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Shame is bad and guilt is good: An examination of the impaired control over drinking pathway to alcohol use and related problems

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Abstract

Tension Reduction Theory (Kushner et al., 1994) suggests alcohol is used as a means to alleviate negative affect (NA) such as shame and guilt. Shame is an internalized response in which blame is placed on the self, while guilt is not internalized and the blame is placed on the situation (Dearing et al., 2005). This study aims to investigate relationships of shame and guilt to alcohol use and problems through the mechanisms of multiple facets of impulsivity (i.e. UPPS) and impaired control over drinking (IC), which reflect behavioral control processes. The sample consisted of 419 college students (53% female). We examined direct and indirect relationships of shame and guilt on alcohol use and related problems through facets of impulsivity and IC. Shame and guilt were found to diverge (Woien et al., 2003). We found that those higher on shame-proneness used more alcohol and experienced more alcohol-related problems through increased negative urgency and IC. Conversely, guilt-prone individuals used less alcohol and experienced fewer alcohol-related problems through less negative urgency and IC. Our findings suggest that guilt is an adaptive form of negative affect, particularly when it comes to alcohol-related outcomes.

Graphical abstract

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Keywords

Impaired Control Over Drinking; UPPS; Shame; Guilt; Alcohol Use

Introduction

“Unlike guilt which is the feeling of doing something wrong, shame is the feeling of being something wrong”

– Marilyn J Sorenson

Shame and guilt are negative emotional experiences resulting from moral transgressions or personal shortcomings (Woien et al., 2003 p.313). These constructs are often blurred in the literature and used interchangeably in life (Treeby & Bruno, 2012), yet they are distinct constructs (Dearing et al., 2005). Shame denotes an internalized negative affect (NA) toward oneself after an aversive event, while guilt indicates NA toward specific events and is not internalized (Dearing et al., 2005). This study aims to evaluate shame and guilt and how these distinct forms of NA influence drinking outcomes through behavioral control mechanisms.

Prosocial guilt stems from the fear of losing meaningful relationships (Carni et al., 2013), which serves as a motivator for an individual to confess, apologize, and repair the damage (Lindsay-Hartz, 1984). Individuals higher in guilt proneness are more likely to behave generously and cooperatively (Ketelaar & Au, 2003). Guilt has been found to be unrelated to overall psychological adjustment (Woien et al., 2003), motives for drinking (Treeby & Bruno, 2012), and is inversely linked to alcohol-problems (Dearing et al., 2005).

In contrast, shame has been associated with inferior feelings, powerlessness, and self-consciousness with the desire to conceal one's deficiencies (Tangney et al., 1996). Shame has been found to be highly predictive of poorer psychological adjustment, tension reduction motives for drinking, and alcohol-related problems (Treeby & Bruno, 2012; Woien et al., 2003). Tension Reduction Theory suggests individuals who find relief from NA by drinking alcohol are at a greater risk for negative alcohol consequences (Kushner et al., 1994).

Woien et al. (2003) found shame and guilt to be unrelated to affect-free impulsiveness measured with the Eysenck I.7. Nevertheless, NA may influence some individuals to act impulsively. Using ecological momentary data, Depp et al., (2016) longitudinally

demonstrated that lagged NA (i.e., momentary changes in NA within an individual) predicted impulsivity, controlling for lagged impulsivity over time. One purpose of the present investigation is to explore the indirect links between shame and guilt and drinking outcomes through facets of impulsivity.

Whiteside and Lynam (2001) identified four facets of impulsivity: premeditation, perseverance, sensation seeking (SS), and negative urgency (NU). Premeditation denotes the ability to methodically plan and think about how to best respond before acting. Perseverance reflects the ability to see a task through to the end. SS reflects “the tendency to seek novelty, excitement and adventure” (Whiteside & Lynam, 2001 p.677). In contrast, NU reflects acting rashly or impulsively in response to NA and is linked to depression and alcohol-problems (Karyadi & King, 2011). Presumably, negative emotions are likely to reduce behavioral control capabilities.

Impaired control over drinking (IC) reflects a loss of behavioral or self-control specific to the drinking situation (Heather et al., 1993; Patock-Peckham et al. 2001; 2011a). This breakdown of intentions to limit alcohol consumption (Heather et al., 1993, p. 701) includes the inability to control consumption after drinking has begun (Leeman et al., 2014). IC occurs early in the development of alcohol dependence (Leeman et al., 2009), with adults identifying it as the first dependence symptom to occur (Langenbucher & Chung, 1995). Historically, IC is an important aspect of addiction (Leeman et al., 2012) and was linked to greater general impulsivity, measured by the Eysenck I.7 (i.e. affect free impulsivity), in both men and women (Patock-Peckham et al., 2011a).

IC over drinking has been positively linked to NU, cross-sectionally, but was unrelated to premeditation, perseverance, or SS (Patock-Peckham et al., 2011b). However, these pathways were still included because they may still have significant relationships with guilt and shame. Shame has been associated with less generalized self-regulation, while guilt has been associated with better general self-regulation skills (Woien et al., 2003). As positive behavioral control (i.e. self-regulation) is on the opposite end of the personal control continuum from rash action (i.e. NU), we anticipated that shame would be linked directly to NU. Park et al. (2004) found that those who experienced increased affect due to a stressful event drank more on the day of the event. Thus, we expect shame to be linked indirectly to IC through NU in both the alcohol use and problems pathways. We presumed that guilt would be indirectly protective of alcohol use through an indirect relationship with IC and NU.

Park et al. (1990) also discussed that Catholic guilt allows people to persist in life despite hardships. This internal motivation to move forward during times of high NA led us to predict that guilt would be indirectly linked to less IC through higher levels of perseverance on both the alcohol use and problems pathways. Conversely, shame is expected to be indirectly linked to more IC through less perseverance along the alcohol use and problems pathways.

Premeditation or planned acts are considered to be part of greater behavioral control (Patock-Peckham et al., 2001) and thus should be related to less IC. Woien et al. (2003)

found that higher levels of guilt were related to higher need for cognition (NFC), which reflects a tendency to think through alternatives thoroughly before decision making (Cohen et al., 1955). As greater NFC is akin to the planning aspect of self-regulation, we hypothesized that guilt would be indirectly associated to less alcohol use through the mechanism of premeditation (i.e. the ability to think and plan) and less IC. In stark contrast, higher levels of shame were related to less NFC (Woien et al., 2003). Therefore, we hypothesized that shame would be both directly associated with less premeditation and indirectly linked to increased alcohol use through more IC.

While negative urgency (NU) reflects rash action under NA, sensation seeking (SS) reflects a desire for novel and adventurous experiences. SS has consistently been related to greater alcohol use both cross-sectionally and over time (see Hittner & Swickert, 2006). However, SS is also commonly related to more positive outcomes such as academic achievement and work performance (Jackson et al., 2009; Jackson, 2011). Woien et al. (2003) found that both shame and guilt have a negative relationship to SS. However, SS has not been related to IC (Patock-Peckham et al., 2011b). Thus, we anticipated that both shame and guilt would be directly linked to less SS and indirectly linked to less alcohol use and problems but this would not be mediated by IC.

This study seeks to identify how behavioral control processes mediate the relationship between NA (i.e. shame and guilt) and drinking outcomes. We predicted that guilt would be indirectly linked to less alcohol use and problems through lower levels of NU and in turn lower levels of IC. Guilt is expected to be related to less alcohol use and problems, mediated by more perseverance and less IC. Guilt is presumed to be linked to more premeditation and in turn less IC and less alcohol use. Conversely, we hypothesized that shame is related to more alcohol use and problems through more NU and more IC. Shame should be indirectly linked to more alcohol use through less premeditation or perseverance and more IC. Finally, both shame and guilt are expected to be linked to less alcohol use and problems through less SS.

Method

Participants

Participants included 419 (196 women, 223 men) individuals from a large university who reported being drinkers of alcoholic beverages. All consented to participation in this study. The sample was composed of 47% men, with a mean age of 20.19 ($SD = 3.023$). Participants were 58.2% Caucasian, 17.3% Hispanic, 11.1% Asian, 8.8% African American, 1.1% Native American, and 3.5% “other” race.

Measures

Test of Self-Conscious Affect—This measure was used to assess shame-proneness ($\alpha = .79$) and guilt-proneness ($\alpha = .77$) using 16 moral dilemmas (Tangney et al., 2000). For each dilemma, participants are shown four different possible responses (shameful, guilty, and 2 other) and asked to rate how likely they would respond in that manner. One of the four

responses represented a guilt-prone response or a shame-prone response. Response options range from 1 = *not likely* to 5 = *very likely*.

UPPS Impulsive Behavioral Scale—The UPPS Impulsive Behavioral Scale (Whiteside and Lynam, 2001) consists of 45-items, which measure the constructs of premeditation, NU, SS, and perseverance. Premeditation consists of 11 items ($\alpha = .89$) and denotes a rational approach to life (i.e., “I usually think carefully before doing anything.”) Negative Urgency (NU; $\alpha = .89$) consists of 12 items and denotes an inability to control one's impulses (i.e., “When I feel bad, I will often do things I later reject in order to make myself feel better now.”) Sensation Seeking (SS; $\alpha = .90$) consists of 12 items and denotes novelty seeking (i.e., “I'll try anything once.”) Perseverance ($\alpha = .85$) consists of 10 items and denotes a willingness to follow through with tasks (i.e., “Once I start a project, I almost always finish it.”).

Impaired Control Measure—This scale reflects 10 items ($\alpha = .81$) with higher scores reflecting a lack of perceived control over drinking (i.e., an inability to stop drinking at will; Heather et al., 1993). A sample item included, “Even if I intended having only one or two drinks, I would end up having many more.” Responses for the Impaired Control Scale were 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, 5 = *strongly agree*.

Alcohol Use (Quantity/Frequency)—The quantity and frequency items were combined into a single q/f scale by converting frequency levels into equivalent occasions per month which ranged from 1 = *0.5 times per month* to 7 = *28 times per month*, and the quantity levels into equivalent grams of alcohol which ranged from 1 = *10 g a month* to 5 = *70 g a month*.

Participants rated their average monthly q/f over the last year with a mean of 3 or 4 drinks consumed once at least once a month. These values were then multiplied, and the distribution of scores were transformed through a log10 transformation (Wood et al., 1992).

Alcohol-Related Problems—These 11 items were from the Problems with Alcohol Use Measure ($\alpha = .88$) indicating lifetime alcohol abuse or dependence (Rhea et al., 1993). A sample item included, “Felt you drank too much, possible damaging your mental and/or physical health.” Responses were from 0 = *never* to 3 = *many times*.

Statistical Approach

Using Mplus 7.4 (Muthén & Muthén, 1998-2016), a structural equation model was evaluated with chi-square statistics, RMSEA (Browne & Cudeck, 1993; Hu & Bentler, 1998), and CFI (Bentler, 1990). As our overall structural invariance test did not exceed the critical value at $p < .05$ when all paths were constrained to equality, it suggested that men and women do not need to be modeled separately. Mediation effects were examined utilizing the parametric bootstrapped ($k = 20,000$) 90-99% asymmetric confidence interval technique for the estimates of the indirect effects (i.e. zero is not found in the interval of a mediated effect; Hancock & Liu, 2012; MacKinnon, 2008).

Results

Overall Model Fit

Descriptive statistics can be found on Table 1. All hypothesized paths were modeled in Figure 1 and significant paths were modeled in Figure 2. The model yielded a χ^2 (4 df) = 1.507, $p = .8254$; RMSEA = 0.00, 90% CI [0.00, .044]; CFI = 1.00.¹

Mediated Effects

Impaired Control Over Drinking—Higher levels of guilt were indirectly linked to less IC through less NU (mediated effect = -.003; 95% CI [-.005, -.001]). Higher levels of shame were indirectly linked to more IC through more NU (mediated effect = .004; 99% CI [.001, .008]). Higher levels of guilt were marginally indirectly linked to less IC through more perseverance (mediate effect = -.003; 90% CI [-.006, -.0003]).

Alcohol Use—Higher levels of guilt were indirectly linked to less alcohol use through increased premeditation (mediated effect = -.004; 99% CI [-.008, -.001]). Moreover, higher levels of guilt were indirectly linked to less alcohol use through less IC (mediated effect = -.009; 99% CI [-.015, -.004]). Higher levels of shame were indirectly linked to less alcohol use through more premeditation (mediated effect = -.002; 90% CI [-.003, -.001]). Additionally, higher levels of shame were indirectly linked to less alcohol use through less SS (mediated effect = -.002; 90% CI [-.003, -.001]).

Alcohol-Related Problems—Higher levels of guilt were indirectly linked to less alcohol-problems through less NU (mediated effect = -.002; 95% CI [-.004, -.001]). In addition, increased levels of guilt were indirectly linked to less alcohol-problems through less IC (mediated effect = -.008; 99% CI [-.014, -.004]). Higher levels of shame were indirectly linked to less alcohol-problems through less SS (mediated effect = -.001; 90% CI [-.002, -.001]). Conversely, higher levels of shame were indirectly linked to more alcohol-problems through more NU (mediated effect = .003; 99% CI [.001, .006]).

Key three-path mediated effects

Alcohol Use—Higher levels of guilt were indirectly linked to less alcohol use through less NU and less IC (mediated effect = -.001; 90% CI [-.002, -.0004]). Conversely, higher levels of shame were indirectly linked to increased alcohol use through more NU and more IC (mediated effect = .002; 95% CI [.001, .003]).

Alcohol-Related Problems—Higher levels of guilt were indirectly linked to less alcohol-problems through less NU and less IC (mediated effect = -.001; 90% CI [-.002, -.0004]). In contrast, higher levels of shame were indirectly linked to more alcohol-problems through more NU and more IC (mediated effect = .002; 95% CI [.001, .003]). Higher levels of guilt were marginally indirectly linked to less alcohol-problems through more perseverance and less IC (mediated effect = -.001; 90% CI [-.002, -.0001]).

¹It should be noted we also fit this model with gender as a covariate along with all exogenous variables. When we included gender as a covariate the model did not fit the data as well χ^2 (6 df) = 20.333, $p = .002$; RMSEA = 0.08, 90% CI [0.04, 0.11]; CFI = 0.98 and major mediated effects were not changed, therefore we left gender out of the model.

Discussion

Our findings are consistent with the Tension Reduction Theory, which posits that alcohol is consumed as a form of relief from NA such as shame after adverse events (Kushner et al., 1994). These new findings build on the previous positive relationships found between shame and alcohol use (Treeby & Bruno, 2012; Woien et al., 2003) by showing clear pathways to alcohol use and problems through shame, guilt, and IC. Simons et al. (2005) found that NA was linked to more alcohol-problems through the mechanism of affect free impulsivity. In the present study, we add to the extant literature by showing that shame was significantly related to both increased alcohol use and problems through more NU and more IC as predicted. This demonstrates how when feeling NA, individuals may lose control of their drinking most likely through the mechanism of NU (i.e. rash action). This offers insight to relationships previously identifying behavioral control issues in those with high levels of shame (Woien et al., 2003).

Our findings suggest that guilt-prone individuals do not appear to be using alcohol to relieve their NA which is inconsistent with the Tension Reduction Theory. Our current findings suggest guilt may be protective of alcohol-problems through less NU and less IC. Our findings are not fully consistent with findings that guilt is unrelated to affect free impulsivity (Woien et al., 2003). The present study used a measure of affect laden impulsivity, the UPPS (i.e., When I feel bad, I will often do things I later regret; Whiteside & Lynam, 2001) where Woien et al. (2003) used a measure of affect-free impulsivity (i.e., Do you often do things on the spur of the moment?; Eysenck, et al. 1985). Previously, NA from daily life stressors has been linked to increased alcohol use in congruence with these findings (Park et al., 2004). This finding may be due to relationships between guilt and greater behavioral control (Woien et al., 2003). Guilt, while still NA may not lead individuals to endorse NU because they are engaging in greater cognitive control and thus not likely to act rashly.

Following adverse events, those experiencing guilt may engage in alternative, healthier coping mechanisms than alcohol use. The self-regulatory aspects related to guilt may not allow for impulsive action even though individuals may be experiencing NA (Treeby & Bruno, 2012; Woien et al., 2003). Greater NFC (i.e. the tendency to think about alternatives prior to acting; Cohen et al., 1955) is positively related to guilt (Woien et al., 2003). Consistent with this literature, guilt was linked to less alcohol use through more premeditation, or the motivation to think deeply before deciding, as predicted. Park et al. (1990) concluded individuals using religious coping via guilt were protected from experiencing alcohol-related outcomes by adaptively using their NA. Consistent with this hypothesis, guilt was protective of alcohol use and IC through greater perseverance at a trend level. Perseverance may be particularly relevant to those experiencing guilt because of their motivation to reconcile their behavior. Guilt does not allow an individual to enjoy the benefits of a situation if granted at another's expense, which influences individuals to create balance within their relationships (Baumeister et al., 1994). The perspective of guilt as a pro-social behavior (Carni et al., 2013) combined with our results indicate that guilt could be a unique case of adaptive NA.

Woien et al. (2003) found less NFC to be related to higher levels of shame. Conceivably, the cognitive processes fundamental to planning future action, or premeditation, decrease as shame levels increase. Shame produced an opposite relationship than expected with premeditation, where shame was linked to less alcohol use through more premeditation. Further research would be needed to identify factors which may influence the positive associations between shame and premeditation.

Partially consistent with Woien et al. (2003) shame was found to have a negative, direct relationship to SS, yet, guilt was unrelated to SS. Further, shame was related to less alcohol use and problems through less SS. This relationship was not mediated by IC as expected. However, it is important to note that one prior study has demonstrated a correlation between IC and SS ($r = .24$; Leeman, et al. 2009). Leeman and colleagues (2009) were using the Zuckerman Sensation Seeking Scale-V (1994), which varies greatly from the UPPS sensation seeking. Items from the Zuckerman included 'I enjoy the company of real "swingers"' and 'I like "wild" disinhibited parties'. These items appear to be capturing novelty seeking in the context of sex or parties, while the UPPS has a more diverse range of experiences. Further research is necessary to determine what type of sensations may be sought by those with IC issues. This relationship demonstrates that SS is related to greater alcohol use; however, the overall protective effect of shame may demonstrate that shame-prone individuals will not seek new experiences or social activities.

The present study contributes to the existing literature. Yet, this present study is based on a cross-sectional study and it will be necessary to continue studying these relationships over time specifically in an older age group than the emerging adults used in this current sample. Additionally, shame may have a reciprocal relationship with alcohol use such as the spiral effect where shame leads to increased alcohol use but alcohol use also leads to increased shame (Dearing et al., 2005). Moreover, we only studied shame and guilt as distinct observed constructs which did not account for any interactions between shame and guilt. Thus, our findings only speak to the pattern of relationships as currently drawn. Finally, both shame and guilt were measured as trait-like constructs and these relationships may differ under state, "in-the-moment", NA (Treeby & Bruno, 2012).

Despite these limitations, our findings are novel because they clearly identify new pathways from guilt and shame to alcohol use and problems through mechanisms such as IC. Shame and guilt's relationship to IC introduces a behavioral distinction between these types of NA. Shame has been related to the inability to control both physiological and emotional reactions to events (Dearing et al., 2005). Our findings were consistent with this theme such that shame-prone individuals had less control over their drinking behavior, making them at risk for more alcohol-problems. Guilt is related to less IC over drinking in this study. Taken together, this suggests that guilt and shame diverge in the behavioral responses to NA as Woien et al. (2003) hypothesized. Guilt may be protective of alcohol use because of the greater behavioral self-control in response to this unique NA. Guilty individuals may not use alcohol to alleviate their NA because they have a greater desire to resolve their issues with a behavioral change (Baumeister et al., 1994; Tangney, 1992). Thus, guilt may be a special functional form of negative affect.

From a prevention standpoint, our study implies that accountability for one's negative actions may be an important component of both the prevention and recovery of alcohol use disorders (AUDs). Individuals who experience guilt may make amends with the injured party rather than use alcohol to cope with their negative feelings towards events suggesting individuals with AUDs could benefit from learning skills that would help them more effectively apologize when things go wrong.

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Highlights

- Shame and guilt appear to be distinct negative emotions
- Guilt is an adaptive negative emotion, while Shame is not.
- Guilt and shame are uniquely and distinctly associated with alcohol use
- Shame is associated with more urgency and more impaired control over drinking
- Guilt is associated with less urgency and less impaired control over drinking.

Figure 1.
Conceptual model displays all hypothesized pathways in the structural equation model.

Figure 2.
Fit model displaying all significant direct pathways with standardized beta coefficient estimates. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 1

Means, standard deviations, and correlations among all variables.

M	SD	Measure	1	2	3	4	5	6	7	8	9
45.635	(10.071)	1. Shame	1.00								
62.514	(7.901)	2. Guilt	0.40	***							
28.753	(7.922)	3. Premeditation	0.21	***	1.00						
20.664	(9.805)	4. Negative Urgency	0.22	***	-0.32	***	1.00				
32.183	(10.071)	5. Sensation Seeking	-0.16	**	-0.26	***	0.11	*	1.00		
27.726	(6.775)	6. Perseverance	-0.09	0.22	***	0.29	***	-0.34	***	1.00	
1.793	(0.655)	7. Impaired Control	-0.01	-0.27	***	-0.22	***	0.29	***	0.13	**
1.668	(0.696)	8. Alcohol Use	-0.11	*	-0.21	***	-0.30	***	0.10	*	0.26
0.694	(0.532)	9. Alcohol-Related Problems	0.13	**	-0.18	***	-0.21	***	0.41	***	0.22
											0.25
											**
											0.45

											1.00

											0.41

											1.00

n=419; The correlation is significant at

* p < .05;

** p < .01;

*** p < .001.