CUE, MOOD, AND PERSONALITY EFFECTS ON ALCOHOL EXPECTANCIES

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INTRODUCTION

• According to Social Learning Theory (SLT, Bandura, 1977, 1986)
  • Drinking is a learned behavior resulting from a complex interaction of individual and environmental stressors
  • Cognitive factors (e.g., alcohol expectancies) play an important role in determining drinking behaviors

• Expectancies vary according to individual and contextual factors
  • Contextual factors: alcohol cues (e.g., Cooney et al., 1987; Dunn & Yniguez, 1999), mood states (e.g., Birch et al., 2004; Hufford, 2001)
  • Personality (e.g., McCarthy et al., 2001; Finn et al., 2005)

• Few studies have examined the effects of cue and mood on alcohol expectancies (e.g., Goldstein et al., 2004; Wall et al., 2000)
  • None have examined interactive influences

• Personality dimensions (e.g., neuroticism) may moderate contextual influences on drinking (Sher et al., 1999)

THE PRESENT STUDY

• Consistent with SLT, two hypotheses were tested:
  (1) Differences in mood and cue result in changes in alcohol related expectancy reaction time (RT)
  (2) Personality, specifically neuroticism, moderates these associations

METHOD: Participants

• Regular drinking college students at a Northeastern U.S. public university
• 140 participants
  • 46% female (n = 64)
  • Average age: 20.2 (SD = 1.6) years old
  • Ethnicity:
    • 77% (n = 108) White
    • 6% (n = 9) Asian
    • 4% (n = 6) Black
    • 4% (n = 6) Hispanic
    • 6% (n = 8) Other

METHOD: Procedure

Participants randomly assigned to either a negative or neutral mood induction (MIP) and to an alcohol or non-alcohol visual cue presentation (CUE), followed by the expectancy reaction time task (ETASK) and self-report measures

	Screen		Experimental Session				
	Phone Screen	Baseline Questionnaires		T2 Questionnaires	T3 Questionnaires		T4 Questionnaires
Demographics		X					
Regular Drinker Status	X						
Mood Manipulation Checks							
Affect Grid		X	M I P	X	C U E	X	E T A S K	X
Personality Assessment							
Big Five Inventory				X			X
Alcohol Involvement							
Alcohol Use							X
YAACQ							X

METHOD: Measures

Variables	Measures	Description/Sample Items
Mood	Affect Grid (Russell et al., 1989)	Single rating of current affective state on two dimensions: arousal vs. sedation, and positive vs. negative
Alcohol Expectancies	-Expectancy RT task -Kushner Expectancy Questionnaire – self-report (Kushner et al., 1994), alpha = .85 - Tension Reduction (9 items) - Social Facilitation (8 items) - Activity Enhancement (9 items)	- Drinking helps me to relax - Drinking makes me feel less shy - Drinking can be exciting
Alcohol Use	Alcohol Use (single item indices)	-Age of onset of regular alcohol use -Past 6-mo. drinking frequency -Past 6-mo. drinking quantity
	Young Adult Alcohol Consequences Questionnaire (YAACQ, Read et al., 2006), alpha=.90	- "I have taken foolish risks when I have been drinking" - "I have passed out from drinking"
Personality	Neuroticism scale of the Big Five Inventory (John & Srivastava, 1999)	"I see myself as someone who…" -Can be tense -Worries a lot

Method: Mood Manipulation

• Two conditions
  (1) Stress – participants given 2 minutes to compose a 10-minute speech that would be videotaped and presented to a panel of "judges" who would be using this speech to assess their intellectual functioning
  (2) Neutral – participants listened to a brief, audio-taped scene description and were asked to rate how well they were able to envision that scene

Method: Cue Exposure
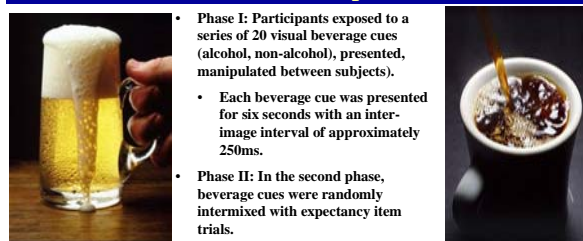
• Phase I: Participants exposed to a series of 20 visual beverage cues (alcohol, non-alcohol), presented, manipulated between subjects).
  • Each beverage cue was presented for six seconds with an inter-image interval of approximately 250ms.
• Phase II: In the second phase, beverage cues were randomly intermixed with expectancy item trials.

Method: Expectancy Task (ETASK)

• Computerized sentence completion task in which participants responded to a series of personality trait items (included to control for general RT) and positive alcohol outcome expectancy items (Tension Reduction, Social Facilitation, Activity Enhancement)
  • Item stems presented for 2 seconds followed by either an expectancy or personality item target word (e.g., "Alcohol helps me…RELAX" or "Usually I…TRUST PEOPLE")

• Participants told to respond as quickly and accurately as possible by pressing one of two response buttons ("yes" or "no")

Data Analytic Approach

▪ Manipulation checks to ensure the effectiveness of the mood and cue manipulations

▪ Bivariate associations between alcohol-related individual differences and ETASK expectancy RT variance were examined using partial correlations that controlled for individual differences in response speed (using response time on personality trait items)

▪ Mood, cue and expectancy type (tension reduction, social facilitation, activity enhancement) effects on ETASK RTs were tested within a mixed model ANCOVA to examine contextual influences on dynamic alcohol expectancy responding
  ▪ Moderation of contextual effects by neuroticism tested within a General Linear Model (GLM)

RESULTS: Bivariate Associations

▪ An expected, significant zero-order correlation observed between ETASK alcohol RTs and personality RTs, r(138)= 0.78, p< .001
  ▪ Subsequent ETASK analyses control for personality trait item RTs

▪ Significant, negative, first-order partial correlation observed for Neuroticism and ETASK RT to all alcohol expectancies, r(139)=-.20, p<.05
  ▪ Association between extraversion and ETASK RT was non-significant

▪ A significant first order partial correlation was observed between ETASK and self-reported positive alcohol outcome expectancies (PAEs), r(137)= -.50, p< .001
  ▪ Participants who endorsed more self-reported expectancies responded faster to ETASK expectancy items
  ▪ Association controlled in subsequent analyses (i.e., cue, mood, neuroticism influences)

▪ Second-order partial correlations for ETASK alcohol expectancy RT and alcohol-related individual differences
  ▪ No significant partial correlations were observed for age of onset of regular alcohol use, past 6-month drinking frequency, past 6-month drinking quantity, or self-reported drinking problems

RESULTS: Contextual Effects

• Significant main effect of Cue type, F(1,134)= 4.00, p= .05, overall ETASK alcohol expectancy RT increased on trials preceded by alcohol cues (M= 1697ms; SE= 24ms) vs. non-alcohol cues (M= 1626ms; SE= 26ms)

• Cue type main effect significantly moderated by Expectancy type and Mood (i.e., an Expectancy type X Mood X Cue interaction; see Figure below), F(2,268)= 4.81, p= .009

• Decomposition of this interaction revealed:
  - Mood X Cue interaction significant for the tension reduction expectancy items, F(1,134)= 7.84, p= .006.
  - magnitude of the Cue effect varied by Mood on Tension Reduction expectancy trials.
  - Mood X Cue interaction not significant for social facilitation or activity enhancement items.

• Simple effects of Cue type tests for all combinations of Mood and Expectancy type indicated that the pattern of Cue type simple effects differed by Mood for Tension Reduction items
  • Simple effect of Cue type observed for TR expectancies in the stress mood condition, F(1,61)= 15.45, p< .001.
    • ETASK expectancy response times increased on trials preceded by alcohol cues (M=1822ms; SE= 45 ms) vs. no-alcohol cues (M= 1550ms; SE= 52ms)
  • Simple effect of Cue type not significant for Tension Reduction items in the neutral mood condition.
  • Simple effects of Cue type not significant for either of the other expectancy type items (social facilitation and activity enhancement) in either stress or neutral mood conditions
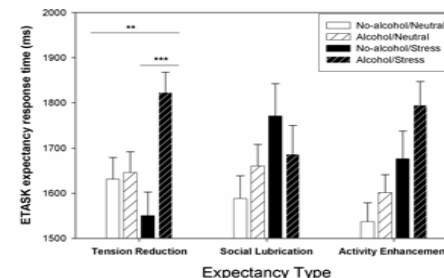
RESULTS: Personality Moderation

▪ Moderation of Mood and Cue effects on ETASK expectancy response times by neuroticism tested within a repeated measures General Linear Model (GLM) analysis.
  ▪ Personality trait item RT and self-reported PAE scores again included as covariates.

▪ Consistent with the earlier reported individual difference analyses, a main effect of neuroticism on overall ETASK alcohol expectancy response time, F(1,129)= 4.32, p= .039
  ▪ Overall alcohol expectancy RT decreased as total neuroticism scores increased

▪ No significant interaction between Neuroticism and above observed Mood or Cue effects.

CONCLUSIONS

This study supports the SLT emphasis on individual, contextual, influences on alcohol expectancies. We observed *slowed* responding to positive alcohol expectancies in the context of alcohol cues. This slowed responding was moderated by (alcohol) Cue type and by (Tension Reduction) Expectancy type, suggesting a specificity of the effects of negative mood and alcohol cues on mood-relevant expectancies. These findings are consistent with mechanisms put forth by information processing models, suggesting that speed of processing may be slowed in circumstances where other salient motivational factors (such as urges or emotions) are present. In addition, individuals higher on neuroticism also showed slower responding to overall alcohol expectancy items. However, neuroticism did not moderate the specific Mood or Cue effects.
These results underscore the importance of mood, contextual, and personality factors as influences on expectancy processes and offer some insight into mechanisms underlying the activation of expectancies. Results also shed light on a unique dimension of expectancies (i.e., RT controlling for self-reported expectancies) and how this dimension is affected by such contextual factors. Interventions aimed at altering expectancies in attempts to decrease heavy drinking may benefit from taking modifying contextual actors into consideration.