# Alcohol expectancies longitudinally predict drinking and the alcohol myopia effects of relief, self-inflation, and excess ☆

Andrew Lac*, Nathaniel Brack

*Department of Psychology, University of Colorado Colorado Springs, 1420 Austin Bluffs Pkwy, Colorado Springs, CO 80918, USA*

## HIGHLIGHTS

- General alcohol expectancy longitudinally predicted alcohol use and all 3 myopic effects.
- Positive expectancy predicted alcohol use, and myopic relief, self-inflation, and excess.
- Negative expectancy predicted only myopic excess but not use or other myopic effects.
- Among the 7 expectancies, 2 predicted relief, 1 predicted self-inflation, and 1 predicted excess.
- Alcohol myopic experiences are a function of self-fulfilling alcohol prophecies and drinking levels.

## ARTICLE INFO

## ABSTRACT

*Introduction:* Alcohol myopia theory posits that alcohol consumption attenuates information processing capacity, and that expectancy beliefs together with intake level are responsible for experiences in myopic effects (relief, self-inflation, and excess).
*Methods:* Adults ($N = 413$) averaging 36.39 ($SD = 13.02$) years of age completed the Comprehensive Effects of Alcohol questionnaire at baseline, followed by alcohol use measures (frequency and quantity) and the Alcohol Myopia Scale one month later. Three structural equation models based on differing construct manifestations of alcohol expectancies served to longitudinally forecast alcohol use and myopia.
*Results:* In Model 1, overall expectancy predicted greater alcohol use and higher levels of all three myopic effects. In Model 2, specifying separate positive and negative expectancy factors, positive but not negative expectancy predicted greater use. Furthermore, positive expectancy and use explained higher myopic relief and higher self-inflation, whereas positive expectancy, negative expectancy, and use explained higher myopic excess. In Model 3, the seven specific expectancy subscales (sociability, tension reduction, liquid courage, sexuality, cognitive and behavioral impairment, risk and aggression, and self-perception) were simultaneously specified as predictors. Tension reduction expectancy, sexuality expectancy, and use contributed to higher myopic relief; sexuality expectancy and use explained higher myopic self-inflation; and risk and aggression expectancy and use accounted for higher myopic excess. Across all three predictive models, the total variance explained ranged from 12 to 19% for alcohol use, 50 to 51% for relief, 29 to 34% for self-inflation, and 32 to 35% for excess.
*Conclusions:* Findings support that the type of alcohol myopia experienced is a concurrent function of self-fulfilling alcohol prophecies and drinking levels. The interpreted measurement manifestation of expectancy yielded different prevention implications.

## 1. Introduction

Alcohol use is a risk factor for 60 different types of diseases and disabilities (World Health Organization, 2014) and responsible for more than double the societal cost of other psychoactive substances (Miller, Levy, Cohen, & Cox, 2006). Alcohol consumption is connected to a wide array of outcomes including positive mood (Fairbairn & Sayette, 2013), stress reduction and relaxation (Jackson, Knight, & Rafferty, 2010; Peele & Brodsky, 2000), drowsiness (Hogewoning et al., 2016), social and interpersonal problems (Read, Beattie, Chamberlain, & Merrill, 2008), sexual risk taking (Shuper, Joharchi, Irving, & Rehm, 2009), regrettable social behaviors

(Dunne & Katz, 2015), fatal driving accidents (Centers for Disease Control and Prevention, 2011), aggression and physical violence (Giancola, Duke, & Ritz, 2011; Maldonado-Molina, Reingle, & Jennings, 2011; Foran & O'Leary, 2008), and suicide (Pompili et al., 2010). The current study combined alcohol expectancy theory and alcohol myopia theory into an integrative framework to understand how alcohol expectancies and use serve as risk factors for myopic consequences.

## 1.1. Alcohol expectancies

Perhaps the earliest research conceptualization of expectancy broadly defined it as the ability to use information acquired at an earlier point in time to guide behavioral responses (Tolman, Hall, & Bretnall, 1932), with the definition subsequently refined to describe stored schemas (mental templates) in memory that help to guide future actions (Bolles, 1972; MacCorquodale & Meehl, 1953). As outcome expectancy is a pivotal component in social learning theory (Bandura, 1977), expectancy frameworks have since been adopted to studying alcohol behaviors (Jones, Corbin, & Fromme, 2001; Kouimtsidis, Stahl, West, & Drummond, 2014). Alcohol expectancy theory posits that people possess different beliefs about the effects of alcohol and that these perceptions prompt drinking decisions (Valdivia & Stewart, 2005). Drinking expectations vary across cultures and individuals (Lee, Atkins, Cronce, Walter, & Leigh, 2015; Shih, Miles, Tucker, Zhou, & D'amico, 2012) and are formed through direct and indirect experiences (Fromme & D'amico, 2000).

The Comprehensive Effects of Alcohol Questionnaire (CEOA) is the most widely administered instrument to assess drinking expectancies (Fromme, Stroot, & Kaplan, 1993). The seven subscales could be classified into positive (sociability, tension reduction, liquid courage, and sexuality) and negative (cognitive and behavioral impairment, risk and aggression, and self-perception) expectancies. The CEOA questionnaire has been applied to investigate associations with alcohol outcomes. After simultaneously controlling for all seven CEOA subscales, higher risk and aggression expectation, higher sexual expectation, and lower self-perception expectation uniquely contributed to drinks per week in a sample of undergraduate students (Ham, Stewart, Norton, & Hope, 2005). Positive expectancy is related to greater drinking, but negative expectancy to less drinking (Anthenien, Lembo, & Neighbors, 2017). Other research supports that positive expectancy explained number of drinks consumed, but both positive and negative expectancy factors explained greater alcohol-related consequences (Dunne, Freedlander, Coleman, & Katz, 2013). Most studies focus on the positive versus negative dimensions in cross-sectional designs, so testing the independent contributions of all seven specific subscales of the CEOA as antecedents of alcohol behaviors is relatively uncommon in the literature.

## 1.2. Alcohol myopia theory

Alcohol myopia theory (Steele & Josephs, 1990) postulates that alcohol possesses the psychoactive ability to compromise controlled attentional processing. The impairment of attentional and perceptual resources due to intoxication is responsible for three classes of myopia— *relief*, *self-inflation*, and *excess*—that translate into social-behavioral consequences ranging from relaxation to aggression (Giancola, Josephs, Parrott, & Duke, 2010; Steele & Josephs, 1990). Myopic relief represents the psychological and emotional freedom from distant problems after consumption. The myopic relief concept originated from the seminal ideas of the tension reduction hypothesis (Conger, 1956). Relief occurs due to focusing on the salient aspects of the present moment and temporary distraction from ruminations and worries after consumption (Fairbairn & Sayette, 2013; Steele & Josephs, 1990).

Myopic self-inflation occurs after drinking when feelings of self-doubt dissipate due to the attentional focus on desirable personal traits (while ignoring personal flaws) that could manifest as greater self-confidence. In an experiment demonstrating myopic self-inflation

(Banaji & Steele, 1989), recipients of alcohol increased positive self-evaluations only for traits originally deemed personally important, but alcohol did not improve self-appraisals unless paired with preexisting positive thoughts about the self. Myopic excess arises if attention is on provoking and vexing stimuli that spur impulses, urges, and aggression at the expense of inhibition of these unacceptable responses during drinking occasions. Participants administered alcohol and forced to pay attention to the pain from electric shocks exhibited greater aggression than both a non-alcohol group focused on pain and another alcohol group distracted by a task (Zeichner, Pihl, Niaura, & Zacchia, 1982).

The Alcohol Myopia Scale (Lac & Berger, 2013) was developed to conceptualize and capture all three myopic effects in a measurement instrument. Alcohol use was found to correlate with greater tendency to encounter each of the three myopic effects in the scale validation study.

## 1.3. Current study

A major tenet of alcohol myopia theory (Steele & Josephs, 1990) is that internal cues such as alcohol expectancies contextually guide the type of experiences and behaviors manifested after intake. Specifically, person-to-person differences in level of alcohol consumption are not sufficient to account for variations in myopic effects, as individuals consuming the same amount might exhibit disparate consequences (Giancola et al., 2010; Steele & Josephs, 1990). Accordingly, mental schemas about alcohol expectations serve as self-fulfilling prophecies that make people more susceptible to certain types of myopia upon drinking. The "dual-process model of the alcohol-behavior link" (Moss & Albery, 2009) attempts to connect expectancy theory and myopia theory and postulates that alcohol behaviors are a combined function of the preconsumption and consumption stages. This paradigm proposes that alcohol usage (consumption stage) impairs conscious cognitive processing capacity, so that the "habitual, automatic, and implicit" schemas stored in memory (preconsumption stage) trigger and guide behaviors upon consumption (Moss & Albery, 2009). In other words, due to alcohol's ability to compromise effortful and controlled mental processes, expectations about alcohol prime the types of behavioral consequences manifested.

The present study tested mediational processes from alcohol expectancies to drinking to alcohol myopia, and builds upon previous research in several ways. First, the investigation simultaneously controlled for the unique statistical contributions of all seven specific alcohol expectancies in predicting alcohol use and all three myopia effects. Previous studies have neglected to comprehensively integrate all the main constructs from both theoretical frameworks into the same predictive model. For instance, prior alcohol expectancy investigations tend to test positive or negative expectancy only (Merrill, Lopez-Vergara, Barnett, & Jackson, 2016), the two factors of positive versus negative expectancy (Montes et al., 2017), or only one or two specific expectancy subscales (e.g., liquid courage) while ignoring the other specific expectancy dimensions (Gilles, Turk, & Fresco, 2006; Wells et al., 2014). A possible rationale for the scarcity of research that simultaneously controls for all seven CEOA expectancy subscales is that each specific dimension is less likely to emerge as significant due to the competition in explicating variance in alcohol behaviors (Geisner et al., 2017).

Second, the investigation pursued a longitudinal design (Crano, Brewer, & Lac, 2015; Lac, 2016) to test alcohol expectancies as risk antecedents of alcohol use and myopia. Most research focusing on alcohol expectancies have implemented cross-sectional designs. Furthermore, this was the first study to test the alcohol myopia scale longitudinally. A third innovation was the estimation and comparison of three theoretically competing predictive models differing in the construct embodiment of alcohol expectancy. The computation of the expectancy construct based on various measurement approaches identified in the literature should furnish insights regarding each model's predictive validity on alcohol use and myopia.