82	-0.21	0.10	-2.91	.036	0.99	0.67
	Within-Person NA	1.05	0.05	0.07	0.74	.460	1.20	0.92
	Between-Person EA	0.70	-0.35	0.15	-2.41	.016	0.94	0.53
	Between-Person NA	0.89	-0.12	0.14	-0.87	.382	1.16	0.68
	B.P. NA * W.P. EA	1.27	0.24	0.11	2.17	.030	1.57	1.02

Note. EA = Experiential Avoidance. NA = Negative Affect. B.P. = Between-Persons. W.P. = Within-Persons. All predictor variables are standardized at the respective level (within- or between-person) of the model. The interaction term is based on the between-persons standardized NA value and the within-persons standardized EA value.

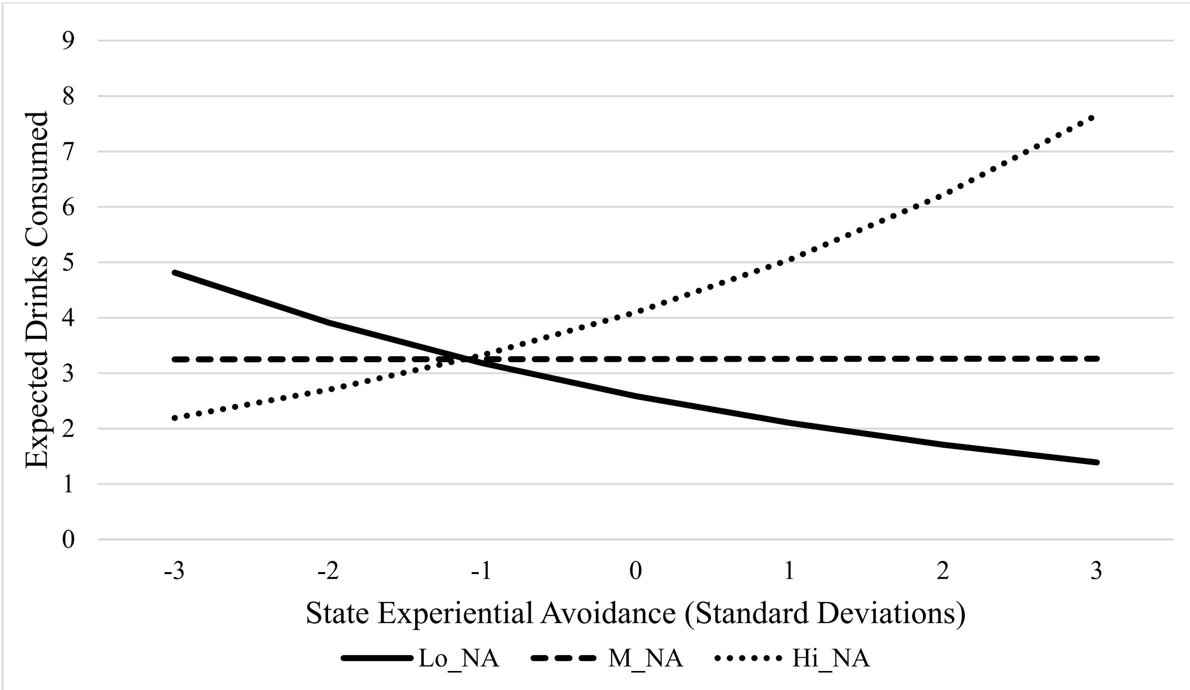

Figure 1. The relation between state experiential avoidance and expected number of drinks consumed alone, at the mean, -1SD, and +1SD of negative affect.

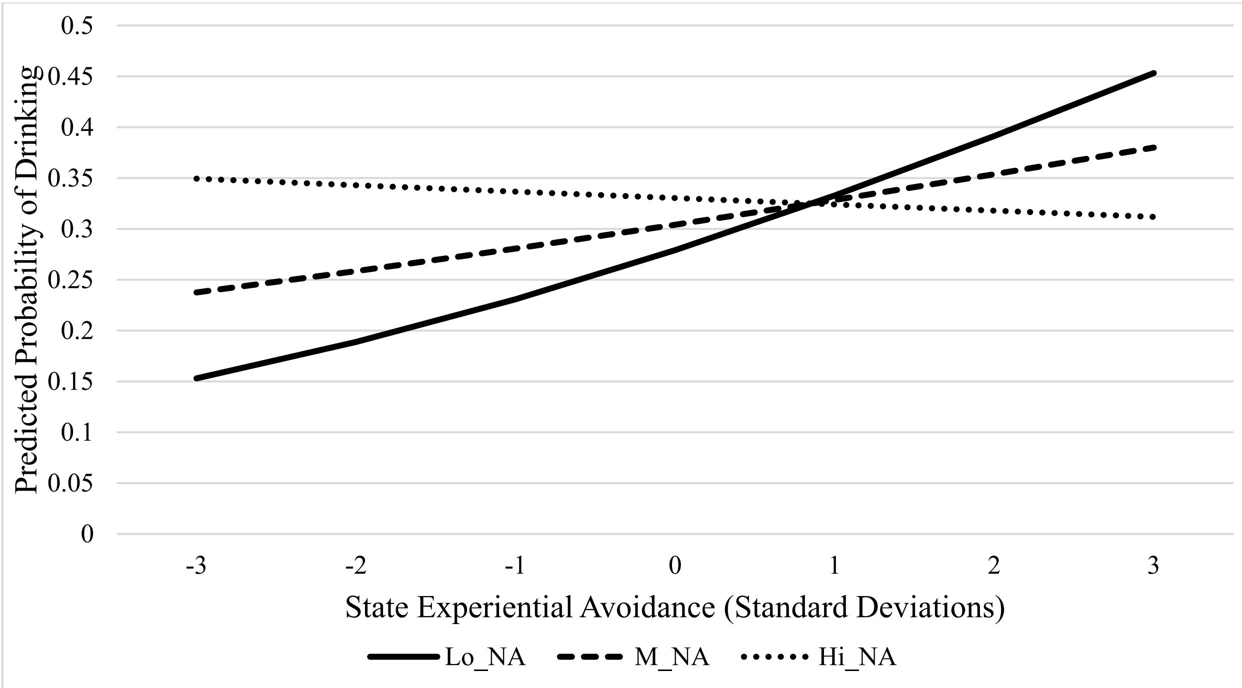

Figure 2. The relation between state experiential avoidance and the predicted probability of drinking alone, at -1SD, +1SD, and the mean of negative affect.