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Exploring personality and motivational characteristics of student pre-drinkers

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EXPLORING PERSONALITY AND MOTIVATIONAL CHARACTERISTICS OF STUDENT PRE-DRINKERS

By

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Exploring Personality and Motivational Characteristics of Student Pre-drinkers

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ABSTRACT

The purpose of this research was to investigate pre-drinking motivations and behaviour within the theoretical framework of reversal theory and the consideration of future consequences. This study assessed the Prepartying Motivations Inventory (PMI) and examined novel motivations identified through a thematic analysis. Pre-drinking was studied in relation to reversal theory as well as the consideration of future and immediate consequences. A sample of 248 undergraduate students completed an online survey consisting of open-ended questions, drinking and pre-drinking questions, a metamotivational state measure, the Motivational Style Profile, the Consideration of Future Consequences scale, the PMI, and a brief demographic questionnaire. It was demonstrated that pre-drinking motivations may be a function of metamotivational dominance, and that consideration of immediate consequences, telic dominance, negativism dominance, and arousal seeking, were significantly related to pre-drinking behaviour. Findings are discussed in terms of practical implications as well as suggestions for future research directions.

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INTRODUCTION

Pre-drinking (also referred to in the research as prepartying, pregaming, preloading, and prefunking; Pederson & LaBrie, 2008) is defined as consuming alcohol before going out to an event where more alcohol may or may not be consumed (Pederson & LaBrie, 2007). Thomas (2007) calls this a "dangerous new type of teenage drinking" that researchers should begin to examine. While research on drinking in general, and drinking games in particular, has existed for many years, research surrounding the phenomenon of pre-drinking has really only emerged in the past six years. Most existing literature in the area surrounds issues of prevalence, gender and ethnic differences, and the consequences of pre-drinking. For example, Borsari and colleagues (2007) found that pre-drinking was associated with higher blood alcohol levels, and that it was actually more risky than playing drinking games. The authors reported that 31% of students who were cited for alcohol policy violations on campus were pregaming on the night of the event. Further, Pederson and LaBrie (2007) found that both male and female students consume more alcohol on nights when they pre-drink, than on nights when they do not, leading to higher rates of binge drinking (defined as consuming more than 4 drinks on one occasion for females, and 5 drinks on one occasion for males; National Institute on Alcohol Abuse and Alcoholism, 2004). Students also report more alcohol-related consequences such as ending up in a place without knowing how they got there, fainting, and getting sick or experiencing hangovers.

It is evident that there are negative outcomes associated with pre-drinking, but the factors associated with this behaviour are relatively unknown. It was not until 2009 that researchers began to publish studies examining reasons for and predictors of pre-drinking

(DeJong, DeRicco, & Schneider, 2010; Pederson, LaBrie, & Kilmer, 2009). Increasing our understanding of what leads to pre-drinking will have implications for prevention techniques on college and university campuses.

The present research served to examine pre-drinking in relation to the consideration of future consequences, explore the different reasons for pre-drinking, and develop a motivational profile for pre-drinkers, using the theoretical framework of reversal theory. A review of the literature will include a description of the current problem and reasons for examining it, an explanation of reversal theory and consideration of future consequences, along with empirical evidence for their use with risky behaviours, and will be followed by a description of the proposed study.

Alcohol Use

Mild to moderate alcohol use is relatively common in teenagers, adults, and even children. While the legal drinking age for Canadians is 18 or 19 (depending on which province one is from), it is widely known that teenagers – and even children – sometimes consume alcohol while they are under-age. According to the 2011 Canadian Alcohol and Drug Use Monitoring Survey (CADUMS; Health Canada, 2012), the average age of drinking initiation for people between the ages of 15 and 24, was 16. However, it should be noted that this survey did not question people younger than 15, and therefore, the average age of onset could be lower. Further, 14.9% of youth exceed the low-risk drinking guideline for chronic effects such as liver disease and certain cancers, and 12.8% exceed the guideline for acute effects such as overdoses and injuries (Health Canada, 2012). This is likely related to the fact that 9.4% of youth aged 15 to 24 engage

in heavy-frequent drinking, drinking one or more times per week on average, usually consuming at least 5 drinks on each occasion (Health Canada, 2011).

Student alcohol use. According to the Canadian Campus Survey (Adlaf, Demers & Gliksman, 2005, as cited in Kendall, 2008) 44% of Canadian undergraduate students engage in harmful drinking, with almost 32% reporting at least one symptom of dependent drinking, as measured by the Alcohol Use Disorders Identification Test (AUDIT). This is much higher than the prevalence in the general population (15 years and older), indicating that university and college students are at particular risk (Kendall, 2008). Similar statistics have been found in the United States where drinking alcohol is the number one contributor to college student morbidity and mortality (Hingson, Hereen, Winter, &Wechsler, 2005) and 31% of U.S. college students meet criteria for alcohol abuse (Knight et al., 2002). Considering these statistics, it is evident that student alcohol use is a cause for concern, and that research should continue to look at the different behaviours associated with drinking (e.g., pre-drinking), along with reasons and motivations for such risky behaviours.

The Phenomenon of Pre-drinking

While being interviewed for a newspaper article, a university student described her take on pre-drinking:

> We'd sit in our dorm rooms – 18 and 19 year olds – and try to drink as much as possible before going out. I think it goes on at every college. No one cares, even when they get caught. They think a speeding ticket is worse. (Flynn, 2007).

Although this statement only reflects the beliefs of one student, it opened the door for researchers to explore this phenomenon. Since the original article by Sandra Thomas

(2007) quoting this statement and suggesting that this behaviour be examined by researchers, there have been relatively few published articles focused on pre-drinking. Those that do exist will be discussed below.

Pre-drinking definition. Pre-drinking is most commonly referred to in the research as pregaming (Borsari et al., 2007) and prepartying (Pederson & LaBrie, 2007). For the purposes of the proposed research, the term pre-drinking will be used to ensure a focus on the drinking aspect of the behaviour. While the terms are generally used interchangeably, it has been noted that some students include other behaviours under the umbrella of pregaming and prepartying, specifically smoking marijuana. One focus group participant from a study by DeJong and others (2010) indicated that "weed is a big factor in pregaming for some people" and that sometimes they just smoke, and save the drinking for the main event. Because of this, it is important to emphasise the *drinking* part of the behaviour and refer to it as pre-drinking when asking the students questions that specifically relate to their alcohol-related behaviour.

The first published article concerning pre-drinking had not operationalized the behaviour. It was simply referred to as pre-nightlife alcohol use (Hughes, Anderson, Morleo, & Bellis, 2007), but was only concerned with the drinking that occurred before attending a city club or bar, and did not examine pre-drinking before other social events. It is now known that students engage in this behaviour under a variety of circumstances, and may engage in different activities depending on the night, the event they are attending afterwards, and who is involved.

Borsari and colleagues published the second empirical article concerning pre-drinking in 2007. They used the term pregaming, and suggested that it may have derived

its name from its association with tailgating in parking lots before sporting events. According to these authors, pregaming refers to the drinking that occurs before attending any social event, in order to get a buzz, ensure intoxication, save money, or wait for people to gather for the night (Borsari et al., 2007). While this definition seems comprehensive, it makes assumptions about the reasons for pregaming, even though they had not been extensively researched.

In 2008, Wells, Graham and Purcell stated that pre-drinking is a behaviour that "involves planned heavy drinking, usually at someone's home, prior to attending a social event, typically a bar or nightclub." However, this definition also makes assumptions that may not be true in every situation. For example, while pre-drinking is often thought of as a planned behaviour, there may be cases in which one does not plan to engage in pre-drinking, but is pressured by peers, or makes a spontaneous decision to do so.

The definition adopted for the purpose of the proposed research was first written by Pederson and LaBrie in 2007. They used the term prepartying, and defined it as the "consumption of alcohol prior to attending an event or activity at which more alcohol may be consumed" (Pederson & LaBrie, 2007). By restricting the term pre-drinking to this definition, it is appropriately operationalized and avoids assumptions about the reasons for engaging in the behaviour, or the activities that may be involved. It therefore places a focus on the alcohol consumption aspect of the behaviour and allows for researchers to examine the relevant factors surrounding pre-drinking to help further explain the phenomenon.

Prevalence of pre-drinking. Because this is a relatively new area of research, prevalence rates for pre-drinking have not been firmly established. However, we can gain

an idea of what prevalence rates might look like, by referring to the literature. For example, Hughes and colleagues (2007) conducted a field study consisting of 380 bar patrons between the ages of 18 and 35, in North West England. By distributing short questionnaires in nightlife venues, they found that 55% of men and 60% of women reported pre-drinking prior to going out. In 2008, LaBrie and Pederson distributed an online questionnaire to 238 student drinkers to examine differences between nights that included pre-drinking and nights that did not. They stated that 85% of student drinkers reported pre-drinking within the one month prior to their study. In another online survey of 2546 undergraduate students attending two American West Coast universities, Paves, Pederson, Hummer, and LaBrie (2012) reported that 52% of students had engaged in pre-drinking at least once in the month leading up to their study. Moreover, prevalence rates seemed to differ according to ethnicity, such that research participants identifying as White showed the highest pre-drinking prevalence rates, above Hispanic/Latino, Asian/Pacific Islanders, and African American/Black participants, yet no gender differences were identified.

In order to examine pregaming behaviour and inform future research, DeJong and colleagues (2010) conducted focus groups with a diverse sample of undergraduate students from ten colleges and universities throughout Pennsylvania. They found that 33% of their participants had pregamed in the two weeks prior to the study, but no other prevalence information was reported. Finally, 31% of students who had been cited for alcohol policy violations at an American university campus in the Northeast reported pre-drinking on the night of their citation (Borsari et al., 2007).

While we cannot establish a firm rate for pre-drinking in students, we can see that it is quite prevalent, at least in the United States. There has not yet been any published data regarding pre-drinking in Canada.

Pre-drinking and legal drinking age. Thomas (2007) suggested that the problem of pre-drinking in the U.S. could be solved by lowering the drinking age from 21 to 18 or 19. By doing this, college students who pre-drink because they cannot purchase alcohol in bars would no longer feel the need to do so. This may be supported by previous research samples with mean ages between 18 and 20 (Borsari et al., 2007; LaBrie & Pederson, 2008; Wei, Barnett & Clark, 2010). However, it is thought that students of all ages engage in this behaviour, regardless of legal drinking age. For example, LaBrie, Hummer, Kenney, Lac, and Pederson (2011) conducted a study with student drinkers, in which 37% of the sample was above 21 years of age. While they did not report a mean age or the prevalence rates for pre-drinking, they did report numbers of participants who had experienced a blackout on a pre-drinking night, at least once in the thirty days prior to the study. Calculations of data reported by LaBrie and colleagues (2011) indicate that the rate of blacking out was virtually identical for the two age groups; 24% of student drinkers 21 years and older, and 25% of under-age student drinkers reported blacking out on a night when they engaged in pre-drinking. Moreover, Pederson and others (2009) noted that participants over the legal drinking age, and those who are not yet of the legal drinking age did not differ in pre-drinking frequency or quantity of alcohol consumed during pre-drinking.

While the findings described above do not provide definitive evidence that pre-drinking is equally common in students who are of the legal drinking age, as those who

are not, they do suggest that legal drinking age is not the only problem. More research needs to examine these contributing factors, but it may be that students still choose to engage in this practice, just for different reasons as they get older. Examining pre-drinking in a Canadian sample in which the drinking age is 19 may shed some light on whether the pre-drinking phenomenon exists independently from the higher legal drinking age in the U.S.

Pre-drinking behaviour and related consequences. Many people understand the risk associated with consuming alcohol, and specifically with reaching intoxication. However, the goal of pre-drinking seems to be purposeful inebriation, and there are many ways to accomplish that. From 'slamming shots' and playing drinking games, to casually drinking a few beers, students' levels of intoxication and related consequences likely depend on the series of events that takes place. Pederson and LaBrie (2007) found that the average student spent about an hour and twenty minutes pre-drinking before leaving for the final destination; females consuming an average of 3.2 standard drinks, and males, 3.7 drinks. While this, alone, would not be defined as binge-drinking, students tend to consume more after pre-drinking (an average of 2.5 and 4.1 more drinks for women and men, respectively). This brings their total consumption above the cut-offs defined for binge-drinking (4 or more drinks on one occasion for females, and 5 or more for males; National Institute on Alcohol Abuse and Alcoholism, 2004) and also significantly higher than what students typically consume on days when they do not pre-drink.

Pre-drinking contexts. Pederson and LaBrie (2007) used questionnaire data to examine what happens during pre-drinking. The dominant trend was to drink with friends or roommates while getting ready to go out; 98% of males, and 100% of females reported

this. Only 2% of males (and zero females) reported drinking alone before going out. Pederson and LaBrie only examined these two options, and it is probable that there are other conditions in which students pre-drink. For example, DeJong and colleagues (2010) found that students described settings such as residence rooms, apartments, cars, and parking lots as the most common environments for pre-drinking. This could be done alone, in a large group, or with a few close friends, and not necessarily while getting ready to go out. Further, they reported pregaming prior to several different activities such as formals, dances, on- or off-campus parties, sporting events, and going out to pubs or nightclubs. Some students endorsed drinking more moderately during pre-drinking if they were going to a school function, and most students stated they drink more heavily before the main event if it is anticipated to be boring (DeJong et al., 2010).

With changing situations, environments and purposes, pre-drinking likely involves different activities, and results in different outcomes. Allowing students to give an account of pre-drinking situations using open-ended questions could help identify other factors that contribute to increased intoxication while pre-drinking, and could lead to the development of new research questions and methods of assessment.

Pre-drinking and drinking games. While some people may believe that drinking games go hand-in-hand with pre-drinking, researchers have set out to determine if this is the case. In 2007, Borsari and others studied a group of students who had been cited for alcohol policy violations on their campus, and were subsequently referred to a mandatory alcohol intervention. It was reported that, on the night of their referral event, approximately 33% participated in drinking games but did not pregame, 17% pregamed but did not play drinking games, and only 12% engaged in both. According to this,

drinking games are actually more popular than pre-gaming. This could be because drinking games can take place at both the pre-party as well as the main event. However, Zamboanga and colleagues (2009) found that a significantly *smaller* proportion of students engaged in drinking games than engaged in pre-drinking. This suggests that drinking games can be, but are not always a part of pre-drinking activities. Further, Pederson and LaBrie (2007) found that approximately 45% of students reported participating in drinking games while pre-drinking, and suggested that the speed-drinking aspect of both activities enhances students' risks for consequences.

Consequences associated with pre-drinking. The problems associated with drinking in general seem to be the same, though more intensified, for pre-drinking. According to Pederson and LaBrie (2007) as pre-drinking frequency and total drinks consumed increases, so too does the likelihood of impaired driving, getting in a fight, having a bad time, passing out suddenly, and experiencing blackouts and hangovers. Further, they state that student pre-drinkers also report more missed classes and a decreased ability to do homework or study. This may be related to the fact that students who engage in pre-drinking often consume more alcohol, and at a quicker pace than those who do not, often reaching intoxication before leaving for the main event (Pederson & LaBrie, 2007).

Further investigation using focus groups provided a deeper insight into what students believed to be consequences of pre-drinking. DeJong and colleagues (2010) reported that students listed black outs, alcohol poisoning, drunk driving, sexual risk taking, and injuries among the most frequent risks associated with pre-drinking. However, there were also other notable concerns such as the intimate nature of pre-

drinking in smaller groups. While some stated that it is beneficial to drink with close, trustworthy friends, others explained that there is often a greater degree of social pressure to drink heavily because it is more evident how much each person is drinking. Since many students attempt to keep up with each other, regardless of their own tolerance, they are more likely to experience these adverse effects, especially for females who try to match male consumption. Consequently, students also mentioned not being able to go out to the primary destination because of excessive inebriation. As one student explained "getting too pregamed so you can't move or get to where you're going to. It's not a pregame anymore – it's the game" (p. 314). In these cases, it is probably in the students' best interest to stay at the pre-drinking location, rather than venture out to a bar or event. However, because they are already extremely intoxicated, students may still experience some of the other problems such as alcohol poisoning and blacking out.

Overall, the consequences associated with pre-drinking have a solid foundation but have not been extensively researched. It may be beneficial for future research to investigate which specific pre-drinking behaviours or patterns lead to specific outcomes.

Motivations for pre-drinking. There are two main groups of researchers who have studied the *reasons* for pre-drinking, and both have created measures to examine them. It is important to investigate the reasons for pre-drinking separately from those for drinking in general, because evidence suggests that motives for each of these behaviours are not parallel, and those traditionally studied in relation to general drinking do not predict pre-drinking behaviour (LaBrie, Hummer, Pederson, Lac, & Chithambo, 2012; Read Merril, & Bytschkow, 2010).

Pregaming motives measure. Through qualitative interviews, Read and colleagues (2010) created a list of six possible reasons they believed would bridge the gap between general drinking motives and those specific to pre-drinking. Some of these reasons were that pre-drinking makes going out more fun, it reduces anxiety, and it saves money (which was the most frequently endorsed in their empirical study).

In 2012, Bachrach, Merrill, Bytschkow, and Read developed a multi-stage study in order to develop a valid measure to assess pre-drinking motivations. First they used focus groups to create a comprehensive list of pre-drinking motivations. This resulted in a 31-item Pregaming Motives Measure (PGMM) which included financial, practical, social, coping, enhancement and conformity motives. By conducting an exploratory factor analysis (EFA), fifteen items were retained, and fell into three factors: inebriation/fun (e.g., "to get drunk at a more accelerated pace"), instrumental (e.g., "because there will not be enough alcohol at the event"), and social ease (e.g., "to make an awkward situation at the event easier to deal with"). With adequate reliability scores, the authors administered this new measure to another independent sample of college students and conducted a confirmatory factor analysis (CFA), which confirmed the original factor structure, including all fifteen items. According to the authors, the reasons for pre-drinking are unique compared to the reasons for drinking in general, and all seem to relate to a need for positive affect. This scale has not yet been used in any other studies and the authors suggest it be validated with other college samples.

Prepartying motivations inventory. Through anecdotal conversations with students, Pederson and colleagues (2009) created a list of twenty possible reasons to pre-drink and devised a questionnaire to obtain empirical data. They found that the most

popular motive for pre-drinking was “to show up to a party/social event buzzed”, which was also highly related to the amount of alcohol students consumed and their resultant blood alcohol levels. They also reported some differences between males and females. For example, compared to females, males were more likely to report reasons associated with meeting people of the opposite sex, facilitating opportunities for sex, and conforming to social pressure. However, there was still a need for a comprehensive pre-drinking motivations measure, rather than using mere suggestions from students.

In another study, LaBrie and colleagues (2012) asked a large sample of university students to report all typical reasons for pre-drinking. This helped form a list of the 27 most-endorsed motives, which were included in a second survey given to a different sample of university students. Following statistical analyses including EFA and CFA, the Prepartying Motivations Inventory (PMI) was developed. With sixteen items divided into four factors, this scale measures motives related to interpersonal enhancement (e.g., it makes talking to new people easier), situational control (e.g., so I have control over what type of alcohol I consume), intimate pursuit (e.g., to increase the likelihood of hooking up), and barriers to consumption (e.g., because alcohol may not be available at the destination). The most highly endorsed reasons for pre-drinking were to get pumped-up before going out, and because it made the night more interesting, which both fall under interpersonal enhancement.

This measure seems to be comprehensive, with a good factor structure and reliability scores. For this reason, it will be included in the proposed study to help explain students’ reasons for pre-drinking. The validity, reliability and the factor structure will all

be analysed, because this measure has yet to be used in published studies by any other authors.

Further, although this measure can help researchers identify the most frequent reasons for pre-drinking, it remains unclear why some people endorse specific reasons for pre-drinking more than others. Understanding the individual differences related to how students approach pre-drinking, and why they do it is important and could help with the formation of individualized interventions and prevention techniques. The current study will look at metamotivational personality tendencies, as described by reversal theory, in relation to pre-drinking motives to help further explain this phenomenon of student pre-drinking.

Reversal Theory

Reversal theory is generally referred to as a theory of motivation, emotion, and personality (Apter, 2007). It opposes the traditional trait-based approaches to personality, proposing general principles that allow for insight into the paradoxical and inconsistent qualities of human nature. It also acknowledges that people are more complex and dynamic than trait theories would suggest. Reversal theory anchors itself in a set of opposite and mutually exclusive pairs of metamotivational states, or "ways of being" that we all *reverse* between in our daily lives. These *reversals* represent how people experience their world according to their primary needs and goals, and occur when an individual switches from one state to another. These are often triggered by events such as environmental stimuli, frustration, or satiation (Apter, 2007).

If a reversal is contingent on environmental stimuli, something must happen that forces a switch from one state to another. For example, if one is quietly enjoying a book

before bed and hears a loud bang in the other room, the person is likely to shift his or her state from one that is relaxed and activity-oriented (in this case, reading a book for enjoyment) to one that is goal-oriented (in this case, finding out what that noise was). If the individual goes to the next room and realizes the cat knocked a book off the shelf, he or she will resume reading the book and switch back into the activity-oriented state. However, if a favourite photo frame was knocked down and broken, the individual will remain in a goal-oriented state, focused on cleaning up the mess or fixing the frame.

Frustration can also be a source of state-reversal. For example, Barr, McDermott, and Evans (1993) studied state reversals during the completion of a complex jigsaw puzzle that had only one correct way of completing the puzzle, but 300,000 other possible combinations (as cited in Apter, 2007. p. 59). They found that some participants started off very activity-oriented, such that they found completing the puzzle enjoyable and were completing it for the sake of the activity itself. However, when these subjects reached a certain point during the task, they switched to a more goal-oriented state, trying to ensure the proper completion of the puzzle. They also reported that the opposite was true; those who started off with the clear goal of completing the puzzle, ended up doing it 'for the fun of it' when they realized it was highly improbable that they would correctly combine all of the pieces.

The final mode of state reversal is by way of satiation. This idea suggests that there is something within the individual that will inevitably lead to a reversal unless something else (frustration or an environmental event) occurs to force the reversal sooner (Apter, 2007). For example, Lafreniere, Cowles, and Apter (1988; as cited in Apter, 2007, p. 62) conducted an experiment where psychology students were asked to sit in a

bare room for two hours, using a computer. They were given two types of material – statistics teaching programs and video games – and given complete freedom as to which programs they used and when. What they found was that the students who switched between the two types of material did so for a variety of reasons; one being that they had made a conscious decision ahead of time to try both types of programs (unrelated to metamotivational reversals) and another being that they were frustrated with the current program. However, other reversals were left without explanations and students reported no reason for wanting to switch programs. That is, it just happened, or they just felt like switching. These were explained as satiation-induced reversals, occurring because students had been in one state, or involved in one activity for some period of time and had had enough.

It has been suggested that undergoing regular reversals is a key to maintaining psychological health, and that the inhibition or over-facilitation of reversals in any of the states can lead to psychopathology (Lafreniere, Ledgerwood, and Murgatoyd, 2001). For example, someone who is constantly goal-oriented, treating everything as a means to an end, finds it difficult to enjoy the moment and be worry-free. These individuals are likely to experience high anxiety, and in extreme cases this can lead to an anxiety disorder. On the other hand, a person may experience reversals at inappropriate times. For example, a student is studying for the last final exams of her undergraduate career. She is goal-oriented because she wants to perform well, and graduate with honours. However, she really wants to celebrate with her friends, and instead of remaining focussed on her goal, she opts for a night on the town, reversing into a more playful, present-oriented state. The next day, with only a few more hours to study for her final exam, she reverses back to a

goal-oriented state and her anxiety reaches a peak level, producing unwanted nervousness and she begins worrying too much about the exam to actually focus on her studying. Through these examples, it is evident that appropriate reversals are important to the well-being of every individual.

Metamotivational states. There have been four main pairs of opposite and mutually exclusive metamotivational states identified by reversal theory. Individuals typically reverse between the two states of each pair throughout each day, and can experience a different combination of the states depending on their environment, their mood, and their individual tendencies or preferences.

Telic and paratelic. Individuals who are in the *telic* state are generally serious minded and goal oriented. Activities are often used as a means to an end, and any circumstances that may delay the attainment of the goal (e.g., distractions) tend to be anxiety provoking (Apter, 2007). On the other hand, people who are in the *paratelic* state feel the need to enjoy the present moment and engage in activities for the enjoyment of the activity itself, not to accomplish any goal. They are often more playful and spontaneous, taking life as it comes.

Arousal-avoidance and arousal-seeking. As outlined by Apter (2007), there seem to be circumstances under which high (or low) levels of arousal can be either pleasant or unpleasant, depending on what state the individual is in. When one is in the telic state, focused on achieving some goal, events that increase arousal are experienced as anxiety-provoking and individuals in this state most often try to avoid anything that may induce that feeling. On the other hand, when someone in the paratelic state experiences heightened arousal, it is often reported as more *exciting* than anxiety-provoking. At low

levels of arousal, people in the telic state experience more relaxation, whereas those who are in the paratelic state will often report feeling bored. It should also be noted that the same activity may have a different effect on the same person, depending on whether they are trying to avoid or seek arousal. For example, a man who has a lot of money riding on a horse at the race-track will be more goal-oriented, because he wants his horse to win. However, his son has nothing at stake, regardless of who wins or loses. In the case of a really close race, the man is likely to experience anxiety and stress whereas his son, who is likely in the paratelic state, may be sitting on the edge of his seat with excitement.

Conformity and negativism. Conformity indicates a submission to rules, situational requirements, and social norms or expectations. Individuals in this state often want to 'do the right thing', whereas those who are in the negativistic state have the desire to challenge rules and behave differently than others would expect or want (Apter, 2001).

Mastery and sympathy. This pair of metamotivational states is primarily concerned with interactions with people, things, or some objectified aspect of the self. In the mastery state, one is focused on power and seeks to exert control within these interactions. Conversely, those who are in the sympathy state interpret these interactions as opportunities for giving and receiving affection or appreciation (Apter, 2007).

Autic and alloic. These metamotivational states relate to interpreting situational outcomes in terms of transactions with oneself or with others, where individuals who are concerned with the personal benefits of some situation are said to be in the autic state, and may disregard how the situation affects others. However, those who are in the alloic

state are concerned with how situational outcomes influence others, and often experience vicarious emotion through others' experiences (Apter, 2007).

Combining interactional states. The last two pairs of states are often combined to create *autic-mastery*, *autic-sympathy*, *alloic-mastery*, and *alloic-sympathy* states. This further specifies what individuals try to accomplish within their interactions, and how they act according to what outcomes they desire.

Autic-mastery and alloic mastery. While individuals who are in the autic-mastery state are concerned with attaining personal power, to exert control and benefit from others, those who are in the alloic-mastery state seek *vicarious power*. This is often attained by identifying with another individual or group who has more power than oneself (Apter, Mallows & Williams, 1998).

Autic-sympathy and alloic-sympathy. Autic-sympathy is mainly related to the attainment of personal affection through the need to be accepted, admired, or attractive to others. Individuals who are more alloic-sympathy oriented want to experience vicarious affection through caring for or sympathising with others. In this way, one can vicariously enjoy the pleasure the other person experiences from being cared for or given something (Apter et al., 1998).

Reversal theory and state dominance. While reversal theory is often employed in research to investigate one's state before, during, or after a given activity, many reversal theory researchers also use a measure to determine if someone displays *dominance*. This would be the case if a person preferred to be in a given state more often than its opposite. Some may rush to the assumption that this puts reversal theory on the same level as trait theories, which emphasize stability and consistency within each

individual. However, it is still quite different since the consistency acknowledged here (dominance) is used to put context to the inconsistencies experienced in everyday life (state reversals; Apter, 2007).

To explain the distinction between state dominance and traits, Apter (2007) uses the example of extroversion. When one is considered extroverted he or she is expected to be extroverted at all times, across all situations. However, simply because one tends to be in the telic state more often, does not mean that one will never be in the paratelic state. Individuals will still reverse between the two, with the same possible degree of intensity as anyone else who is in that state. So someone who is telic dominant, who reverses to the paratelic state, will not necessarily be any more or less activity oriented than someone who is typically in that state. There will always be shifts between these states, or "ways of being" (Apter, 2007), that keeps this theory separate from those focused on traits. It becomes more a matter of how often people reverse, and in what situations, than to the level of intensity of their experience in a particular state.

Reversal theory and risky behaviour. As mentioned previously, one of reversal theory's strengths is that it can help explain paradoxical behaviour such as risk-taking. According to Gerkovich (2001), most risky behaviours take place in the paratelic state when high-arousal situations are experienced as pleasant. Because people in this state are focused on the present moment, they are typically not concerned with the long-term consequences of their actions and therefore are more likely to engage in risky or dangerous activities. In addition to the paratelic state, the negativistic state is often implicated in risk research as well. Gerkovich also stated that these two are actually related in this context because individuals in the paratelic state will often use rebellion as

a way to increase arousal and excitement. For example, this may be seen in teenagers who have set out to enjoy a Friday night. In their quest for excitement, they may find that because of the illegal nature of stealing signs off of someone's property, or spray-painting a wall, these activities become more appealing.

Further to this is the idea of *protective frames*. A protective frame is a psychological construct defined by reversal theory as a 'frame' for viewing the world and interpreting experience (Gerkovich, 2001). When this frame is intact, it allows the individual to view risk or danger as a controllable aspect of their experience, and high arousal is experienced as excitement. However, if something occurs to violate that protective frame, the person will switch into the telic state, experience anxiety, and attempt to escape the situation. Gerkovich further described four risk-related *zones* that make up protective frames. One is in the *detachment zone* when one is a mere spectator of an activity and is not at any risk. The *safety zone* is experienced when an individual perceives no immediate danger. However, when there is a real and perceived threat to safety, but the person still feels relatively confident that nothing will happen, one is in the *danger zone*. If damage actually occurs, the person then enters the *trauma zone*. The *dangerous edge* is the moment when one slips from the danger zone into the trauma zone – the moment of injury or damage. The *safety margin* is used to explain the metaphorical distance between the individual's current zone and that dangerous edge (Apter, 1992; Gerkovich, 2001).

These theorized zones help explain the protective frames such that those who experience the *safety-zone frame* believe themselves to be safe from any threat of danger and no thought is given to what outcomes may occur. However, when someone is in the

confidence frame, he or she acknowledges and understands the risk associated with a given behaviour or activity, but feels confident in his or her ability to cope with that risk (Gerkovich, 2001). While the former may relate to some people's attitude of being 'invincible' – especially in adolescents and young adults – the latter may relate to the 'it won't happen to me' attitude, regardless of the level of risk. In this way, students who engage in pre-drinking (or other hazardous drinking patterns, for that matter) are likely to employ one of these protective frames as a way to increase the pleasant experience of arousal in risky situations. Because reversal theory has not been specifically studied in relation to pre-drinking, a discussion surrounding other risky behaviours will be used to help form the proposed hypotheses. Some behaviours specifically studied in relation to reversal theory are gambling (Anderson & Brown, 1987), adventure sports (Kerr & Houge Mackenzie, 2012), smoking (Burris & O'Connell, 2003; O'Connell, Cook, Gerkovich, Potocky, & Swan, 1990; Rosario-Sim, O'Connell, & Lavin, 2012), and substance use (Lafreniere, Menna, & Cramer, 2013; O'Neil, Craig, & Lafreniere, 2013).

Reversal theory and gambling. Anderson and Brown (1987) studied both the dominance and state reversals of 'normal' and addicted gamblers. They reported that gambling is most often entered in the paratelic state, and that people who are paratelic dominant will bet higher in order to obtain the desired level of arousal. However, the authors also stated that there is rapid switching between the telic and paratelic states, depending on whether the individual is winning or losing. In the telic state, the gambler has a clear goal of winning money. When one is winning, or has won more money than anticipated, a switch to the paratelic state is imminent. And if one continues to win, one will remain in the paratelic state and begin increasing bets in order to stimulate higher

levels of arousal and excitement. However, if one begins gambling for the enjoyment of the activity, but loses too much money, he or she is likely to switch into the telic state with the goal of recovering losses. Infrequent gamblers, when in the telic state for too long, or after reaching a goal, will choose to leave the gambling scene. Conversely, pathological gamblers often associate the high anxiety felt in the telic state (when losing) with the rewarding sense of excitement when they win and switch to the paratelic state. The authors suggest that the same arousal is reinterpreted, and therefore these people are more likely to continue gambling through distress, in order to obtain that perceived 'high' when they finally win.

Reversal theory and adventure sports. Kerr and Houge Mackenzie (2012) collected qualitative data from five participants who were all experts in their relative adventure sports (e.g., downhill mountain bike racing, and hang gliding). Through coding interviews for key themes, the authors were able to identify a set of motives for engaging in such sports. In terms of metamotivations, the telic state and dominance, along with conformity and autic-mastery were associated more highly with competition within these sports, as well as the work needed in order to learn and master them. However, the athletes' enjoyment of high-arousal situations within their sports was paratelic-oriented. For example, one participant explained that she enjoyed "Anything kind of exciting! Anything fast" (p. 654), and it was this paratelic-orientation that allowed her to experience thrill and excitement when engaging in downhill mountain bike racing. Another participant stated that she was mostly interested in doing something fun and challenging because she enjoyed being spontaneous and living in the moment. Even the hang-glider, who seemed to experience low-arousal for the most part, but high-arousal

when completing long-distance flights, did so for the enjoyment of the activity. He described his use of a protective frame and the practice of keeping himself within the limits of his ability, and also discussed a circumstance in which his protective frame was removed upon being "sucked up into clouds" (p. 655). This induced a reversal into the telic state, in which he used his skills to get him out of the dangerous situation. Once he realized he was safe again, the arousal previously felt as anxiety switched to back to excitement and he was able to reverse into the paratelic state and enjoy the flight.

Reversal theory and smoking. Previous research has examined the metamotivational states of adolescent and adult smokers who are tempted to relapse (Burris & O'Connell, 2003; O'Connell et al., 1990), as well as metamotivational states experienced during *first* smoking experiences in Asian American adolescents (Rosario-Sim et al., 2012). O'Connell and colleagues (1990) found that while adults were more likely to relapse while in the paratelic state, they were more likely to make an effort to obtain cigarettes if they were in the telic and negativistic states. They suggested that this could be because those who are in the paratelic states are prone to choosing environments in which cigarettes are readily available, or because the presence of available cigarettes causes the ex-smokers to switch to the paratelic mode. It is also possible that the nature of actively finding cigarettes to smoke is too much effort for someone who is in the paratelic state, and therefore there is an interaction between cigarette availability and metamotivational state.

In a study examining the same factors in adolescents, Burris and O'Connell (2003) found similar findings such that the telic and paratelic states, and cigarette availability accurately predicted the outcome of highly tempting situations; however, the

interaction between state and cigarette availability was not significant. The authors suggested that adolescents have less control over the availability of cigarettes and therefore, the availability of cigarettes was a significant predictor of relapse for adolescents in both telic and paratelic states. However, overall likelihood of relapse was, again, more likely in the paratelic state.

The most recent study examining reversal theory and smoking was conducted on a sample of Asian American adolescents in New York City (Rosario-Sim et al., 2012). However, this research was different than those already discussed such that they explored *initial* smoking experiences (actual, resisted, and imagined), rather than relapse temptations after having quit. These authors reported that adolescents who smoked a cigarette for their first time did so more often in the paratelic and negativistic states, consistent with the relapse literature. However, the states of these individuals did not differ significantly from those who resisted smoking; both adolescent smokers and resisters were more likely to be in the paratelic rather than the telic state. However, while the smokers reported relative ease of access to cigarettes, those who resisted believed cigarettes to be more difficult to obtain. This is a similar pattern to that identified by O'Connell and others (1990), where ex-smokers in the paratelic state, who did not have cigarettes readily available, were more likely to resist the temptation since smoking would require more effort than refraining.

Reversal theory and substance use. O'Neil, Craig, & Lafreniere (2013) studied reversal theory in relation to risky behaviour such as heavy drinking and drug use. An online questionnaire was distributed to 202 undergraduate students at a southwestern Ontario university. Correlational data showed that telic and negativistic dominance both

predicted overall risk, such that those with low telic dominance (i.e., those who were paratelic dominant) and high negativistic dominance were more likely to engage in risky behaviour. Moreover, telic dominance was the only significant predictor of all of the specific behaviours when examined separately; students with high telic dominance were significantly less likely to use drugs or engage in heavy drinking. In addition, autic-sympathy dominance was also positively correlated with alcohol consumption, suggesting that those with a desire to be accepted by others are more likely to engage in heavy drinking. This may be because of the popularity of drinking in college and university; those who want to be accepted will engage in similar activities to their peers.

Also in 2013, Lafreniere and colleagues examined adolescent risk taking behaviour in relation to reversal theory constructs. The authors stated that negativism was related to illicit drug use as well as heavy drinking such that those who reported greater rebelliousness were more likely to engage in these behaviours. Further, the authors reported that telic dominance was negatively related to heavy drinking, therefore indicating a positive relationship with paratelic dominance, similar to the previously mentioned findings by O'Neil and others.

These were the only known studies to specifically examine these constructs in relation to alcohol and drug use, and may have implications for pre-drinking as well. Because students who are goal-oriented and concerned with what others think of them, are less likely to engage in heavy drinking, it may be suggested that they also engage in less pre-drinking.

Proposing a relationship between reversal theory and pre-drinking. Rhoades and Maggs (2006) conducted a study attempting to predict planned alcohol use from the

subjective importance of students' academic and social goals. They suggested that alcohol use behaviour is planned to some extent, and that the decision to use alcohol may have an impact on the achievement of certain goals. What they found was interesting and helps build the basis for the proposed hypotheses, to be discussed later. Students who appraised academic goals as less important and more stressful planned to drink more often. Those students who valued social goals as more important also planned to drink more often, while those who reported social goals as being stressful or difficult to obtain, planned to drink less.

The idea of having goals and organizing one's behaviour around them has been addressed by reversal theory with metamotivational states. For example, people who are in the telic state are more serious minded and goal-oriented. This has been shown to relate to one's concern for the future consequences of their actions (Lafreniere & Cramer, 2006), a characteristic often evident in students who set more academic goals, and place greater value on them. Further, people who are in the autic-sympathy state generally seek the acceptance of others and may therefore place great value on their social goals. By making inferences about the relationships between the above research by Rhoades and Maggs (2006), with pre-drinking and reversal theory, a few suggestions can be made. Because pre-drinking is thought to be a planned behaviour, it may be that those who are in the autic-sympathy state plan to drink more, and therefore engage in more pre-drinking. Conversely, people who are in the telic state may be less likely to pre-drink because they are more serious-minded and focused on future goals.

Consideration of Future Consequences

The consideration of future consequences (CFC) is a time perspective construct that refers to the extent to which individuals consider and are influenced by the potential implications of their behaviour (Strathman, Gleicher, Boninger, & Edwards, 1994). For example, someone who smokes despite overwhelming evidence that it causes lung cancer and emphysema likely places little value on the future consequences of this behaviour. This is someone who would likely prefer to maximize immediate benefits (e.g., stress relief from smoking), and give little attention to the long-term consequences (e.g., cancer). However, when someone is confronted with a situation like this, where the short term consequences are beneficial, but the more distal effects are negative (or vice versa), they often engage in an intrapersonal struggle (Strathman et al., 1994). Through this, someone scoring higher in CFC would favour the distal effects, whereas someone scoring lower on CFC would favour the immediate effects, and both would govern their behaviour on this basis.

CFC factor structure and scale development. When Strathman and colleagues (1994) first established the construct and how to measure it (CFC – 12 item scale), they advocated for a one-factor structure, where high scores represented more consideration for distant outcomes. However, recent research suggests that there are actually two factors: consideration of immediate consequences (CFC-I), and consideration of future consequences (CFC-F; Joireman, Balliet, Sprott, Spangenberg, & Schultz, 2008; Petrocelli, 2003). A discussion of these recent developments will follow a brief explanation of the CFC within the time perspective research.

Future time perspective has been defined as "a general concern for future events" (Kastenbaum, 1962, p. 204; as cited in Strathman et al., 1994), but the measurement of this construct has been changing for years in an effort to obtain the best reliability and validity possible. Keough, Zimbardo, and Boyd (1999) included the CFC in their study examining risky health behaviours in relation to their time perspective measure called the Zimbardo Time Perspective Inventory, which included subscales for present- and future-time perspective (PTP and FTP, respectively). As identified in their correlation matrix, the CFC was significantly related to both of these subscales; in the negative direction for present-orientation, and positive direction for the future-orientation. However, they noted that these two subscales were not simply opposites of each other and differentially predicted behaviour. That is, Keough and colleagues reported that while the higher scores on their PTP subscale were related to more substance use, and the higher scores on the FTP subscale were related to less substance use, that controlling for FTP did not significantly weaken the relationship between PTP and substance use. Further, through conducting a regression, PTP emerged as the only statistically significant predictor, confirming that these two factors are independent of one another. While the authors did not separate the CFC into component subscales, the conclusions surrounding the Zimbardo Time Perspective Inventory may have implications for the CFC, indicating a need to separate the future and present-oriented items, and analyse them separately.

Petrocelli (2003) administered the CFC to 664 undergraduate students in human development courses at an American university. After completing both a principal-components analysis and a confirmatory factor analysis, two factors were discovered. The author did state, though, that one of these factors (CFC-F) had very low internal

consistency and that a measure using only the CFC-I, which had good reliability, might be best. However, he acknowledged that scoring low on this factor does not automatically indicate a concern for future consequences, just a lack of concern for the immediate ones. Later, Joireman and others (2008) established the utility of studying the two separate factors. They examined the CFC and its two subscales in relation to the construct of temporal discounting (the tendency to discount the value of future consequences), revealing a negative relationship with the CFC-F and a positive relationship with the CFC-I. This was the first evidence suggesting the importance of separating the two subscales, indicating that concern for immediate and future consequences are not opposites; rather they can coexist to different extents. Further, acknowledging the two-factor structure allows researchers to determine whether consideration of future of immediate consequences is more responsible for some given behaviour.

CFC and health behaviour. The CFC has been studied in relation to several different health behaviours, most of which are minimally related to the present research. For example, it has been suggested that those who score high on the CFC scale are more likely to exercise (Adams & Nettle, 2009), use sunscreen, eat breakfast, wear a seat-belt (Daughterty & Brase, 2010), and take actions to prevent future occurrences of past illnesses (Sirois, 2004). Further, those who give more consideration to future consequences are also less likely to use alcohol and tobacco (Adams & Nettle, 2009; Beenstock, Adams, & White, 2010; Daugherty & Brase, 2010).

CFC and alcohol use. The negative relationship between the CFC and alcohol use was not significant in the original study by Strathman and colleagues (1994). However, the authors noted that the actual long term effects of moderate alcohol use are

not well established. Because many people do not think they are doing harm to their bodies by drinking alcohol in lesser amounts or on few occasions, it makes sense why it would not be significantly related to one's consideration of future consequences. However, the scale was being treated as a single factor. It is suggested that by examining both immediate and future consequences, that there may be a greater relationship than was originally reported. It is possible that students regard their drinking in terms of more immediate, rather than distant outcomes. If this is true, those who engage in risky drinking behaviours may score high on the CFC-I, but not necessarily low on the CFC-F. This concept was also supported in the 1999 study by Keough and colleagues, in which the researchers found a differential ability of the present- and future-time perspective subscales to predict substance use. Although present time perspective was consistently and significantly related to substance use (where those more concerned with the present were more likely to report using alcohol, drugs and tobacco) future time perspective was not. Therefore, it could be predicted that the CFC-I is a better predictor of alcohol use, and pre-drinking, than the CFC-F.

In another study, of 322 undergraduate students in Northern England, Beenstock and colleagues (2010) further reinforced this idea. The authors reported that students with a higher consideration of future consequences were less likely to report hazardous alcohol consumption as measured by the Alcohol Use Disorders Identification Test (AUDIT). While they only used the composite-CFC score, and did not examine the two subscales separately, they did suggest that a decision to engage in heavy drinking may result from placing greater value on the positive short-term effects such as euphoria and the ability to temporarily escape from life's problems. Daugherty and Brase (2010) also examined the

CFC with other measures of future time perspective in relation to health behaviour such as alcohol use. They too, found that future-oriented people reported less alcohol use.

Proposing a relationship between CFC and pre-drinking. With the above research taken into account, it was proposed that the two subscales of the CFC will also show a differential relationship with pre-drinking behaviour. Because pre-drinking increases alcohol consumption, and is considered a hazardous form of drinking (Pederson & LaBrie, 2007), it is possible that similar relationships will emerge; such that those who are more concerned with the immediate outcomes of their behaviour, rather than the possible negative consequences of the future, engage in more frequent pre-drinking.

Consideration of Future Consequences and Reversal Theory

As previously mentioned, the current research considered both the CFC and reversal theory in relation to pre-drinking behaviour. To better help clarify the utility of using both concepts in the prediction and explanation of pre-drinking, the following discussion will focus on how they relate to each other.

Lafreniere and Cramer (2006) published the first known article specifically examining the relationship between reversal theory constructs and the CFC. Questionnaires were distributed to 136 undergraduate students in a Personality class at a university in south-western Ontario. The authors reported that the CFC was positively correlated with the reversal theory constructs of arousal avoidance, telic dominance, and autic-mastery dominance, which coincides with the conceptualizations of these variables. Telic dominant individuals tend to avoid anxiety-provoking arousal and are serious-minded with a focus on future goals. Further, autic-mastery is related to one's need to be

in control, and in this sense, the authors suggest that individuals may achieve this through careful consideration of long-term consequences of behaviour.

O'Neil and others (2013) also examined these constructs in relation to one another. However, they separated the CFC-I and CFC-F of the original measure and analysed them separately. It was reported that students with high paratelic and negativistic dominance were more concerned with the immediate consequences of their behaviour rather than the more distal outcomes. This is also intuitive because those who are in the paratelic state are present-oriented and prefer to live in the moment, often making consideration of the future obsolete.

The Present Research

The current study was designed to expand upon the previous literature on pre-drinking behaviour and motivations. Although previous studies have investigated specific reasons for and consequences of pre-drinking, the proposed research is the first attempt at examining these reasons in relation to a theoretical framework, and investigating the individual differences related to this behaviour. As stated above, the metamotivational states proposed by reversal theory may have implications in the field of alcohol use and more specifically, pre-drinking. Therefore, it is of significant interest to establish and support an explanation of pre-drinking using a reversal theory perspective. It is proposed that examining a theoretical framework for pre-drinking could help researchers understand the real factors and individual differences contributing to this behaviour.

Research aims. The principal goal of this research was to identify the reasons why Canadian students engage in pre-drinking, and how these reasons differ across

individuals, according to their metamotivational profiles and future orientation. Three research aims, along with a rationale for each is described below.

The first aim of the current research was to investigate the factor structure, validity, and reliability of the tool used to measure pre-drinking motivation. Responses from open-ended questions were compared with the existing measure of pre-drinking motivations. This inventory was also evaluated to determine if it is a complete and acceptable measure, which was then examined in relation to other variables.

The second aim for this research was to uncover an association between students' metamotivational profiles, future orientation, and pre-drinking behaviour. While there are likely more variables contributing to students' pre-drinking behaviour, this could provide the building blocks for a model of pre-drinking.

The final aim of the present research was to identify any existing differences in the pre-drinking frequency, behaviour, or motivations between students who are 19 years or older and those who are younger than 19. It has been suggested that students engage in pre-drinking because they cannot buy alcohol at parties or bars. However, the existence of legal-aged pre-drinkers in some previous research suggests that legal drinking age is not the only contributor. Because Canada has a legal drinking age of 18 or 19, depending on the province or territory, post-secondary students reach this age earlier in their college/university careers than do students in the United States. Because of-age pre-drinkers exist in the U.S., it is assumed that they also exist, potentially to a higher extent, in Canada. However, it is possible that students' reasons for engaging in this behaviour change with age, and thus this was also investigated in this study.

Research questions. The present research was designed to address three research questions. First, do students who are of legal drinking age differ from students who are not of legal drinking age, in their motivations for and frequency of pre-drinking? Second, is the current measure of pre-drinking motivations comprehensive, reliable, and valid? Lastly, how do pre-drinking motivations, future orientation and metamotivational profiles of students relate to pre-drinking behaviour?

Research hypotheses. Based on the above literature review, the following hypotheses were formulated:

Hypothesis 1a. It was predicted that students younger than the legal drinking age of 19 would report more pre-drinking than students who were older than 19.

Hypothesis 1b. Students under the age of 19 will report 'barriers to consumption' as a reason for pre-drinking more often than students over the age of 19.

Hypothesis 2. Consideration of immediate consequences will be a better predictor of pre-drinking behaviour than consideration of future consequences.

Hypothesis 3a. Students who demonstrate a higher consideration of future consequences will also report higher levels of telic dominance, and report less pre-drinking than those who are concerned more with the immediate consequences of their behaviour.

Hypothesis 3b. Students who are paratelic dominant will report more frequent pre-drinking, and consume more alcohol when pre-drinking than those who are telic dominant.

Hypothesis 4. Students who are telic dominant and autic-mastery dominant will more often pre-drink for reasons related to situational control, whereas those who are

paratelic and autic-sympathy dominant will pre-drink more often for reasons related to interpersonal enhancement and intimate pursuit.

Exploratory analyses. Metamotivational states were measured to capture and describe what state students are generally in during the pre-drinking event. Because there is no previous literature to support hypotheses, none were made. Gender differences were examined for all variables of interest. Further, the measure for pre-drinking motivations was assessed for validity, reliability, and proper factor structure. This measure has not been validated by any published research other than the original study, and therefore, this aspect was exploratory, as well.

METHOD

The main dependent variables were pre-drinking frequency, alcohol consumed while pre-drinking, alcohol consumed after pre-drinking, frequency of getting drunk while pre-drinking, and overall pre-drinking behaviour (created through the summation of the four previous variables). Additionally, drinking frequency, and typical amount of alcohol consumed on a drinking night were assessed, and summed to create a drinking behaviour variable. Pre-drinking motivations of interpersonal enhancement, situational control, intimate pursuit, and barriers to consumption were also treated as dependent variables, but in separate analyses from those listed above. Independent variables were telic dominance, negativism dominance, autic-mastery dominance, arousal seeking, CFC-I, CFC-F, age, and gender. All demographic variables were examined as potential covariates, and only included in analyses if they correlated significantly with the outcome variables.

Participants

Participants were recruited through the University of Windsor Psychology Participant Pool as well as through email and Facebook snowball sampling. While there were 255 participants from the University of Windsor, only 15 participants from Windsor community colleges participated, and preliminary independent samples t-tests indicated that these groups differed significantly on almost every variable of interest. Therefore, these 15 students were removed from the analyses.

The final sample consisted of 255 undergraduate students from the University of Windsor. The mean age of the final sample was 20.19 years (SD = 1.48), with 79 males, 166 females, two transgendered, and one participant who did not specify. The majority of

students (76.6%) identified as White/European, with 7.3% Middle Eastern, 3.6% East Asian, 2.8% Black/African/Carribean, 2.4% South Asian, .8% Latin American, .8% First Nations, 3.2% multiracial, and 2% "other". In terms of university education, 11.3% were in first year, 24.6% were in second year, 33.1% were in their third year, 25% were in fourth year, and 4.4% were fifth year or beyond. Further, most students were in good academic standing with 31% maintaining an average in the A-range, 51% in the B-range, 13.3% in the C-range, and .4% with an average of D or lower.

Of significant interest to the study, the prevalence of pre-drinking in the current sample was almost 92%, with 86% of underage students and 93% of legal-aged students reporting pre-drinking.

Participant compensation. Students who participated through the participant pool were awarded one-half of a bonus point toward an eligible psychology course. Participants recruited via snowball sampling were entered into a draw for one of four thirty dollar MasterCard® gift cards. The winners were contacted via email, to claim their gift cards.

Measures

Open-ended questions. The survey began with open ended questions to protect against any suggestive interferences that may have otherwise been caused by the other measures. For example, one measure outlined reasons for pre-drinking and asked the participants to indicate how often they engaged in pre-drinking for specific reasons. These open ended questions asked the participants to briefly explain their reasons for pre-drinking, if they engage in such behaviour, and their reasons for *not* pre-drinking if they do not. Those who endorsed pre-drinking were also asked to describe their most recent

pre-drinking experience, how long it had been since they last engaged in pre-drinking, what their reasons were, and whether they typically get *drunk* while pre-drinking (please see Appendix A).

Drinking/Pre-Drinking Behaviour Questions. These ten items were derived from a set of questions used in previous research by this author (O'Neil et al., 2013), to measure drinking behaviour in university students. In the current study, participants' drinking and pre-drinking behaviour were measured. The first four questions, related to drinking in general, were modified and repeated for *pre-drinking* rather than *drinking*. For example, "on average, how often do you consume alcohol?" was changed to "on average, how often do you engage in pre-drinking?" and both have response options of 1= once a year, 2 = a few times a year, 3 = monthly, 4 = weekly, and 5 = daily. Two extra questions were added to gain a better understanding of what happens on pre-drinking nights; "how often do you get drunk while pre-drinking, before you go out?" (1 = never, 2 = not usually, 3 = sometimes, 4 = usually, 5 = always) and "how many drinks do you typically consume at the main event, after pre-drinking?" (1, 2, 3, 4, 5 or more; please refer to Appendix B).

Retrospective Pre-Drinking Metamotivational State Measure (RPMSM). This measure was developed for the purpose of the current study, informed by theoretical constructs from RT and an examination of existing measures of reversal theory states (O'Connell & Calhoun, 2001). This scale was used to determine what state the participants were in during their most recent pre-drinking experience. It consisted of 16 items scored on a five-point Likert scale ranging from "strongly disagree" to "strongly agree". As shown in Appendix C, the questionnaire is prefaced with "The last time I

engaged in pre-drinking…" and example items include "I was concerned about the future effects of my drinking" and "…I just wanted to have fun". This was used in a purely exploratory fashion.

Motivational Style Profile (MSP; Apter, Mallows & Williams, 1998). The MSP is a 70 item measure scored on a six-point Likert scale ranging from "never" to "always" (refer to Appendix D). Eight subscales measure the extent to which individuals tend to favour each of the RT states (i.e., telic/paratelic, negativism/conformity, mastery/sympathy and autic/alloic). Dominance scores were derived by subtracting each state score from its opposite (i.e. subtracting the paratelic score from telic score to obtain telic dominance). Further, the autic/alloic pair were examined in combination with mastery/sympathy to determine dominance scores for autic-sympathy and autic-mastery, as supported by Apter, 2007. Previous investigations reported adequate concurrent validity and test-retest reliability with correlations ranging from .61 to .92 (Apter et al., 1998). Adequate internal consistency reliability was determined to be adequate ($\alpha \geq .70$), with the exception of the conformity ($\alpha = .48$), autic-mastery ($\alpha = .69$), and arousal avoidance ($\alpha = .65$).

Consideration of Future Consequences (CFC; Strathman et al., 1994). This measure (as shown in Appendix E) has twelve items scored on a seven-point Likert scale ranging from "extremely uncharacteristic of me" to "extremely characteristic of me", to assess the extent to which one thinks about the more distant future consequences of their actions, as opposed to more immediate ones. An example of one item states "I think it's important to take warnings about negative outcomes seriously, even if the negative outcome will not occur for many years." Strathman and colleagues (1994) reported that

construct validity was adequate by correlating the CFC with a deferment of gratification scale (r = .47), and test-retest reliability showed a correlation of r = .76, which is acceptable. Further, internal reliability was assessed in the present study using Cronbach's alpha, and was adequate for the CFC-I (α = .82), CFC-F (α = .70), and the entire CFC scale (α = .82).

Prepartying Motivations Inventory (PMI; LaBrie, Hummer, Pederson, Lac & Chithambo, 2012). The PMI was developed as a means of measuring the factors that motivate adolescents and young adults to engage in pre-drinking. It consists of four subscales measured with sixteen items on a five-point Likert scale ranging from 1 = never/almost never to 5 = almost always/always. The four subscales, interpersonal enhancement (IE), situational control (SC), intimate pursuit (IP), and barriers to consumption (BC), showed adequate internal consistency reliability with Cronbach's alpha ranging from .75 to .88. This survey was modified to say "pre-drinking" rather than "pre-partying" to eliminate any confusion from the respondents. The entire inventory was prefaced with "for what reasons do you typically pre-drink?" and example items include "to meet a potential dating partner during pre-drinking" and "to relax or loosen up before I go out" (please see Appendix F).

Demographics. Participants were also asked about their age, sex, ethnicity, and education for the purpose of collecting descriptive information about the sample (refer to Appendix G).

Procedure

The questionnaire was created using FluidSurveys, and posted online for ease of participation. FluidSurveys stores data collected within Canada, ensuring that it can only

be accessed by the survey creators. When participants signed up for the study through the Participant Pool, they were given a direct link to the survey. If they were recruited through snowball sampling, they were given the URL in an email.

All recruitment material, including the participant pool ad, indicated that participants must be between the ages of 17-23, and have consumed alcohol within the past 30 days. This helped ensure data was only gathered from the sample of interest. The first page of the survey contained a letter of information acting as a consent form. It explained the purpose of the study, what was expected of the respondents if they chose to participate, confidentiality, and provided contact information for the researcher. Participants were encouraged to print the form for future reference. Participants were asked to indicate if they wish to continue with the survey or not. If they disagreed, they were redirected to a thank you page, and dismissed from the survey. If they decided to move forward, this was taken as their consent and they then completed a series of measures (see Appendix H and I for the consent forms). A note also appeared before the first question to help promote honest responding. This note reminded students that their name could not be associated with their responses, and that there were no consequences associated with the survey.

At the end of each page, there was an option to continue or exit the survey. Those who exited early were not awarded any compensation. If participants wished to be awarded compensation, they needed to complete the entire survey, though they had the option to skip questions they did not feel comfortable answering (outlined in the informed consent). The entire process took approximately thirty minutes and participants were thanked for their participation and asked if they would like to receive compensation.

If they chose to do so, they were redirected to another Fluid Surveys database to enter their name for a bonus point, or email address for the draw. Participants were informed that they were entering a new survey that was not connected to the database storing their questionnaire responses. In this way, their identifying information could never be linked with their responses. After they entered their personal information, they were taken to a final thank you page, and given a list of alcohol-related resources (e.g., Don't Be That Guy/Girl). Individuals who chose *not* to enter their information were automatically routed to this page. Appendix J shows what participants saw when they reached this point.

RESULTS

Approach to Data Analysis

Qualitative Data Analysis

First, all qualitative responses related to reasons for pre-drinking were coded for common themes, and a thematic analysis was completed. Guidelines recommended by Braun and Clarke (2006) were used to (1) become familiar with the data, (2) generate initial codes, (3) search for themes, (4) review themes, (5) define and name themes, and (6) produce the final report. Both inductive as well as theoretical approaches were taken to code the data with a semantic approach, such that no assumptions were made about responses, and themes were identified by looking at exactly what the participant wrote. The primary goal of this analysis was to determine if there are themes not identified by the PMI, which may help explain why students engage in pre-drinking. First, the themes from the PMI factors interpersonal enhancement, intimate pursuit, barriers to consumption, and situational control, were identified within the data and highlighted as such. This was done by closely examining each item within the factors on the PMI and determining which responses mapped onto these items the best. Then the data were revisited to code responses for themes not addressed by the PMI. It was possible for participants' responses to map onto one theme, many of the themes, or not map onto any, and prevalence within the themes was determined by counting the number of participants whose responses included each theme. Finally, individual extracts were identified and used to bring context to, and give an example of each theme.

Quantitative Data Analysis

All statistical analyses were conducted using SPSS version 20.0, and Amos Graphics version 21.0 for Windows. A missing values analysis was performed on all numerical data within the study, followed by a descriptive analysis of the sample as well as variables of interest. A confirmatory factor analysis was conducted to determine the factor structure of the PMI, and then qualitative themes were compared to this measure to determine the possible need for other items or subscales. Hypotheses were tested using Pearson's correlational analyses, independent samples t-tests, and simple regression, and models of both drinking and pre-drinking behaviour were developed using hierarchical multiple regression analysis (MRA).

Preliminary Data Considerations

The data of all 255 participants were first inspected for incomplete or non-serious responding by examining the completion time from FluidSurveys, which provides information on how long students took to complete the survey. Participants with completion times below ten minutes were inspected further because while it is expected that some participants are quicker responders than others, ten minutes was considered very fast and may have indicated incomplete or non-serious responding. Four cases were removed for completing less than half of the survey. Two additional cases were removed for non-serious responding by identifying response batches where participants entered the same value for several items in a row. Finally, one more case was removed because the participant reported never having consumed alcohol. After these cases were removed, a total of 248 cases were retained for subsequent analyses. It was also acknowledged that because of technical difficulties with FluidSurveys during the first round of data

collection, 26 participants who reported pre-drinking were inadvertently routed around the questions related to pre-drinking behaviour, as well as the retrospective pre-drinking metamotivational state measure. Because of this, these participants were not included in the analysis of pre-drinking behaviour. However, they were included in analyses of drinking behaviour as well as the confirmatory factor analysis and thematic analysis.

Missing values analysis (MVA) was performed on all data within each subscale. The percentage of missing values for items within the MSP and CFC subscales ranged from 0 to 2%, and was determined to be missing completely at random (MCAR) by Little's test for MCAR. The missing values percentage for the RPMSM ranged from 0 to 1.5%, and was also MCAR. Within the PMI, subscales for interpersonal enhancement, situational control, and intimate pursuit contained 0 to 0.9% missing data, all determined to be MCAR. However, the subscale for barriers to consumption contained 0 to 1.8% missing data and was not MCAR [$\chi^2(5) = 15.73$, $p = .008$]. These cases were investigated for patterns, and the data were determined to be missing at random (MAR). In all cases, expectation maximization was used as a method of imputing missing values. This method circumvents problems related to decreased variance common within other imputation methods such as mean-substitution (Tabachnick & Fidell, 2007*)*.

Descriptive Analysis

Internal consistency of all scales and subscales was assessed using Cronbach's alpha, and all measures were found to show adequate internal consistency, except those for conformity ($\alpha = .48$) and arousal avoidance ($\alpha = .65$) from the MSP. Descriptive statistics including means, standard deviations, and reliabilities for all measures are provided in Table 1.

Table 1.

Descriptive statistics for all subscales.

Subscale	*n*	Mean	SD	α
PMI	226			
Interpersonal		18.25	5.94	.88
Situational Control		9.97	4.00	.75
Barriers to Consumption		5.31	2.85	.76
Intimate Pursuit		5.11	2.58	.81
CFC	248			
Immediate		23.01	8.82	.82
Future		25.89	5.42	.70
Total		58.81	12.01	.82
MSP	248			
Telic		22.22	4.22	.80
Paratelic		19.18	3.53	.72
Negativism		12.09	4.16	.77
Conformity		19.28	3.05	.48
Autic-mastery		17.96	3.79	.69
Autic-sympathy		18.89	4.35	.80
Alloic-mastery		22.00	4.02	.86
Alloic-sympathy		22.86	3.64	.80
Arousal Avoid		19.85	3.53	.65
Arousal Seek		19.01	4.06	.81
Pre-Drinking Behaviour	200			
Overall pre-drinking		12.17	4.04	.75

Assumptions of Statistical Analyses

All assumptions for independent samples t-tests, Pearson's correlation and MRA were assessed prior to the main data analyses. It is suggested that all variables should be normally distributed (Cohen, 1996), and absent of outliers. The assumption of absence of outliers was examined before normality was inspected because removing outliers may improve the distribution. The data were first examined for univariate outliers within each variable, using scatter and box plots as well as z-scores. To reduce the impact of univariate outliers, and limit data loss, scores beyond $z = |3.29|$ were Winsorized. Winsorization minimizes the effect of these outliers by replacing extreme raw scores with the next acceptable value, maintaining the idea that all populations may have somewhat extreme values on some variables. Winsorized data accounted for between 0 and 4.4% of the data across variables. Univariate outliers were detected and Winsorized for telic dominance (1.6%), negativism dominance (.81%), autic-mastery dominance (1.2%), alloic-mastery dominance (2.42%), consideration of future consequences (3.6%), consideration of immediate consequences (.4%), and the PMI subscales for intimate pursuit (4.4%) and barriers to consumption (4.4%).

Further, multivariate outliers were assessed for each regression analysis. Outliers on independent variables were identified using leverage and Mahalanobis distance. While there were five cases identified as exceeding the chi-square cut-off with a *p*-value of <.01, MRA is assumed to be robust to this assumption, and therefore these values were left in the data for the subsequent regressions. Outliers on dependent variables were identified using deleted studentized residuals. One outlier for overall pre-drinking behaviour was found, and was determined to lower the R^2, and change the significance

values for the final solution, so this case was removed from the following regression analysis. No influential observations were detected using Cook's distance and DFfit values, and therefore all remaining cases were retained.

The assumption of normality was examined using histograms, standardized scores for skewness and kurtosis, as well as the Kolmogorov-Smirnov (*KS*) and Shapiro-Wilk (*SW*) statistics (Field, 2009). While all skewness and kurtosis values were within range, the *KS* and *SW* tests were both significant for most variables. However, because MRA is considered to be quite robust to violations normality (e.g. Osborne & Waters, 2002), and in order to retain the integrity of the data within this sample, the data were not transformed.

Next, the residual plots were inspected for patterns relating to heteroscedasticity and linearity. The residuals were randomly scattered with no funnel patterns, and the assumptions of linearity and homoscedasticity were assumed. The assumption of multicollinearity was measured with the variance inflation factors (VIF), and bivariate correlations. Absence of multicollinearity was concluded, as all variables remained within the cut-offs for VIF > 10 (Field & Miles, 2010), and no variables were correlated above $r = .90$ (see matrix of zero-order correlations in Table 2).

Stevens (2002) suggests that in order for the sample size to be sufficient, there should be at least 15 observations to every one predictor. The current sample satisfied this rule with 50 cases: 1 predictor ($N = 202$, $k = 4$) for one MRA, and 39:1 ($N = 238$, $k = 6$) for the second MRA. Finally, the Durbin-Watson test was conducted for each regression to evaluate independence of errors, which was also determined to be acceptable.

Table 2.

Zero-order correlations for variables of interest.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Drinking Behaviour	-																	
2 Pre-drinking Frequency	.71	-																
3 Drinks consumed while pre-drinking	.71	.49	-															
4 Drinks consumed at main event	.58	.39	.45	-														
5 Frequency of getting drunk while pre-drinking	.61	.55	.72	.25	-													
6 Pre-drinking Behaviour	.83	.71	.88	.72	.79	-												
7 CFC-I	.21	.17	.14	.21	.15	.21	-											
8 CFC-F	-.16	-.08	-.06	-.11	-.03	-.09	-.41	-										
9 Telic Dominance	-.33	-.26	-.18	-.21	-.20	-.27	-.54	.47	-									
10 Negativism Dominance	.20	.23	.22	.27	.09	.26	.37	-.25	-.41	-								
11 Autic-Mastery Dominance	-.11	-.06	.05	.08	-.11	.004	-.16	.22	.23	.10	-							
12 Alloic-Mastery Dominance	.05	.10	.07	.11	.01	.09	-.04	.08	.03	.10	.20	-						
13 Autic-sympathy	.07	.10	.01	-.05	.18	.06	.15	-.01	-.05	-.06	-.65	-.10	-					
14 Arousal seeking	.25	.25	.20	.21	.22	.28	.22	-.03	-.32	.30	.16	.10	.21	-				
15 Interpersonal Enhancement	.37	.35	.32	.21	.43	.41	.29	-.05	-.22	.07	-.25	.06	.44	.34	-			
16 Situational Control	-.02	.02	-.04	-.05	.10	-.00	.10	.09	-.05	-.06	.02	.03	.10	.18	.27	-		
17 Intimate Pursuit	.17	.19	.11	.20	.12	.20	.39	-.13	-.32	.31	-.10	.10	.30	.24	.49	.17	-	
18 Barriers to consumption	.11	.08	.06	.12	.13	.13	.29	-.04	-.21	.16	-.04	.06	.12	.16	.29	.48	.34	-

Note. rs $\geq .22$ ($p < .001$), rs = .18 to .21 ($p < .01$), rs = .14 to .17 ($p < .05$), rs $\leq .13$ (*ns*)

Main Data Analyses

Factor Structure of the PMI

Several steps were taken when conducting this confirmatory factor analysis. First, an adequate model was attained and tested for invariance, model refinement was considered, and then the final model was validated. First, means, standard deviations, and bivariate correlations were run for each item on the PMI. An outline of these findings can be found in Table 3. Then, the initial model proposed by LaBrie and colleagues (2012) was tested using Amos Graphics v.21. Goodness of fit results for this model can be found in Table 4. Because the fit indices did not meet the cut-offs as defined by Hu and Bentler (1999), and the modification indices for four IE item error terms exceeded the threshold of 20, these error terms were allowed to covary. Errors for item 4 ("to pump myself up to go out") and item 5 ("because having a few drinks before going out makes the night more interesting") were covaried, as well as those for item 9 ("it makes talking to new people easier") and item 10 ("it helps me feel more relaxed when meeting new members of the opposite sex"). While it is not recommended to covary error terms (Boomsma, 2000), the subject matter of these questions is similar enough to support a potential for common variance (Jackson, Gillaspy & Purc-Stephenson, 2009). New fit indices show that this four-factor structure was a better fit than the previous model, with a slight decrease in RMSEA, and the maintenance of regression weights >.5 (Stevens, 2002), which can be found in Table 5. It is acknowledged that the chi-square value is still significant, but because this statistic is heavily influenced by large sample sizes, it is unlikely to become non-significant. Therefore, other goodness of fit indices were observed and included in the results, found in Table 4.

Table 3.

Means, standard deviations and correlation matrix for PMI items, grouped according to factor

	Mean	SD	4	5	6	7	9	10	8	14	15	16	3	12	13	1	2	11
4	3.30	1.24	-															
5	3.38	1.20	**.62*****	-														
6	2.54	1.26	**.42*****	**.51*****	-													
7	3.38	1.20	**.51*****	**.62*****	**.54*****	-												
9	3.00	1.29	**.42*****	**.61*****	**.54*****	**.63*****	-											
10	2.64	1.35	**.39*****	**.53*****	**.56*****	**.54*****	**.74*****	-										
8	2.35	1.21	.09	.11	.22**	.21**	.18**	.16*	-									
14	2.37	1.31	.14*	.20**	.19**	.22**	.17*	.18**	**.47*****	-								
15	2.29	1.41	.09	.10	.21**	.14*	.17**	.15*	**.40*****	**.64*****	-							
16	2.96	1.33	.21**	.14*	.18**	.13*	.13*	.13*	**.25*****	**.40*****	**.44*****	-						
3	1.39	.95	.15*	.03	.18**	.05	.04	.09	.04	.23**	.23***	.11	-					
12	2.12	1.23	.18*	.21**	.28***	.16*	.15*	.16*	.25***	.46***	.39***	.347***	**.41*****	-				
13	1.80	1.26	.22**	.26***	.33***	.24***	.23**	.24***	.24***	.48***	.37***	.224**	**.57*****	**.57*****	-			
1	1.54	.89	.24***	.15*	.36***	.32***	.29***	.41***	.24***	.22**	.17**	.129	.24***	.20**	.29***	-		
2	1.77	.95	.26***	.23***	.33***	.35***	.29***	.47***	.06	.13	.10	.016	.12	.10	.20**	**.68*****	-	
11	1.80	1.17	.26***	.32***	.41***	.29***	.39***	.53***	.04	.12	.06	.067	.15*	.22**	.34***	**.56*****	**.59*****	-

Note. Bold font indicated items belonging to the same factor.
**p* < .05, ***p* <.01, ****p* < .001

Table 4.

Goodness of fit indices for each CFA model.

Model	χ^2	*df*	*p*	χ^2/df	CFI	RMSEA
Initial Model	249.87	98	<.001	2.55[a]	.90	.083
New Model with error respecification	202.34	96	<.001	2.11[a]	.93[a]	.070[a]

Note. RMSEA = Root mean square error of approximation, ≤.06 good fit, .06→.08 reasonable fit, ≥.10 poor fit (Hu & Bentler, 1999). CFI = Comparitive Fit Index, ≥.95 (Hu & Bentler, 1999), ≥.90 (Bentler, 1990). χ^2/df = chi-square to degrees of freedom ratio, <5 good fit (1→3 best).

[a] statistic indicating adequate fit according to recommendations above.

Table 5.

Standardized and unstandardized regression weights for each CFA model.

Items		Factor	Initial Model		Final Model	
			Unstandardized (error)	Standardized	Unstandardized (error)	Standardized
10	It helps me feel more relaxed when meeting new members of the opposite sex.	Interpersonal Enhancement	1	.79	1	.73
9	It makes talking to new people easier		1 (.08)	.83	1.02 (.07)	.78
7	To relax or loosen up before I go out		.87 (.07)	.77	.96 (.09)	.79
6	To meet new friends once I go out		.82 (.08)	.70	.90 (.09)	.71
5	Because having a few drinks before going out makes the night more interesting		.84 (.07)	.74	.89 (.09)	.74
4	To pump myself up to go out		.70 (.08)	.60	.74 (.09)	.59
16	So I don't have to drink at the place where I'm going	Situational Control	1	.50	1	.50
15	So I don't have to worry about whether someone has tampered with the drinks at a party		1.6 (.23)	.76	1.60 (.23)	.76
14	So I have control over what type of alcohol I consume rather than relying on what's available at the destination		1.67 (.24)	.85	1.67 (.24)	.85
8	To enjoy my favourite drink in case the place I am going does not serve that drink		.97 (.17)	.53	.97 (.17)	.53
13	To avoid getting caught with alcohol on the way to, or at the final destination	Barriers to Consumption	1	.88	1	.88
12	Because alcohol may not be available or may be hard to get at the destination		.74 (.08)	.67	.74 (.08)	.67
3	Because I am underage and cannot purchase alcohol at the destination venue		.53 (.06)	.61	.52 (.06)	.61
11	To increase the likelihood of hooking up	Intimate Pursuit	1	.73	1	.73
2	To meet a potential dating partner once I go out		.91 (.09)	.82	.92 (.09)	.82
1	To meet a potential dating partner during pre-drinking		.83 (.08)	.80	.83 (.09)	.80

Once an adequate model was attained (Figure 1) invariance tests were completed with groups split according to age and gender. Using the critical ratios for group differences, and evaluating z-scores, the data were determined to be metrically invariant. Because of this, no changes were made to the data, and the model was not refined.

Lastly, this final model was assessed for reliability and validity. A factor correlation matrix can be seen in Table 6. Composite reliability (CR), convergent validity, and discriminant validity were all determined to be adequate (please refer to Table 7.) In addition, Cronbach's alpha is reported in the descriptives table (Table 1), and was also considered adequate.

Thematic Analysis of Reasons for Pre-drinking

Overall, 226 cases were examined for the thematic analysis. First, the themes related to the PMI were coded for and occurrences were counted. While interpersonal enhancement was a highly endorsed reason for pre-drinking within the qualitative data (54 participants, or 24% of the sample reporting these reasons), barriers to consumption was only reported by ten participants (4%), situational control by five (2%), and reasons for intimate pursuit were not reported at all.

Interpersonal enhancement was represented by a variety of responses, all mapping onto the items within the subscale of the PMI. These participants use pre-drinking as a social lubricant such that it helps them relax, and mentally prepare for partying and socializing with people they may not know.

> "…to not be nervous attending parties or events where I feel uncomfortable or don't know many people. It is sometimes easier talking to people at these types of gatherings when you get a little bit of the confidence from drinking."

Figure 1.

Final model for the prepartying motivations inventory.

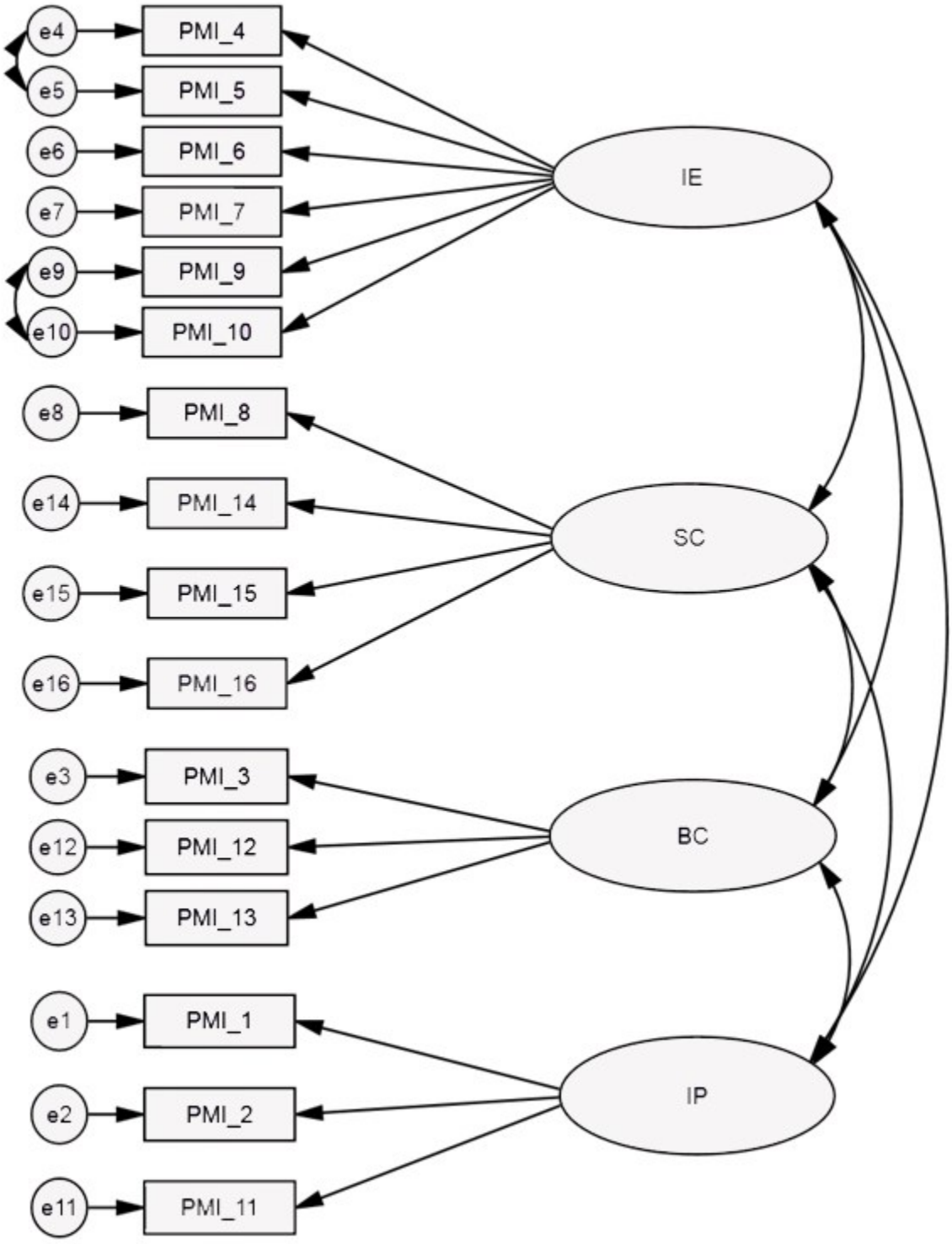

Table 6.

Factor correlation matrix with square root of AVE on diagonal, for final model.

	BC	IE	SC	IP
Barriers to Consumption	.73			
Interpersonal Enhancement	.36	.73		
Situational Control	.61	.31	.68	
Intimate Pursuit	.37	.55	.22	.78

Table 7.

Composite reliability, convergent validity, and discriminant validity for final PMI four-factor model

	CR	AVE	MSV	ASV
Barriers to Consumption	.77	.53	.37	.21
Interpersonal Enhancement	.87	.53	.30	.18
Situational Control	.76	.46[a]	.37	.17
Intimate Pursuit	.83	.62	.16	.16

Note. Hair, Black, Babin, & Anderson recommend the following guidelines: CR > .07, CR > AVE, AVE > .5, MSV < AVE, ASV < AVE (Hair, Black, Babin, & Anderson, 2010).

[a] While AVE < .5 for SC, CR>AVE, and the factor loadings all remain >.5 (Stevens, 2002), so convergent validity was determined to be adequate

Responses such as "getting into the partying mindset" and "makes going out more enjoyable" were also considered to support this theme as they support the idea of enhancing the interpersonal experience of going out. In addition, items that were not originally included in this theme, such as "…attaining a less stressed mental state" and "[i]t augments my feelings (makes me happier, more sad, or even more mad)" were later incorporated into this theme. Even though they first seemed to focus more on the self and personal feelings, it was later thought that these personal changes students wish to experience through drinking, probably serve to enhance interpersonal encounters. Some items related to these responses may be added to the PMI to see if they indeed map onto the factor for interpersonal enhancement, and if they help improve the overall model.

The theme of barriers to consumption captured the apparent need for students to consume alcohol even though they could not obtain it at the main event; "No drinking at the facility I was attending with friends. We thought pre-drinking will solve our problem to having fun." Other responses categorized under this theme ranged from "it's hard to get hands on alcohol" to "some people in the group were underage". However, all responses were related to ensuring some level of intoxication before ceasing or minimizing consumption for the night.

Even though situational control was only reported by five students within the qualitative responses, it was still examined as a theme because of the evidence from previous research. This theme identified respondents need to control the situation in which they drink to (a) minimize the likelihood of drink-tampering, (b) ensure they are able to choose what they drink, and/or (c) avoid drinking at the final destination altogether. Participants' responses included "we like mixing our own drinks and sharing

them with each other", "to drink in a controlled environment with people we trusted", and "to consume most of my alcohol before hand [sic] so that I do not have to carry it around at the party." All of these clearly support the idea of controlling the situation in which students were drinking.

Next, a common theme of *monetary concern* was identified. More than half of participants (54%) reported reasons related to saving money. As one participant stated, "drinking can be expensive when you go out, so rather [sic] have a few drinks before I go out with friends." This theme was the most highly endorsed within this sample, however it was also considered to be unidimensional such that the variability in responses regarding 'saving money' was quite minimal. In this respect, it would probably be best addressed with a single item, should it be included in future questionnaire development.

Another common theme identified was entitled *socialization*, which was reported by 70 (31%) participants. The name may insinuate a relationship with interpersonal enhancement because both themes are socially oriented; but while the two may be related in some way, it is not possible to determine that from the current data. This socialization theme really summarizes students' desire to spend time with close friends before going somewhere students may be faced with more superficial encounters, and meeting new people. One student explained that "it's more fun to drink with a smaller group of friends because you can play games while drinking" and another reported "having some fun with close friends before going out and getting separated". Other responses included within this theme included celebrating birthdays and significant achievements of oneself or one's friends or family (e.g., "its [sic] usually towards a celebration, or accomplishment". These were all deemed separate from interpersonal enhancement because these

participants were reporting wanting to spend time with people they already know, rather than relaxing or meeting new people. This does not imply that these two themes are mutually exclusive, rather they are distinctly separate.

The next most prevalent theme, evident in 50, or 22% of cases, was given the name *inebriation*. Many students reported that they enjoyed drinking alcohol, getting buzzed, reaching intoxication more quickly, and even the taste of alcohol. Responses related to these ideas were grouped together because they all relate directly to alcohol and intoxication rather than any social, control, or monetary reasons. While many students reported reasons similar to "[t]o have a good buzz before you leave" and "I like getting drunk", other students explicitly stated the desire to reach intoxication more rapidly; for example, one student reported that pre-drinking "...allows for rapid intoxication to last through the party" and another stated that he chooses to partake "…so you don't wait till [sic] it's too late to get drunk and end up slamming a bunch of shots or funnelling or something before the bar and getting sloppy." All responses within this theme clearly identify the desire to consume alcohol either for the pure enjoyment of drinking, or becoming inebriated.

Peer influence was a theme identified by merging similar responses related to feeling pressure from others, or wanting to fit in. While some responses included within this theme were quite vague, such as "mostly influenced from friends" and "peer pressure to party", others were very specific and caused some concern. It was evident that some students *only* pre-drink because of what they believe to be social/peer pressure. One student explicitly stated "I feel included in the plans if I too am pre-drinking with everyone else" while another said "I mostly don't drink, but I couldn't really say no".

Further, the participant who really stood out with respect to peer influence reported that "I mostly just hold onto the drink and take sips of it as I don't like alcohol that much, but having some does help me feel more socially accepted when in social situations when everyone is drinking". While there were only 25 cases (11%) in which peer influence was mentioned, this theme incorporates implicit as well as explicit pressure to engage in a risky behaviour some students might otherwise avoid, and it would be worthwhile to include this theme in future research.

The final theme extracted from these data was almost named "for lack of a better idea", but was instead entitled *boredom relief* and was identified in 22 (10%) of cases. This theme captured the essence of boredom and not having anything else to do, from the perspective of the respondents. Examples included "just something to do while waiting to go out", "to pass a little bit of time", "boredom", and "no real reason". All of the responses identified as falling under this theme indicated that pre-drinking wasn't really something these students thought about, rather they participated because they didn't have any alternative (and also attractive) options.

Overall, eight themes emerged from the qualitative data when students were not given any prompts, or pre-exposed to possible reasons as outlined in the PMI. These themes include interpersonal enhancement, barriers to consumption, situational control, monetary concern, socialization, inebriation, peer influence, and boredom relief. Based on these results, suggestions for future research are made in the discussion section.

Age Group Differences

In order to test hypotheses 1a and 1b, t-tests measured the differences in pre-drinking behaviour and frequency between students who were above and below the legal

drinking age in Ontario. First, students were divided into two groups according to age, with 218 students reporting ages of 19 or older (203 of them pre-drinkers), and only 29 students reporting being underage (25 pre-drinkers). Levene's test for equality of variances was considered for each t-test, and if this was significant the adjusted *df* and t-statistic were used.

Hypothesis 1a predicted that older students engage in less pre-drinking than younger students. There was a significant effect, $t(199) = 2.60$, $p = .010$, but not in the anticipated direction; with students 19 and older actually engaging in pre-drinking more often, and also engaging in riskier pre-drinking overall, $t(199) = 2.79$, $p = .006$, such that older students pre-drank more often, and consumed more alcohol on nights of pre-drinking than underage students did. This did not support the hypothesis. To qualify this finding, differences in general drinking behaviour were examined for these groups. It was found that underage pre-drinkers reported a lower frequency of drinking in general, $t(225) = 2.53$, $p = .01$, but did not differ in the amount of alcohol consumed during each drinking occasion. Further, the group of legal-aged students was also split into groups of 19-20 year-olds and 21-23 year-olds, to see if differences existed within this older group; no significant differences were found.

Hypothesis 1b suggested that students who were under the legal drinking age would report barriers to consumption as a reason for pre-drinking more often than students over the age of 19. The Levene's test for this analysis was significant, $F(1, 224) = 13.17$, $p < .001$; thus, the adjusted t-test results were interpreted. In support of this hypothesis, there was a statistically significant effect of age, $t(25.98) = 5.0$, $p < .001$,

where students who had not yet turned 19 reported barriers to consumption more often than those students older than 19.

Predictive Ability of the Consideration of Future Consequences

Hypothesis 2 predicted that the subscale for consideration of immediate consequences would be a better predictor of pre-drinking behaviour than the consideration of future consequences. To test this hypothesis, the Pearson *r*'s were first analyzed. CFC-F was not significantly correlated with pre-drinking behaviour, $r = -.09$, $p = .211$, $n = 202$, but a statistically significant relationship between CFC-I and pre-drinking behaviour was observed, $r = .21$ $p = .002$, $n = 202$. Given these correlations, the hypothesis was supported and there was no need to continue with a regression for the CFC-F. However, the predictive ability of the CFC-I was still of interest, and as such a simple regression was completed. CFC-I was determined to be a significant predictor of pre-drinking behaviour, $\beta = .21$, $t(200) = 3.09$, $p = .002$. CFC-I also explained a significant proportion of the variance in pre-drinking behaviour, $R^2 = .045$, $F(1, 200) = 9.52$, $p = .002$. Though, it should be noted that this only accounts for 4.5% of the variance, and other predictors will be examined in the final model of pre-drinking behaviour in the hierarchical regression analysis section.

Profile of Heavy Pre-drinkers

Hypothesis 3a suggested that the CFC-F would correlate positively with telic dominance and negatively with pre-drinking frequency, while hypothesis 3b predicted that paratelic dominance would correlate positively with pre-drinking frequency and alcohol consumption during pre-drinking. When Pearson's *r* correlations were analyzed, it was determined that there was a statistically significant positive correlation between

CFC-F and telic dominance, $r = .47$, $p < .001$, $n = 248$ (in support of the hypothesis), but contrary to the hypothesis, the CFC-F and pre-drinking frequency were not significantly related, $r = -.08$ $p = .27$, $n = 202$. There was, however, a statistically significant positive relationship between the CFC-I and pre-drinking frequency, $r = .18$, $p = .01$, $n = 200$. Further, there was a statistically significant negative relationship between telic dominance and pre-drinking frequency, $r = -.26$, $p < .001$, $n = 202$, and the number of drinks consumed while pre-drinking, $r = -.18$, $p = .01$, $n = 202$, suggesting a positive relationship with paratelic dominance, and directly supporting hypothesis 3b.

Metamotivational Dominance and Reasons for Pre-drinking

Hypothesis 4 predicted that students who are telic dominant and autic-mastery dominant would pre-drink for reasons of situational control, whereas those who are paratelic and autic-sympathy dominant would pre-drink more for reasons of interpersonal enhancement and intimate pursuit. In order to test this hypothesis, the Telic Dominance and Autic-Mastery Dominance variables were recoded into new categorical variables where all participants scoring above zero (telic dominant/autic-mastery dominant) were given a score of 2 and all participants scoring below zero (paratelic dominant/autic-sympathy dominant) were given a score of 1. Since a score of zero represents no dominance (e.g. equal scores on both telic and paratelic subscales) students with a score of zero were not included in the analysis. Next, a new variable was created by adding these two variables together to determine which participants identified as both telic and autic-mastery dominant (TAM) or paratelic and autic-sympathy dominant (PAS). Creating these new variables allowed for three independent t-tests to be completed between these two groups.

With respect to situational control, there was no statistically significant effect for metamotivational dominance, $t(87) = .60$, $p = .547$, $d = .14$. However, there were statistically significant differences for both interpersonal enhancement, $t(87) = 3.21$, $p = .002$, $M_{TAM} = 16.11$, $M_{PAS} = 20.35$, $d = .69$; and intimate pursuit, $t(87) = 3.35$, $p = .001$, $M_{TAM} = 4.21$, $M_{PAS} = 5.92$, $d = .72$, both with moderate effect sizes according to Cohen (1988). Therefore, this hypothesis was partially supported; participants who were paratelic and autic-sympathy dominant reported more reasons related to interpersonal enhancement and intimate pursuit than those who were telic and autic-mastery dominant.

Correlations between Variables of Interest

Correlations were examined among all variables of interest to determine the strongest correlational values, suggesting which variables should be included in the subsequent regression analyses. These correlations can be found in Table 2.

Hierarchical Regression Analysis

Predictive model of pre-drinking behaviour. In order to determine the best model of prediction for the dependent variable, pre-drinking behaviour, a hierarchical multiple regression analysis was conducted. The *n* for this regression was 202 because only pre-drinkers who completed the pre-drinking behaviour questions were included in the analysis. Step 1 of the model was significant, $F(1,200) = 9.52$, $p = .002$, and accounted for 5% of the variance in pre-drinking behaviour. At this step, CFC-I significantly contributed to the model, $\beta = 0.21$, $t(200) = 3.09$, $p = .002$, with participants who scored higher on the CFC-I reporting higher levels of risky pre-drinking behaviour (higher frequency, and more alcohol consumed).

In Step 2, adding telic dominance, negativism dominance, and arousal seeking significantly improved the prediction of pre-drinking behaviour, $F_{change}(3,197) = 6.77$, $p < .001$, accounting for an additional 9% of the variance. Telic dominance did not significantly contribute to the model, $\beta = -.12$, $t(197) = 1.53$, $p = .127$, $sr^2 = .01$, and negativism dominance was only marginally significant, $\beta = .14$, $t(197) = 1.93$, $p = .055$, $sr^2 = .02$. On the other hand, arousal seeking contributed significantly to the model, $\beta = .19$, $t(197) = 2.64$, $p = .009$, $sr^2 = .03$. Overall, the final model accounted for 14% of the variance in pre-drinking behaviour, and can be seen in Table 8.

Predictive model of drinking behaviour. In order to determine the best model of prediction for drinking behaviour, a hierarchical multiple regression analysis was conducted. Drinking behaviour was defined as the frequency of drinking, and the amount of alcohol consumed on a typical drinking occasion. Both of these items were measured on the same scale, and were added together to get an overall drinking score. The *n* for this regression was 238. Because GPA was the only covariate with a significant correlation with the outcome variable, it was the only variable entered in the first step of the model. Step 1 of the model was significant, $F(1,236) = 4.22$, $p = .04$, but accounted for only 2% of the variance in state self-esteem. At this step, GPA significantly contributed to the model, $\beta = -.13$, $t(236) = 2.05$, $p = .04$, with participants who scored higher on this variable reporting less drinking.

Table 8.

Final regression model for pre-drinking behaviour (n = 202)

Step	*R*	R^2	Variables Entered	*b*	*SE*	β	*t*	*p.*
1	.21	.05	(Constant)	9.80	.81		12.05	<.001
			CFC-I	.10	.03	.21	3.09	.002
2	.27	.14	(Constant)	8.90	1.83		4.85	<.001
			CFC-I	.03	.04	.05	.69	.492
			Telic Dominance	-.11	.07	-.12	-1.53	.127
			Negativism Dominance	.11	.06	.14	1.93	.055
			Arousal Seeking	.19	.07	.19	2.64	.009

In Step 2, adding CFC-I and CFC-F significantly improved the prediction of drinking behaviour, $F_{change}(2,234) = 4.73$, $p = .01$, accounting for an additional 4% of the variance. While CFC-I significantly contributed to the model, $\beta = .15$, $t(234) = 2.17$, $p = .03$, $sr^2 = .02$, CFC-F did not, $\beta = -.09$, $t(234) = 1.25$, $p = .212$, $sr^2 = .64^{-2}$.

In Step 3, adding telic dominance, negativism dominance, and arousal seeking significantly improved the prediction of pre-drinking behaviour, $F_{change}(3,231) = 6.17$, $p < .001$, accounting for an additional 7% of the variance. Telic dominance, $\beta = -.22$, $t(231) = 2.70$, $p = .008$, $sr^2 = .03$, and arousal seeking, $\beta = .16$, $t(231) = 2.37$, $p = .019$, $sr^2 = .02$, both significantly contributed to the model, such that those who were paratelic dominant and arousal seeking tended to engage in more drinking behaviour. However, negativism dominance did not contribute significantly, $\beta = .01$, $t(231) = .20$, $p = .84$, $sr^2 <.001$. The complete model accounted for 13% of the variance in drinking behaviour, and can be seen in Table 9.

Exploratory Data Analyses

Gender Differences

There were no explicit hypotheses regarding gender differences on any of the variables. However, t-tests were explored to see if males and females significantly differed on any variables of interest. Four interesting differences emerged, the first two being that males tend to drink more during pre-drinking, $t(197) = 2.96$, $p = .003$, as well as at the main event, $t(197) = 2.68$, $p = .008$. While males reported an average consumption of 3.86 drinks while pre-drinking, and 3.41 at the main event, females reported 3.18 and 2.78 respectively. Further, males tended to report pre-drinking for

Table 9.

Final regression model for drinking behaviour (n = 238)

Step	*R*	R^2	Variables Entered	*b*	*SE*	β	*t*	*p.*
1	.13	.02	(Constant)	8.77	.86		10.15	<.001
			GPA	-.42	.20	-.13	-2.05	.041
2	.24	.06	(Constant)	8.10	1.29		6.27	<.001
			GPA	-.23	.21	-.07	-1.10	.273
			CFC-I	.04	.02	.15	2.17	.031
			CFC-F	-.04	.03	-.09	-1.25	.212
3	.36	.13	(Constant)	6.64	1.39		4.78	.000
			GPA	-.14	.21	-.04	-.68	.501
			CFC-I	.01	.02	.02	.31	.759
			CFC-F	-.02	.03	-.04	-.52	.605
			Negativism Dominance	.01	.03	.01	.20	.844
			Telic Dominance	-.09	.03	-.22	-2.70	.008
			Arousal seeking	.08	.04	.16	2.37	.019

reasons of intimate pursuit more often than females, $t(222) = 4.56$, $p < .001$, while females reported more reasons related to situational control, $t(222) = 3.17$, $p = .002$.

Retrospective Pre-drinking Metamotivational State Measure

To assess metamotivational states, the two items for each state (from the RPMSM) were summed together creating state variables with a possible range of 2 to 10. Overall, when asked a series of questions regarding the metamotivational state participants were in when they last engaged in pre-drinking, many participants reported being in the paratelic ($M = 8.32$) and autic-mastery ($M = 7.28$) states compared to the telic ($M = 4.53$) and negativistic ($M = 4.20$) states. While this is purely exploratory and was not investigated thoroughly, the means and ranges of each state variable provide information regarding the states students find themselves in, or put themselves in when they pre-drink. Because the least endorsed state was negativism, it might be suggested that students do not engage in pre-drinking as a way to rebel or go against the norm, rather they may want to conform ($M = 5.27$), enjoy the moment (paratelic), and/or take control of themselves (autic-mastery).

DISCUSSION

General Overview of Current Research

The overall purpose of the current study was to identify reasons why Canadian students engage in pre-drinking and how these reasons differ across individuals. The primary aim was to examine the factor structure of the PMI developed by LaBrie and colleagues (2012), and to identify possible motivations not addressed by the PMI. New themes were identified, some of which have been considered by previous research, but not included in the PMI. This was an important piece of the study because it has great implications for the future of pre-drinking research.

The second aim of the research was to identify a relationship between students' metamotivational profiles, time perspective, and pre-drinking behaviour. By determining the individual differences associated with pre-drinking, we can begin to understand what characteristics are common in student pre-drinkers, and how these characteristics may relate to each other and lead to different pre-drinking motivations and behaviour.

Finally, the present research aimed to identify any existing differences in pre-drinking behaviour and motivations between students who were older or younger than the legal drinking age. Previous research in the U.S. has suggested that students above and below the legal drinking limit did not differ in pre-drinking frequency (Pederson et al., 2009), but other authors (Thomas, 2007) suggested that pre-drinking may be a function of being underage. Therefore, it was of significant interest to examine age differences in the current sample. Findings suggested that there was a difference in pre-drinking behaviour, but not in the predicted direction.

Review of Results

Reasons for Pre-drinking

The first aim of this research was to investigate the reasons for pre-drinking in the context of a Canadian university and identify possible gaps in the current PMI. First and foremost, the current four-factor model of the PMI, identifying interpersonal enhancement, situational control, intimate pursuit, and barriers to consumption as the reasons for pre-drinking, was determined to be adequate. Validity and reliability was also determined to be adequate for each factor. However, some statistics (including fit and reliability statistics) were less than ideal, and may be improved through more research on the exact reasons for pre-drinking. By incorporating items identified through the thematic analysis and conducting an *exploratory* factor analysis, the structure may change slightly.

Five more themes were identified through the thematic analysis, suggesting that the PMI is restrictive in its options, providing a less complete picture of why students engage in pre-drinking. While some of these themes have indeed emerged in previous research, items regarding these themes were not included in the final PMI. However, one theme – inebriation – was in fact addressed by the PGMM introduced by Read and colleagues (2010), and a proper inventory of pre-drinking motives may actually be a hybrid of the two measures. Further, while some of the themes identified are theoretically interesting (peer influence), the prevalence of others (inebriation and socialization) warrants their inclusion in future research.

The theme of peer influence caught the attention of the researcher as something with great research potential. Not only is peer influence an expressed reason for pre-drinking, as identified here, but there may actually be a way to assess the pressure

students feel to engage in pre-drinking. Previous research has shown that peer influence plays a major role in risk-taking behaviours, including substance use. Leventhal (1997) developed a measure to address both implicit and explicit pressures to drink, as well as pressures against drinking. It is thought that a revised version of this measure could help determine the extent to which post-secondary students experience pressure in the pre-drinking context – especially because pre-drinking often takes place in smaller, more intimate environments where individuals may be easily influenced by their peers.

It is further suggested that there may be a pattern of individual characteristics that make someone more susceptible to peer pressure than others. By including this theme in a future measure of pre-drinking motives, and analysing it in relation to RT and the CFC, it may be that students higher in conformity and autic-sympathy are more easily influenced by the opinions and suggestions of others, possibly leading to more pre-drinking, or at least more pre-drinking for reasons related to peer influence.

Age Group Differences

A secondary aim of this research was to identify differences in pre-drinking behaviour and motivations, according to age. A suggestion had been made that pre-drinking is a result of the unusually high legal drinking age in the United States (Thomas, 2007). However, this suggestion assumes that pre-drinking does not exist, or exists to a lesser extent in countries where the legal drinking age is lower. The prevalence of pre-drinking in the current sample supported the idea that both students who were under-age and of-age engaged in pre-drinking.

Hypothesis 1a. The first hypothesis predicted that students younger than the legal drinking age would pre-drink more than older students. This hypothesis was not

supported, as the results suggested the contrary: older students (between the ages of 19 and 23) engaged in pre-drinking more frequently, and also consumed more alcohol on nights of pre-drinking than their younger counterparts. This is in direct contradiction to the finding of Pederson and colleagues (2009), who reported no age differences for pre-drinking frequency or typical quantity consumed during pre-drinking, but that underage students had higher blood alcohol levels (as determined through an equation using typical number of drinks, weight, and time spent pre-drinking). However, it may be explained by the fact that underage students actually reported a lower frequency of drinking in general. This means that while the majority of underage students do engage in drinking and pre-drinking, they do so less often than students who have reached the legal age requirement. It seems as if legal drinking age does not necessarily stop younger students from consuming alcohol; rather, it limits the opportunities and thus they engage less often.

Hypothesis 1b. This hypothesis, supported by the data, suggested that students under the legal drinking age would endorse barriers to consumption as a reason for pre-drinking more often than students over the age of 19. This finding made intuitive sense, considering that this subscale includes an item that reads "because I am underage and cannot purchase alcohol at the destination venue", and really focuses on the inability to otherwise consume alcohol. The barriers to consumption would be less of a problem for older students by default, because of their age. While there are certainly circumstances under which no one, regardless of age, can purchase alcohol at the main event, of-age students should have responded "*never/almost never*" to this specific item, decreasing their score on the overall subscale. Although it was not a part of this hypothesis, it may

be of interest to also report that there were no age differences for the other PMI subscales, indicating that this is the only pre-drinking motive that differs across age groups. This supports the idea that students engage in this behaviour for multiple reasons, and even though underage students may have to overcome more barriers, their goals are otherwise similar.

Predictive Ability of the CFC

Hypothesis 2. It was predicted that the CFC-I would be a better predictor of pre-drinking behaviour than the CFC-F. This hypothesis was supported in the current study, providing further support for the separation of the CFC constructs, and the idea that concern for the future does not necessarily indicate a lack of concern for the present (Petrocelli, 2003). This finding also reinforces findings from previous research which reported present time perspective as a solid predictor of substance use, while future time perspective was not (Keough et al., 1999). While researchers should continue to use the full CFC measure, it is important that the subscales are analysed separately, because the interpretation of results could differ if only the composite score is examined.

Profile of Heavy Pre-drinkers

Hypothesis 3a. This hypothesis predicted that the CFC-F would correlate positively with telic dominance and negatively with pre-drinking frequency. This was partially supported. Students who reported a greater concern for future consequences of their behaviour tended to report higher telic dominance as well. While no inferences of causation may be made, it is possible that a general concern for the future leads one to develop a more serious-minded goal orientation; on the other hand, it may be that one's tendency to be serious and goal oriented leads one to develop a greater concern for the

distant future. As indicated by Lafreniere and Cramer (2006), telic dominant individuals tend to avoid anxiety-provoking situations, and focus on future goals; characteristics evident in people reporting higher levels of CFC-F.

However, there was no significant relationship between the CFC-F and pre-drinking frequency, suggesting that a concern for the future does not dictate one's pre-drinking behaviour. Although not explicitly included in this hypothesis, the relationship between the CFC-I and pre-drinking frequency was determined to be significant, such that greater concern for immediate consequences led to more frequent pre-drinking. While this inherently provides support for the previous hypothesis (that the CFC-I is a better predictor than the CFC-F), it is difficult to assess how this fits in with existing CFC research. While other studies have found that the CFC is negatively related to such behaviours as alcohol use, the results are likely confounded by the fact that we now know these factors (CFC-F and CFC-I) to be separate. So while researchers have generally attributed a high CFC score to a high consideration of future consequences, this is not necessarily true. One study that can be compared here though, is that of Keough and colleagues (1999). Although the authors did not use the CFC scale, they did discover a relationship between present time orientation and substance use, such that those who were more present-oriented used more alcohol.

Hypothesis 3b. In direct support of this hypothesis, paratelic dominance correlated positively with both pre-drinking frequency and alcohol consumption during pre-drinking. This suggests that students who prefer to live in the moment, and adopt a more playful state of mind, not only engage in pre-drinking more often, but also consume more alcohol while doing so. Because this is the first study examining pre-drinking in

relation to RT, connections can be made with research on general risk taking and drinking behaviour. Lafreniere and colleagues (2013) reported that paratelic dominance was associated with a greater likelihood of drug and alcohol consumption, which was reinforced by O'Neil and others (2013). Because pre-drinking leads to increased alcohol consumption – often heavy/binge drinking – it is easy to see how the current results provide additional support for this previous research.

Metamotivational Dominance and Reasons for Pre-drinking

Hypothesis 4. This hypothesis asserted that students who were telic and autic-mastery dominant would pre-drink for reasons of situational control, whereas those who were paratelic and autic-sympathy dominant would pre-drink for interpersonal enhancement and intimate pursuit. While there were no differences for situational control, results indicated that students who were paratelic and autic-sympathy dominant did report more interpersonal enhancement and intimate pursuit motivations than their counterparts, providing partial support for this hypothesis. Because paratelic and autic-sympathy dominant students enjoy living in the moment and desire to be liked by others, it makes sense that they would pre-drink for these reasons. For example, items that may relate to the paratelic state in particular include "to pump myself up to go out" and "because having a few drinks before going out makes the night more interesting", which both fall under the category of interpersonal enhancement. These motivations may specifically appeal to paratelic-dominant individuals because they address the "having fun" aspect of pre-drinking, which is thought to attract students who are more playful and prefer to enjoy the present. In addition, students who want others to like them may focus

on reasons such as “to meet a potential dating partner during pre-drinking” and “it makes talking to new people easier” since these really emphasize positive social interactions.

However, it is unknown why there was no observed difference for situational control. It was anticipated that serious-minded participants who seek to maintain control over themselves would be interested in having control over their alcohol consumption, but this was not the case. Situational control was not related to any variables of interest, except the RT construct of arousal seeking, which was also not understood. According to this, students who generally seek adventure and excitement prefer not to take risks when it comes to drinking, and therefore pre-drink to maintain control over their consumption. This seems counterintuitive, so it would be interesting to see if other research is able to duplicate this finding.

Predictive Model of Pre-drinking

An important goal of the current research was to examine pre-drinking in relation to metamotivational personality constructs and the consideration of future consequences. However, a model of general drinking behaviour was also developed to serve as a comparison.

Drinking behaviour. Predictors of drinking behaviour were examined and the results indicated that telic dominance and arousal seeking were the most important predictors of drinking behaviour, over and above GPA, negativism dominance, and consideration of future and immediate consequences. Consequently, the results implied that telic dominant individuals tend to drink less, while arousal seeking individuals tend to drink more. This makes sense, given the fact that most telic dominant individuals try to

avoid high-arousal situations, and that telic dominance has been related to lower substance use by other researchers (Lafreniere et al., 2013; O'Neil et al., 2013).

Pre-drinking behaviour. Through an examination of variables related to pre-drinking behaviour, results demonstrated that negativism dominance and arousal seeking were the most important predictors, over and above telic dominance and CFC-I. The effect of arousal seeking on drinking and pre-drinking behaviour was similar, such that individuals who seek more excitement engage in more pre-drinking, as well as drinking in general. The difference though, was in the effect of negativism dominance. While this was not a predictor of drinking behaviour, there was a marginal effect on pre-drinking behaviour in which participants who reported higher levels of rebelliousness engaged in more pre-drinking. This finding substantiates that of Lafreniere and colleagues (2013), who reported a positive relationship between negativism and heavy drinking. These students thrive on breaking rules and defying authority. It is possible that one avenue to achieving this is through pre-drinking, especially if they are (a) underage, (b) pre-drinking in dorms where alcohol is prohibited, or (c) doing it before an event where alcohol is prohibited. All three of these may serve to make a statement along the lines of "you can't tell me what to do", which is associated with negativism.

Gender Differences

While males and females did not significantly differ in the outcome variables of drinking behaviour, pre-drinking frequency, frequency of getting drunk while pre-drinking, and overall pre-drinking behaviour, men consumed more alcohol during, as well as after, pre-drinking. Because men generally have higher tolerances for alcohol, they need to consume more to feel similar effects. This tendency substantiates these

results because even though males and females are consuming different amounts of alcohol, they report pre-drinking inebriation to the same extent.

A gender difference for pre-drinking motivations was also identified. While males and females similarly reported interpersonal enhancement and barriers to consumption, males had a much greater focus on intimate pursuit and females on situational control. The difference in intimate pursuit may stem from alcohol expectancy theory (Brown, Goldman, Inn, & Anderson, 1980), where students expect alcohol to lead to certain outcomes. Lindgren, Pantalone, Lewis, and George (2009), studied alcohol expectancies in relation to consensual sexual behaviour and found interesting gender differences. The authors reported that while men and women both reported a causal link between alcohol consumption and sex, the mechanisms were different. Men emphasized the ability of alcohol to facilitate sexual advances, and suggested that they were more likely to talk to women or make direct comments to them after drinking. Alternatively, women emphasized the utility of alcohol in augmenting sexual desires and making them feel more sexual. Considering these previous research findings, and the content within the factor of intimate pursuit, it is clear that the men from the current sample expected pre-drinking to assist with the process of hooking up, or meeting a potential partner. However, the items do not assess one's desire to "feel sexual", and therefore might not have appealed to women in the same way. Finally, females in the sample reported pre-drinking for situational control more often than men did. One possible reason for this could be that women may have more of a reason to fear drink-tampering than do men.

Metamotivational States during Pre-drinking

Overall, participants reported being in the paratelic and autic-mastery states most often while pre-drinking, demonstrating that pre-drinking is often a method of enjoying present-time and maintaining control over oneself. Additionally, an interesting finding emerged indicating that students were more often in a conformist state than the negativistic state while pre-drinking. It may be suggested then, that students do not typically engage in pre-drinking as a way to rebel, but rather as a means of conforming. At first, this may contradict the aforementioned discovery that negativism dominance was associated with more pre-drinking, but we are reminded of the underlying concept of reversal theory: humans are complex and dynamic in nature. This theory was developed as a way of explaining paradoxical and inconsistent behaviours, and this is a perfect example of that. While an individual may be generally negativistic, he or she may be conformist in the pre-drinking situation, and vice-versa. Reversal theory allows people to switch states while maintaining their dominance, and acknowledges that people's "characteristics" may differ depending on the context.

Additionally, the MSP assesses negativism in a very systemic way, measuring one's general preference for breaking rules and defying authority. However, it may be that social, situation-specific conformity and rebellion play a larger role within the context of pre-drinking. The items measuring negativism and conformity within the RPMSM of the present investigation were situation specific and took a very social approach (e.g., The last time I engaged in pre-drinking, "I wanted to do the opposite of what people wanted me to do" versus "I felt others expected me to drink before we went out"), rather than investigating broader systemic negativism.

Research Limitations

Despite the strengths of the present investigation, there were limitations that need to be considered. The first limitation was that the current sample had a disproportionate representation of females (66.9%), and students identifying as white (76.6%) due to the recruitment method. This is important to note because males often engage in more risky behaviour than females (Duberstein Lindberg, Bogges, Porter, & Williams, 2000; Essendrup, 2008), and there may be significant differences according to ethnicity (Paves et a., 2012). Additionally, because a sample of convenience was used, it may not be very generalizable to the greater student population. Because all participants were from the psychology participant pool, students who were not enrolled in at least one eligible psychology course were not included. It is possible that sub-populations such as Human Kinetics (HK), Business, and Engineering students may report different pre-drinking behaviour and motivations because of the inherent subcultures within those academic programs (i.e., HK programs are often saturated with student athletes who participate in the party culture surrounding varsity sporting events and tournaments).

Another limitation to the current research was that only one rater was responsible for the coding and identification of themes for the thematic analysis. While the researcher was familiar with the literature, and responses seemed to clearly belong to one theme or another, there was no way to determine if someone else would have coded the items within the same themes, or what the inter-rater reliability would have been.

Finally, self-report measures were used in the present study, and it is possible that not all participants answered honestly. While measures were in place to limit dishonest and non-serious responding, there was no way to know for sure how truthful the

participants were. In addition, there may be differences between how students respond with self-report versus how they would respond in real-world situations. While it is difficult to acquire the necessary information through alternative methods, results associated with self-report measures should be interpreted with caution.

Implications and Future Directions

The current study makes valuable contributions to our understanding of pre-drinking behaviour in students. First, a comprehensive list of pre-drinking motivations was identified, which has implications for future development of a more inclusive measure of pre-drinking motives. By developing items derived from the themes in the current research, and incorporating them into the current PMI, we may be able to more completely understand pre-drinking motivations. The new inventory could then be included in future research focused on individual and group differences within this field. For example, because peer influence has been demonstrated in previous research to affect alcohol behaviour (Leventhal, 1997), a quantitative investigation will allow researchers to examine potential relationships between metamotivation, peer influence, and pre-drinking behaviour and motivation.

The results surrounding individual differences in pre-drinking behaviour and motivation make significant contributions to the several areas of interest within social psychology; specifically the literature surrounding reversal theory, consideration of future consequences, pre-drinking, alcohol use, and student risk-taking behaviour. It was demonstrated that metamotivational constructs play an integral role in student motivations to pre-drink as well as their pre-drinking behaviour; this provides support for the use of RT as a theoretical framework in the identification of individual characteristics

of those who engage in risky pre-drinking. While future research should focus on corroborating the results from the present investigation, it should also identify how RT constructs differentially relate to the new pre-drinking motives that could not be statistically examined in the present study. For example, as insinuated above, metamotivation may act as a potential mediator for the relationship between peer influence and pre-drinking behaviour. In light of this, RT constructs should continue to be included in such research, and examined in relation to other predictors of drinking and pre-drinking, as well as the outcomes themselves.

The findings here also have implications for the future use of the CFC, such that the constructs were distinct and differentially related to the outcome variables. This supports previous research and the claim that the aggregate score is not as useful as the individual subscale scores (i.e., CFC-F and CFC-I), indicating that future research should follow suit.

Age differences identified in the present investigation provided evidence that pre-drinking is not a function of being underage, but that older students actually engage in riskier pre-drinking than do their younger classmates. While this makes sense from a legal standpoint, future research should try to replicate these findings in other Canadian universities to determine if this result was specific to the current sample. Further, it would be interesting to directly compare students of the same ages in Canada versus the United States. A possible collaboration between researchers in both areas could help identify cultural similarities and differences in students' pre-drinking motivations and behaviour. For example, it might be that 20 year-olds report similar patterns in both geographical

regions, but are distinctly different than 17 year-olds, suggesting that pre-drinking may be more a function of actual age, and not legal drinking age.

Because pre-drinking has been shown previously to lead to greater alcohol-related consequences (DeJong et al., 2010; Pederson & LaBrie, 2007), it is proposed that alcohol prevention or reform programs on campuses address pre-drinking directly. Further, the relationship between CFC-I and pre-drinking behaviour, identified in the present research, leads to more specific implications. Specifically, it is recommended that alcohol prevention programs on campuses not necessarily focus on long-term consequences and future goals, but rather place a greater emphasis on the immediate concerns of students. For example, instead of stressing the negative health consequences of heavy alcohol consumption (e.g., liver damage), it may be more beneficial to target immediate consequences such as passing out suddenly, hangovers, impaired driving, and getting in fights (Pederson & LaBrie, 2007). Because so many students use pre-drinking as a social lubricant, students could also be taught alternative techniques for reducing anxiety in social situations, thereby decreasing the apparent 'need' for pre-drinking.

Finally, because the current sample was restrictive, future research should incorporate effective strategies of recruiting participants outside of a subject pool. While these pools make it more convenient to access research participants within the university context, it is of significant interest to obtain a more heterogeneous sample. By including students from all academic programs, gender and ethnicity ratios are also likely approach equality (especially considering the diversity at the University of Windsor), and researchers could more readily compare groups of students, and generalize findings to the larger student population.

CONCLUSIONS

The primary aim of the current research was to investigate students' reasons for pre-drinking, and determine how these reasons related to individual differences as assessed by reversal theory and consideration of future consequences. New themes were identified that will allow future research to develop a comprehensive inventory of pre-drinking motivations. It was also shown that those who are paratelic and autic-sympathy dominant tended to pre-drink for interpersonal enhancement and intimate pursuit. Additionally, it was demonstrated that student pre-drinkers were more likely to be paratelic dominant and arousal seeking, which was supported by previous research on alcohol use and reversal theory

A secondary aim was to identify any differences in pre-drinking behaviour and motivations between students who were 19 years of age or older and those who were younger than 19. It was established that older students engage in more pre-drinking and consume more alcohol while pre-drinking than their younger counterparts. Further, while pre-drinking motivations remained stable across groups, for the most part, younger students reported more barriers to consumption that older students, likely because they have fewer opportunities to obtain alcohol than those who can purchase it legally.

In conclusion, the present investigation allows for a better understanding of student pre-drinking motivations and behaviour, and sheds light on the utility of reversal theory in identifying individual characteristics of pre-drinkers. Research in this area is particularly important because pre-drinking is associated with an elevated number of consequences in comparison to general drinking behaviour. The results from the current study suggest that it is worthwhile for researchers to continue investigating the reasons

for pre-drinking, especially in relation to metamotivational constructs and time perspective.

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Appendix A

OPEN ENDED QUESTIONS

Have you engaged in pre-drinking within the past 30 days?

- ○ Yes
- ○ No

Have you EVER engaged in pre-drinking?

- ○ Yes
- ○ No

What are your reasons for NOT pre-drinking?

Briefly describe your most recent pre-drinking experience.

(e.g., with whom and in what situation were you pre-drinking? What kind of event were you planning on attending afterwards? What happened?)

How many days has it been since you last engaged in pre-drinking?

What were your reasons for pre-drinking during this most recent occurrence?

What are your typical reasons for pre-drinking (if different than your most recent experience)?

Do you typically get drunk while pre-drinking (i.e., before going out)?

- ○ Yes
- ○ No

Appendix B

DRINKING/PRE-DRINKING BEHAVIOUR QUESTIONS

	Once a year	A few times a year	Monthly	Weekly	Daily
On average, how often do you consume alcohol (beer, wine, spirits, and/or liquor)?	○	○	○	○	○

On how many of the last 30 days did you drink alcoholic beverages?

	1	2	3	4	5	6 or more
When you drink alcohol, approximately how many drinks do you have?	○	○	○	○	○	○
In the last 30 days, what is the most alcohol you had to drink on any one day?	○	○	○	○	○	○

	Once a year	A few times a year	Monthly	Weekly	Daily
On average, how often do you engage in pre-drinking?	○	○	○	○	○

On how many of the last 30 days did you engage in pre-drinking?

1	2	3	4	5	6 or more

How many alcoholic drinks do you typically consume WHILE pre-drinking?	○	○	○	○	○	○
In the last 30 days, what was the most alcohol you had to drink on any one pre-drinking occasion?	○	○	○	○	○	○
How many drinks do you typically consume at the "main event" AFTER pre-drinking?	○	○	○	○	○	○

	Never	Not usually	Sometimes	Usually	Always
How often do you get drunk while pre-drinking, before you go out?	○	○	○	○	○

Appendix C

RETROSPECTIVE PRE-DRINKING METAMOTIVATIONAL STATE MEASURE

Thinking about the last time you engaged in pre-drinking, answer the following questions to the best of your ability.

The last time I engaged in pre-drinking...

	Strongly Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly Agree
I was concerned about the future effects of my drinking	○	○	○	○	○
I was concerned about my friends' drinking behavior	○	○	○	○	○
I wanted to do the opposite of what people expected me to do	○	○	○	○	○
I just wanted to have fun	○	○	○	○	○
I wanted positive attention from the people I was with	○	○	○	○	○
I wanted to feel like I was in control of myself	○	○	○	○	○
I wanted the host(s) to feel like they threw a good pre-party	○	○	○	○	○
I wanted to do what others were doing	○	○	○	○	○
I wanted to help myself feel calm	○	○	○	○	○
I was seeking	○	○	○	○	○

excitement					
I wanted to look out for my friends	○	○	○	○	○
I wanted to be in control of my drinking	○	○	○	○	○
I wanted the people I was with to like me	○	○	○	○	○
I felt rebellious	○	○	○	○	○
I thought the group would be better off if we drank	○	○	○	○	○
I felt others expected me to drink before we went out	○	○	○	○	○

Appendix D

MOTIVATIONAL STYLE PROFILE

Please respond to the following items in terms of how you experience things, in general:

	Never	Seldom	Sometimes	Often	Very Often	Always
Like to be tranquil	○	○	○	○	○	○
Like to break rules	○	○	○	○	○	○
Like to feel powerful	○	○	○	○	○	○
Help other people succeed	○	○	○	○	○	○
Get worked up about things	○	○	○	○	○	○
Have fun	○	○	○	○	○	○
Welcome attention from others	○	○	○	○	○	○
Show determination	○	○	○	○	○	○
Do things which I consider important	○	○	○	○	○	○
Feel rebellious	○	○	○	○	○	○
Help others to believe in themselves	○	○	○	○	○	○
Expect the best	○	○	○	○	○	○
Have intense feelings	○	○	○	○	○	○
Try to do exciting things	○	○	○	○	○	○
Attempt to fit in with others	○	○	○	○	○	○
Try hard	○	○	○	○	○	○
Act provocatively	○	○	○	○	○	○
Relish competing with others	○	○	○	○	○	○
React emotionally to events	○	○	○	○	○	○
Like to play by the rules	○	○	○	○	○	○
Like to be liked	○	○	○	○	○	○
Am a good friend	○	○	○	○	○	○

Believe things will turn out badly	○	○	○	○	○	○
Work at things	○	○	○	○	○	○

	Never	Seldom	Sometimes	Often	Very Often	Always
Like to be in control of things	○	○	○	○	○	○
Help others to achieve things	○	○	○	○	○	○
believe that things will turn out well	○	○	○	○	○	○
Enjoy myself	○	○	○	○	○	○
Look for thrills	○	○	○	○	○	○
Worry about whether others like me	○	○	○	○	○	○
Work for distant goals	○	○	○	○	○	○
Avoid disagreements	○	○	○	○	○	○
Enjoy defying authority	○	○	○	○	○	○
Look for responsibility	○	○	○	○	○	○
Feel hopeful	○	○	○	○	○	○
Like to be attractive to others	○	○	○	○	○	○
Take the safe course of action	○	○	○	○	○	○
Feel emotions surging up within me	○	○	○	○	○	○
Do things for kicks	○	○	○	○	○	○
Avoid annoying others	○	○	○	○	○	○
Aim to be kind to others	○	○	○	○	○	○
Hate to feel unpopular	○	○	○	○	○	○
Give to those in need	○	○	○	○	○	○
Get the feeling that I cannot cope	○	○	○	○	○	○
Plan ahead	○	○	○	○	○	○
Keep out of harm's way	○	○	○	○	○	○

Look at things in the long term	○	○	○	○	○	○
Want to do things that are prohibited	○	○	○	○	○	○

	Never	Seldom	Sometimes	Often	Very Often	Always
Encourage someone else to do better	○	○	○	○	○	○
Behave impulsively	○	○	○	○	○	○
Become emotionally involved	○	○	○	○	○	○
Act spontaneously	○	○	○	○	○	○
Feel confidence in myself	○	○	○	○	○	○
Welcome challenge	○	○	○	○	○	○
Try to avoid "making waves"	○	○	○	○	○	○
Experience hopelessness	○	○	○	○	○	○
Put a lot into things	○	○	○	○	○	○
Ask myself whether I am making progress	○	○	○	○	○	○
Look for security	○	○	○	○	○	○
Try to behave assertively	○	○	○	○	○	○
Feel cheerful	○	○	○	○	○	○
Do what I want to do at that moment	○	○	○	○	○	○
Like to be adventurous	○	○	○	○	○	○
Aim to be considerate to others	○	○	○	○	○	○
Enjoy giving presents	○	○	○	○	○	○
Feel fed up	○	○	○	○	○	○
Drive myself hard	○	○	○	○	○	○
Show belief in someone else's abilities	○	○	○	○	○	○

Care what happens to others	○	○	○	○	○	○
Believe that fate is against me	○	○	○	○	○	○

Appendix E

PREPARTYING MOTIVATIONS INVENTORY

For what reasons do you typically pre-drink?

	Almost Never/Never	Some of the time	Half of the time	Most of the time	Almost Always/Always
To meet a potential dating partner during pre-drinking	○	○	○	○	○
To meet a potential dating partner once I go out	○	○	○	○	○
Because I am underage and cannot purchase alcohol at the destination venue	○	○	○	○	○
To pump myself up to go out	○	○	○	○	○
Because having a few drinks before going out make the night more interesting	○	○	○	○	○
To meet new friends once I go out	○	○	○	○	○
To relax or loosen up before I go out	○	○	○	○	○
To enjoy my favourite drink in case the place I am going does not serve that drink	○	○	○	○	○
It makes talking to new people easier	○	○	○	○	○
It helps me feel more relaxed when meeting new members of the opposite sex once I go out	○	○	○	○	○
To increase the likelihood of hooking up	○	○	○	○	○
Because alcohol may not be available or may be hard to get	○	○	○	○	○

at the destination					
To avoid getting caught with alcohol on the way to, or at, the final destination	○	○	○	○	○
So I have control over what type of alcohol I consume rather than relying on what's available at the destination	○	○	○	○	○
So I don't have to worry about whether someone has tampered with the drinks at a party	○	○	○	○	○
So I don't have to drink at the place where I'm going	○	○	○	○	○

Appendix F

CONSIDERATION OF FUTURE CONSEQUENCES

Instructions:

For each of the following statements below, please indicate the extent to which the statement is characteristic of you.

	Extremely Uncharacteristic	Moderately Uncharacteristic	Uncertain	Moderately Characteristic	Extremely Characteristic
I consider how things might be in the future, and try to influence those things with my day to day behaviour	○	○	○	○	○
Often I engage in a particular behaviour in order to achieve outcomes that may not result for many years	○	○	○	○	○
I only act to satisfy immediate concerns, figuring the future will take care of itself	○	○	○	○	○
My behaviour is only	○	○	○	○	○

influenced by the immediate (i.e., a matter of days or weeks) outcomes of my actions					
My convenience is a big factor in the decisions I make or the actions I take	○	○	○	○	○
I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes	○	○	○	○	○
I think it is important to take warnings about negative outcomes seriously even if the negative outcome will not occur for many years	○	○	○	○	○
I think it is important to perform a behaviour with important	○	○	○	○	○

distant consequences than a behaviour with less important immediate consequences					
I generally ignore warnings about possible future problems because I think the problems will be resolved before they reach crisis level	○	○	○	○	○
I think that sacrificing now is usually unnecessary since future outcomes can be dealt with at a later time	○	○	○	○	○
I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date	○	○	○	○	○

Since my day to day work has specific outcomes, it is more important to me than behaviour that has distant outcomes	○	○	○	○	○

Appendix G

DEMOGRAPHICS

Background Information

Gender

- ○ male
- ○ female
- ○ transgender
- ○ other (please specify) _____

Age

[ ]

To what racial or ethnic group do you belong?

If you belong to more than one group, please check all that apply.

- ☐ White/ European
- ☐ Black/ African/ Caribbean
- ☐ Latin/ South American
- ☐ East Asian/ Chinese/ Japanese
- ☐ South Asian/ Indian/ Pakistani
- ☐ Aboriginal/ Metis/ First Nations
- ☐ Middle Eastern
- ☐ Bi/ Multiracial (please specify) _____
- ☐ Other (please specify) _____

Which post-secondary institution are you currently enrolled in?

[ ]

Program

Major or Specialization

Year of Study

- ○ 1st year
- ○ 2nd year
- ○ 3rd year
- ○ 4th year
- ○ 5th year or beyond

Grade Point Average

What is your current cumulative GPA?

Appendix H

INFORMED CONSENT FORM – Participant Pool

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Motivations for pre-drinking.

You are asked to participate in a research study conducted by Ashlyne O'Neil, supervised by Dr. Kathryn Lafreniere, from the Department of Psychology at the University of Windsor. The results of this study will be used to fulfil the requirements of a Master's thesis.

If you have any questions or concerns about the research, please feel free to contact the primary investigator, Ashlyne O'Neil at (xxx) xxx-xxxx (oneil8@windsor.ca), or the faculty supervisor, Dr. Kathryn Lafreniere at (519) 253-3000, extension 2233 (lafren1@uwindsor.ca).

PURPOSE OF THE STUDY

The purpose of this study is to examine the reasons for pre-drinking and how they relate to personality.

PROCEDURES

If you volunteer to participate in this study, you will be asked to do the following things. Read this consent form and provide for your consent for participation by clicking on the link at the end of this form. You will then be directed to an online survey that consists of several questionnaires. Please complete the survey in a quiet place where you are able to fully concentrate. The survey will take approximately 30 minutes to complete and will be completed in one session. After completing the online survey, you will be directed to a subsequent form where you can fill in your personal information for verifying your compensation.

POTENTIAL RISKS AND DISCOMFORTS

There are no foreseeable risks associated with participation in this study. Nonetheless, if you feel uncomfortable answering some of the questions, you are free to skip them.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Participating in this study will allow you to experience research in the area of personality and health behaviours, which may be useful for you if you will conduct research or read about research in this area in the future. Your participation is important, since findings from research studies such as this one contribute to knowledge about the predictors and consequences of pre-drinking.

COMPENSATION FOR PARTICIPATION

Participants will receive 0.5 bonus points for up to 30 minutes of participation towards the psychology participant pool, if registered in the pool and enrolled in one or more eligible courses.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Note that we must collect your name and student number at the end of the study in order for you to receive your bonus point. Your data will be kept separate from your name and student number. All of the information you provide will be stored on a secure, password-protected computer that will only be accessed by the researchers. Your data will be retained for 10 years, after which point it will be securely wiped from the servers.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still be in the study. The investigator may withdraw you from this research if circumstances rise which warrant doing so.

Participants can remove themselves at any time during the study before completion by discontinuing their participation and exiting their browser. Participants who choose to skip specific questions and complete the survey are eligible to receive credit for their participation. However, participants who discontinue their participation in the study by exiting their browser are not eligible to receive credit for their participation. Participants cannot remove data from the study once it has been submitted.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

Research findings for this study will be available to participants, and will be posted on the University of Windsor REB website.

Web address: www.uwindsor.ca/reb
Date when results are available: January 2014

SUBSEQUENT USE OF DATA

These data from this study may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948;
e-mail: ethics@uwindsor.ca

I understand the information provided for the study **"Motivations for pre-drinking"** as described herein, and I agree to participate in this study.

Please print a copy of this letter of information for your records by selecting "File/Print" in your browser.

Appendix I

INFORMED CONSENT FORM – Snowball

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Motivations for pre-drinking.

You are asked to participate in a research study conducted by Ashlyne O'Neil, supervised by Dr. Kathryn Lafreniere, from the Department of Psychology at the University of Windsor. The results of this study will be used to fulfil the requirements of a Master's thesis.

If you have any questions or concerns about the research, please feel to contact the primary investigator,
Ashlyne O'Neil at (xxx) xxx-xxxx (oneil8@windsor.ca), or the faculty supervisor, Dr. Kathryn Lafreniere at (519) 253-3000, extension 2233 (lafren1@uwindsor.ca).

PURPOSE OF THE STUDY

The purpose of this study is to examine the reasons for pre-drinking and how they relate to personality.

PROCEDURES

If you volunteer to participate in this study, you will be asked to do the following things. Read this consent form and provide for your consent for participation by clicking on the link at the end of this form. You will then be directed to an online survey that consists of several questionnaires. Please complete the survey in a quiet place where you are able to fully concentrate. The survey will take approximately 30 minutes to complete and will be completed in one session. After completing the online survey, you will be directed to a subsequent form where you can fill in your personal information for verifying your compensation.

POTENTIAL RISKS AND DISCOMFORTS

There are no foreseeable risks associated with participation in this study. Nonetheless, if you feel uncomfortable answering some of the questions, you are free to skip them.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Participating in this study will allow you to experience research in the area of personality and health behaviours, which may be useful for you if you will conduct research or read about research in this area in the future. Your participation is important, since findings from research studies such as this one contribute to knowledge about the predictors and consequences of pre-drinking.

COMPENSATION FOR PARTICIPATION

Participants will be entered into a draw to win one of four (4) thirty dollar MasterCard® gift cards. The winners will be contacted via email.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Note that we must collect your name and email address at the end of the study in order for you to be entered into the draw. Your data will be kept separate from your name and email address. All of the information you provide will be stored on a secure, password-protected computer that will only be accessed by the researchers. Your data will be retained for 10 years, after which point it will be securely wiped from the servers.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still be in the study. The investigator may withdraw you from this research if circumstances rise which warrant doing so.

Participants can remove themselves at any time during the study before completion by discontinuing their participation and exiting their browser. Participants who choose to skip specific questions and complete the survey are eligible to receive credit for their participation. However, participants who discontinue their participation in the study by exiting their browser are not eligible to receive credit for their participation. Participants cannot remove data from the study once it has been submitted.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

Research findings for this study will be available to participants, and will be posted on the University of Windsor REB website.

Web address: www.uwindsor.ca/reb
Date when results are available: January 2014

SUBSEQUENT USE OF DATA

These data from this study may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948;
e-mail: ethics@uwindsor.ca

I understand the information provided for the study **"Motivations for pre-drinking"** as described herein, and I agree to participate in this study.

Please print a copy of this letter of information for your records by selecting "File/Print" in your browser.

Appendix J

FEEDBACK AND RESOURCES

FEEDBACK AND RESOURCES

Thank you for completing this survey. Your participation is very important to us. Please find a list of resources below.

To find out more about responsible drinking, or if you are concerned about your own, or someone else's drinking behaviour you can consult any of the following resources:

Teen Health Centre
519-253-8481
1585 Ouelette Avenue, Windsor, N8X 1K5
http://wechc.org/teenhealth_home

Student Health Services
519-973-7002
Room 242 CAWSC
www.uwindsor.ca/health

Student Counselling Centre
519-253-3000, ext. 4616
Room 293 CAWSC
www.uwindsor.ca/scc

Don't be that guy/Don't be that girl:
http://www1.uwindsor.ca/responsibledrinking/

Complete the E-Chug Challenge:
http://www1.uwindsor.ca/responsibledrinking/e-chug-challenge

Student Referral:
http://www1.uwindsor.ca/responsibledrinking/referral-to-alcohol-education-session

VITA AUCTORIS

Ashlyne O'Neil was born in 1988 in Windsor, Ontario. She graduated from Essex District High School in 2006. From there she attended the University of Windsor where she obtained an Honours Bachelor of Arts degree in 2010, majoring in Psychology, with a minor in Biology. She subsequently completed a post-graduate certificate in Autism and Behavioural Science at St. Clair College in 2011. She is currently a Master's candidate in the Applied Social Psychology program at the University of Windsor.