Frequent alcohol use is associated with impairments in an individual’s health and with associated negative outcomes. Impairments include neurocognitive deficits, neurodegeneration, impaired functional brain activity, and decreased cognitive performance (Zeigler et al., 2005). Negative outcomes include altered sleep schedules, poor academic performance (Singleton & Wolfson, 2009), and increased injury rates (Jackson et al., 2005). Young adults attending college and university often partake in greater experimentation and alcohol use (Karam et al., 2007). O’Malley and Johnston (2002) found that approximately 40% of American college students were heavy drinkers (i.e., had 5 or more consecutive drinks in the past 2 weeks), and had increased alcohol use when compared to similar-aged young adults not attending college. It is therefore important to examine individual differences in psychological characteristics predisposing or preceding alcohol use in college students to inform prevention and treatment efforts and reduce overall harms. One factor that may be important and overlooked in the alcohol literature is materialism.

The self-determination theory posited by Deci and Ryan (1985) suggests that individuals have three fundamental psychological needs: competence, autonomy, and relatedness to others. Based on this theory, Kasser and Ryan (1996)
Materialism and Drinking Motives | Malik, Toombs, Mushquash, McGrath, and Mushquash

distinguished intrinsic life goals such as meaningful relationships, community contribution, and personal growth from extrinsic life goals such as wealth, fame, and image. Pursuing intrinsic goals is associated with increased life satisfaction as these goals are thought to fulfill the three fundamental psychological needs (Deci & Ryan, 1985; Kasser & Ryan, 1996). Pursuing extrinsic goals is associated with decreased life satisfaction as these goals fail to fulfill an individual’s basic psychological needs (Kasser & Ryan, 1996). Stemming from this theory, materialism has been conceptualized as a value one holds that prioritizes status through the acquisition of money and possessions (Dittmar et al., 2014). An individual’s orientation to extrinsic rather than intrinsic goals is typically used to assess levels of materialism (Kasser & Ryan, 1996).

Ample evidence has suggested that greater levels of materialism are associated with reduced psychological well-being (Dittmar et al., 2014). For example, emphases on materialistic goals are associated with increased anxiety and depression, reduced life satisfaction, and psychiatric disorders (Burroughs & Rindfleisch, 2002; Kasser & Ryan, 1993; Ryan et al., 1999; Shrum et al., 2011; Sirgy et al., 2013). There are multiple explanations for the association between materialism and reduced well-being. Some researchers have suggested the distress occurs because fundamental psychological needs are not fulfilled, even when extrinsic goals (e.g., financial success) are attained (Kasser, 2002; Williams et al., 2000). Findings linking materialism to reduced well-being have been replicated in a variety of populations and settings including general college students, business students, adults, and children (Burroughs & Rindfleisch, 2002; Christopher et al., 2007; Kasser, 2005; Kasser & Ahuvia, 2002). These findings have also been replicated in Russia (Ryan et al., 1999), South Korea (Kim et al., 2003), and Germany (Schmuck et al., 2000).

In addition to the effects of materialism on psychological well-being, a growing body of research has shown that higher rates are associated with an increase in risky behaviors such as school truancy (Kasser & Ryan 1993), violence (Kasser, 2005), early sexual intercourse (Williams et al., 2000), and alcohol use (Auerbach et al., 2009; Vansteenkiste et al., 2006). For example, cross-sectional studies conducted in the United States and Belgium with individuals ranging from 14–21 years old found materialism was associated with increased alcohol, cigarette, and marijuana use (Kasser, 2005; Vansteenkiste et al., 2006; Williams et al., 2000). In addition, a 6-month longitudinal study of Chinese youth found that greater levels of materialism was associated with more frequent risky behaviors including alcohol use, and that higher levels of negative events (e.g., academic problems and interpersonal conflicts) mediated or explained the relationship (Auerbach et al., 2009).

Kasser (2002) proposed a self-medication model derived from self-determination theory to explain this relationship. He argued that, when people pursue extrinsic goals, they spend less time pursuing intrinsic goals and have more experiences that obstruct their fundamental psychological needs, which results in lower well-being (Kasser, 2002). Faced with decreased well-being and increased negative states, individuals pursuing materialistic goals may seek relief (e.g., via drugs or alcohol; Kasser, 2002; Kasser et al., 2014; Vansteenkiste et al., 2006).

When understanding the research linking materialism with increased alcohol use and the risks associated with frequent alcohol consumption in students, it is important to understand the broader relationship between materialism, personality traits, and motives (or reasons for use) that place an individual at risk for increased alcohol use and related problems (Kasser & Ryan, 2001; Vansteenkiste et al., 2006). Personality traits represent stable characteristics in how individuals think, feel, and behave (Roberts et al., 2008). Many traits have been studied to better understand the reasons people drink along with the rates and consequences of their use. For example, anxiety sensitivity, hopelessness, sensation seeking, and impulsivity are risky personality traits measured by the Substance Use Risk Profile Scale (Woicik et al., 2009). The first three traits are associated with using alcohol to cope with negative emotions, whereas sensation seeking is associated with drinking for enhancement purposes (Comeau et al., 2001; Stewart & Kushner, 2001; Woicik et al., 2009). In terms of rates and consequences of use, anxiety sensitivity and hopelessness are associated with alcohol-related problems (e.g., interpersonal conflicts, inability to control alcohol use; Stewart et al., 1999; Woicik et al., 2009). Sensation seeking is associated with greater alcohol use, and impulsivity is associated with the use of multiple substances and with alcohol-related problems (Woicik et al., 2009).

Researchers have also examined motives that an individual holds prior to consuming alcohol. Certain motives are considered risky in that they predict increased use and related problems. In particular, using alcohol for enhancement or
coping reasons is associated with consuming more alcohol and experiencing more problems related to alcohol use (Cooper et al., 1995; Grant et al., 2007). It is important to note that the findings pertaining to the link between drinking motives, alcohol use, and related problems has been inconsistent, particularly when daily process methods are used to assess intraindividual variability. For example, Littlefield and colleagues (2012) did not find a relationship between coping motives and increased alcohol consumption, which contradicts findings presented above. Additionally, Mohr and colleagues (2013) found that individuals who drank alone and when in a negative mood did not show associated increases in alcohol-related problems and coping motives. Thus, the relationship between drinking motives and alcohol use may be affected by the method of assessment and an individual’s social and emotional context.

Despite the identified link between materialism and alcohol use, its relationship with motivational and dispositional predictors of alcohol use has received minimal attention to date. More importantly, no study to date has assessed the relationship between materialism and drinking motives. Considering the negative outcomes associated with greater levels of materialism (Auerbach et al., 2009; Dittmar et al., 2014), it is important that research continue to assess the potential consequences of prioritizing materialistic values. Thus, more research is needed to better understand the link between materialism, drinking motives, and personality traits.

To address the gaps in the literature, a short-term longitudinal study examining the associations between materialism, drinking motives, and risky personality traits was conducted. A short-term longitudinal design helps establish temporal precedence and the stability of the measured variables. This design also reduces the likelihood of neglecting meaningful short-term relationships, which may occur in a long-term longitudinal design.

The objective of the present study was to test whether materialism would predict risky drinking motives (specifically enhancement, coping with anxiety, and coping with depression) over and above the influence of risky personality traits. In particular, we tested whether materialism contributed to (a) coping with depression drinking motive after controlling for hopelessness, (b) coping with anxiety drinking motive after controlling for anxiety sensitivity, and (c) enhancement drinking motive after controlling for sensation seeking. As a result of the negative states, or absence of positive states, associated with the pursuit of materialistic goals, an individual may be motivated to consume alcohol to either enhance positive affect or remove negative affect (Kasser, 2002; Vansteenkiste et al., 2006). Thus, we hypothesized that materialism (at baseline) would predict the enhancement, coping with anxiety, and coping with depression drinking motives (at follow-up). Controlling for known personality predictors when testing this hypothesis provides a more stringent test for the role for materialism.

Method

Participants
A total of 410 undergraduate students were recruited from two Canadian universities. Out of 410 participants, only those who had consumed at least one drink in the past year were included in the analyses (n = 317). Participants from each university did not significantly differ on demographic variables or on the measures used in the present study. The average age of participants was 20 years old (SD = 4.7). Most participants were women (75.8%) and European American (85.8%). More than half (65.8%) were enrolled in their first year of university.

Measures

Aspirations Index
The Aspirations Index (Kasser & Ryan, 1993, 1996) is a 14-item self-report questionnaire assessing materialism via the level of importance an individual places on extrinsic motives in comparison to intrinsic motives. Items assessing extrinsic motives form three subscales: 4 items for Financial Success (wealth; “You will have a lot of expensive possessions”), 5 items for Social Recognition (fame; “You will have a job with high social status”), and 5 items for Attractive Appearance (image; “Your image will be one others find appealing”). Participants indicate how important each item is on a scale from 1 (not at all) to 5 (very). The average of the item raw scores for each subscale were calculated and then summed to create an overall materialism score (Kasser & Ryan, 1996). This measure has shown strong psychometric properties (e.g., Grouzet et al., 2005; Kasser & Ryan, 1993, 1996; Ryan et al., 1999; Schmuck et al., 2000; Utvær et al., 2014) with test-retest correlations in the range of 0.66 to 0.77 (e.g., Kasser et al., 2014), and Cronbach’s alphas in the range of .60 to .89 (e.g., Kasser & Ryan, 1993, 1996; Sheldon, 2005).
Substance Use Risk Profile Scale
The Substance Use Risk Profile Scale (Woicik et al., 2009) assesses personality traits that have been associated with maladaptive drug and alcohol use. The 23-item questionnaire has four subscales: Anxiety Sensitivity (“It’s frightening to feel dizzy or faint”), Hopelessness (“I feel I’m a failure”), Impulsivity (“I often don’t think things through before I speak”), and Sensation Seeking (“I enjoy new and exciting experiences even if they are unconventional”). Each item is rated on a 4-point scale from 1 (strongly disagree) to 4 (strongly agree). Overall this scale has shown good psychometric properties in adolescent samples (e.g., Castellanos-Ryan et al., 2013; Castonguay-Jolin et al., 2013; Chandrika Ismail et al., 2009; Krank et al., 2011; Schlauch et al., 2015; Woicik et al., 2009). Test-retest reliability is as high as 0.80 (e.g., Woicik et al., 2009) and Cronbach’s alphas are satisfactory ranging from .65 to .76 (e.g., Schlauch et al., 2015; Woicik et al., 2009).

Modified Drinking Motives Questionnaire-Revised
The Modified Drinking Motives Questionnaire-Revised is a five-factor 28-item self-report questionnaire created by Blackwell and Conrod (2003) to assess individual motives preceding the consumption of alcohol. The present study used three subscales: Enhancement (“To get a high”), Coping With Anxiety (“To relax”), and Coping With Depression (“To numb my pain”). Each item is rated on a 5-point scale ranging from 1 (almost never/never) to 5 (almost always/always). Items are added up to form a total score for each subscale. The Modified Drinking Motives Questionnaire-Revised has shown good psychometric properties (e.g., Grant et al., 2007). Cronbach’s alphas for the selected subscales range from .58–.74 and test-retest reliabilities range from .61–.78 (Grant et al., 2007).

Procedure
Research Ethic Boards at each of the two universities reviewed and approved of the study. All participants were recruited on campus with the use of an online research management system, flyers, and announcements. Participants completed study questionnaires at baseline and follow-up (2 weeks later). Following completion, participants were offered three credit points toward an eligible psychology course or entered into a draw to win $100. There were 14.4 days (SD = 1.8) between baseline and follow-up measures. Only 1 participant of the initial 317 did not attend the follow-up session, resulting in a high retention rate across time.

Data Analysis
In Model 1, we assessed whether personality traits (at baseline) would predict the corresponding drinking motive (at follow-up; e.g., hopelessness

### TABLE 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Means</th>
<th>Standard Deviations, Cronbach’s Alphas, and Bivariate Correlations</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Baseline materialism</td>
<td>2.93</td>
<td>0.75</td>
</tr>
<tr>
<td>Baseline hopelessness</td>
<td>12.63</td>
<td>3.56</td>
</tr>
<tr>
<td>Baseline anxiety sensitivity</td>
<td>11.47</td>
<td>2.82</td>
</tr>
<tr>
<td>Baseline sensation seeking</td>
<td>16.64</td>
<td>3.55</td>
</tr>
<tr>
<td>Baseline coping depression</td>
<td>13.13</td>
<td>6.59</td>
</tr>
<tr>
<td>Baseline coping anxiety</td>
<td>7.74</td>
<td>3.29</td>
</tr>
<tr>
<td>Baseline enhancement</td>
<td>12.90</td>
<td>4.80</td>
</tr>
<tr>
<td>Follow-up materialism</td>
<td>2.83</td>
<td>0.79</td>
</tr>
<tr>
<td>Follow-up hopelessness</td>
<td>12.10</td>
<td>3.59</td>
</tr>
<tr>
<td>Follow-up anxiety sensitivity</td>
<td>10.64</td>
<td>3.14</td>
</tr>
<tr>
<td>Follow-up sensation seeking</td>
<td>16.33</td>
<td>3.79</td>
</tr>
<tr>
<td>Follow-up coping depression</td>
<td>11.86</td>
<td>5.49</td>
</tr>
<tr>
<td>Follow-up coping anxiety</td>
<td>6.98</td>
<td>3.22</td>
</tr>
<tr>
<td>Follow-up enhancement</td>
<td>12.16</td>
<td>5.32</td>
</tr>
</tbody>
</table>

Note: Follow-up (2-week interval). Hopelessness, Anxiety Sensitivity, and Sensation Seeking – Substance Use Risk Profile Scale. Enhancement, Coping with Depression, and Coping with Anxiety Motive – Modified Drinking Motive Questionnaire Revised.

*p < .05. **p < .01. ***p < .001.
predicting drinking to cope with depression). In Model 2, we ran a series of hierarchical regression models to explore our hypothesis that materialism would predict drinking motives after controlling for personality traits. In particular, we tested whether (a) materialism and hopelessness (at baseline) would predict coping with depression drinking motive (at follow-up), (b) materialism and anxiety sensitivity (at baseline) would predict coping with anxiety drinking motive (at follow-up), and materialism and sensation seeking (at baseline) would predict enhancement drinking motive (at follow-up).

Results

Descriptive Statistics
Means, standard deviations, Cronbach’s alphas, and bivariate correlations are reported in Table 1. Means for the study measures used at each time point were comparable to previous research conducted in similar samples (e.g., Grant et al., 2007; MacKinnon et al., 2014; Schmuck et al., 2000; Vansteenkiste et al., 2006; Woicik et al., 2009). Cronbach’s alphas for all scales used in the analyses were satisfactory (α > .72) and the test-retest correlations for study measures were adequate. Bivariate correlations show the expected pattern of relationships between variables. For instance, the correlations between personality traits, drinking motives, and materialism at baseline and follow-up were comparable highlighting the stability in these relationships. Additionally, materialism at baseline was correlated with the drinking motive subscales at follow-up. Furthermore, hopelessness (at baseline) was correlated with the coping with depression drinking motive; anxiety sensitivity (at baseline) was correlated with the coping with anxiety drinking motive; and sensation seeking (at baseline) was correlated with the enhancement drinking motive (at follow-up).

Hierarchical Regressions
Regression analyses are presented in Table 2. In Model 1, each personality trait (at baseline) significantly predicted the resultant drinking motive (at follow-up). In Model 2, materialism (at baseline) significantly predicted drinking motives (at follow-up) and above the relevant personality traits (at baseline). More specifically and consistent with our hypothesis, materialism significantly predicted (a) coping with depression drinking motive while controlling for hopelessness (β = .16), t(314) = 3.12, p = .014, (b) coping with anxiety drinking motive while controlling for anxiety sensitivity (β = .21), t(314) = 3.86, p < .001.

Discussion
Based on past research linking materialism to increased alcohol use (e.g., Auerbach et al., 2009; Kasser, 2005; Kasser & Ryan; 2001; Vansteenkiste et al., 2006; Williams et al., 2000), the present study was the first to hypothesize that undergraduate students holding greater materialistic values would endorse higher levels of risky drinking motives. Controlling for established personality predictors permitted the assessment of materialism’s unique contribution in predicting risky drinking motives. As hypothesized, materialism significantly and positively predicted drinking motives over and above personality traits.

The results support research linking materialism to poorer mental health (e.g., Burroughs & Rindfleisch, 2002; Dittmar et al., 2014) and more frequent alcohol use (e.g., Auerbach et al., 2009; Kasser, 2005; Kasser & Ryan; 2001; Vansteenkiste et al., 2006; Williams et al., 2000). Consequently, the results provide added evidence for a self-medication model to explain this relationship. Whether or not their goals are attained, an individual who is oriented toward increasing their attractiveness, wealth, and popularity may experience an increase in negative states due to an absence of experiences that promote autonomy, competence, and interpersonal relationships (Kasser, 2002; Williams et al., 2000). Individuals may then consume

<table>
<thead>
<tr>
<th>TABLE 2</th>
</tr>
</thead>
</table>

Hierarchical Regression Analysis Predicting Drinking Motives

<table>
<thead>
<tr>
<th>Predictors</th>
<th>R²</th>
<th>β</th>
<th>Adj. R²</th>
<th>ΔR²</th>
<th>ΔF</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coping With Depression Motive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 1: Hopelessness</td>
<td>.17***</td>
<td>.43***</td>
<td>.19</td>
<td>0.17</td>
<td>66.54***</td>
<td>1, 315</td>
</tr>
<tr>
<td>Model 2: Materialism</td>
<td>.20***</td>
<td>.16**</td>
<td>.19</td>
<td>0.03</td>
<td>9.74**</td>
<td>1, 314</td>
</tr>
<tr>
<td>Coping With Anxiety Motive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 1: Anxiety sensitivity</td>
<td>.05***</td>
<td>.22***</td>
<td>.05</td>
<td>0.05</td>
<td>18.04***</td>
<td>1, 315</td>
</tr>
<tr>
<td>Model 2: Materialism</td>
<td>.07***</td>
<td>.11*</td>
<td>.06</td>
<td>0.01</td>
<td>4.35*</td>
<td>1, 314</td>
</tr>
<tr>
<td>Enhancement Motive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 1: Sensation seeking</td>
<td>.05**</td>
<td>.20**</td>
<td>.05</td>
<td>0.05</td>
<td>16.05**</td>
<td>1, 315</td>
</tr>
<tr>
<td>Model 2: Materialism</td>
<td>.09**</td>
<td>.21**</td>
<td>.09</td>
<td>0.04</td>
<td>14.86**</td>
<td>1, 314</td>
</tr>
</tbody>
</table>

Note: Hopelessness, Anxiety Sensitivity, and Sensation Seeking, and Materialism assessed at baseline. Depression, Anxiety, and Enhancement Motives assessed at follow-up (2-week interval). 

p < .05, **p < .01, ***p < .001.
alcohol to enhance or cope with their thoughts and feelings. However, research assessing the potential mediational variables in the relationship between materialism and alcohol use has been limited. Recent research has shown the association between materialism and reduced well-being to be mediated by factors such as individual differences in neuroticism (Górnik-Durose & Boroń, 2018). Thus, materialistic individuals may vary in their susceptibility to consume alcohol for reasons that place them at risk for future alcohol use and related problems depending on their level of neuroticism. Future research may benefit from assessing the role that neuroticism (and other potential mediating variables) may play in the relationship between materialism, risky drinking motives, alcohol use, and alcohol-related problems.

Of note was the effect size, $R^2 = .04, F(1, 314) = 15.81, p < .001$, and standardized beta value ($\beta = .21$), $t(314) = 3.86, p < .001$, associating materialism and drinking for enhancement reasons, which were the largest in the present study. The association may occur because individuals who prioritize materialistic values pursue money and possessions to enhance their self- and affective states. However, once their distress becomes acute due to a reduction in experiences that foster autonomy, competence, and interpersonal relationships, individuals may then consume alcohol to provide states similar to those temporarily achieved following attainment of their materialistic goals. It is important to mention that the participants in our study were primarily first-year undergraduates, which might have influenced the results. For example, Stewart and colleagues (1996) found significantly higher enhancement motives for students 20 years and under. However, in a sample of first-, second-, and third-year undergraduate students, Martens et al. (2008) only found significant increases for the conformity motive in first-year students (a motive we did not examine in our study). It is also important to note that a meta-analysis conducted by Dittrum et al. (2014) demonstrated that the relationship between materialism and health-risk behaviours decreases in individuals under the age of 18. Considering that our sample included participants under the age of 18, the results might have been attenuated.

The hypotheses of the present study were supported by the findings and add to the relevant literature by demonstrating that greater levels of materialism predict drinking for enhancement, drinking to cope with depression, and drinking to cope with anxiety over and above established risky personality traits. Given the link between these drinking motives, increased alcohol use and related problems, materialism may also be a risk factor relevant for predicting future alcohol use and alcohol-related problems. Future research would benefit from assessing the temporal associations between materialism, drinking motives, alcohol use, and related problems. Furthermore, future research would benefit from assessing whether a significant relationship between materialism and drinking motives occurs when motives are measured using daily process methods (Littlefield et al., 2012; Mohr et al., 2013).

Results may inform future prevention and intervention efforts targeting at-risk undergraduate students in reducing their frequency of alcohol use and related problems. For example, these results may aid personality-matched interventions that apply principles from motivational and cognitive-behavioral theories, and tailor treatments to specific personality traits (e.g., anxiety sensitivity, sensation seeking) that place individuals at risk for substance abuse (Conrod et al., 2000; Conrod et al., 2006). These interventions have been effective in reducing drug-related problems while improving abstinence and remission rates (Conrod et al., 2000; Conrod et al., 2006). Because materialism was shown to predict drinking motives over and above three of these traits, personality-matched interventions may benefit from expanding their treatments to the broader values people hold.

The present findings should be viewed in light of study limitations. Although the study used a longitudinal design, the time period between baseline and follow-up was relatively short. Longitudinal designs spanning greater time periods would aid in further establishing the temporal stability of the findings. The study also obtained information solely via self-reports, which can be susceptible to socially desirable responses and inaccurate recall. Future research may benefit from assessing and controlling for socially desirable responding. Given that our sample was predominantly European American and that most students were in their first year of university, it is unknown whether results would generalize to other samples (e.g., given that evidence suggests first-year students are more likely to consume alcohol; Bishop et al., 2005; Grekin & Sher, 2006).

Overall, higher levels of materialism may predispose individuals to consume alcohol for reasons that place them at risk for increased alcohol use and related problems. Alcohol-use risk-reduction
interventions (e.g., Carey et al., 2007) and personality-matched interventions targeting individuals at risk for substance abuse (e.g., Conrod et al., 2000; Conrod et al., 2006) may benefit from including various prevention and intervention efforts that aim to address individual levels of materialism. Although the present study was the first to assess the hypothesized associations, the results should be viewed critically and motivate researchers to inquire further about various treatments for individuals at risk for alcohol use and related problems.

References


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