# THE STRUCTURE OF DRINKING MOTIVES IN FIRST NATIONS ADOLESCENTS IN NOVA SCOTIA

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*OBJECTIVE: The factor structure of the Drinking Motives Questionnaire - Revised (DMQ-R; Cooper, 1994) was examined in a sample of First Nations (i.e., Mi'kmaq) adolescents.  RESULTS: Exploratory principal components analysis indicated a three-factor structure (conformity, coping, and positive reinforcement motives), with the positive reinforcement motives of enhancement and social motives not separating into the expected two distinct factors. Moreover, community informants (e.g., school personnel) anecdotally indicated possible wording problems with some of the social motive items for the cultural group. A qualitative methodology - focus group interviews with Mi'kmaq adolescents - was used to explore potential reasons for these observed differences in the structure of drinking motives from previous findings in the majority culture (i.e., a measurement problem vs. a real difference in the structure of drinking motives in the Mi'kmaq culture). CONCLUSIONS: Qualitative findings support the interpretation that a true social motive for alcohol use does not exist in this cultural/age group and that drinking in social contexts for this group seems less motivated by social affiliation than by enhancement motives (e.g., drinking to party).*

In Canada, 4.4% of the population is composed of individuals who identify themselves as Aboriginal (Aboriginal people can include Indian, Métis, and Inuit peoples, as recognized in the Constitution of

Canada; Statistics Canada, 2001). Unfortunately, the abuse of alcohol and other substances is consistently reported as a major problem in Aboriginal communities (Health Canada, 2003); these communities are well aware of the negative role that alcohol plays in the health of their people. In the Aboriginal Peoples Survey (Statistics Canada, 1991), 73% of First Nations respondents reported that alcohol was a problem in their communities. This situation is not unique to Aboriginal youth in Canada; similar problems are faced by American Indian and Alaska Native (AI/AN) communities in the U.S. For example, Spicer et al. (2003) found that that alcohol dependence for AI men was twice the national average. Data from the Indian Health Service and the Centers for Disease Control and Prevention indicate that alcohol-related hospitalizations among AIs are disproportionately high (Indian Health Service, 1995; Centers for Disease Control and Prevention, 1992). Clearly, there is a need for culturally relevant intervention programming designed to address the issue of alcohol abuse within Aboriginal groups, and for early intervention programming to prevent alcohol problems in Aboriginal young people.

When developing interventions for use with Aboriginal groups, the appropriateness of assessment measures derived from majority cultures must be considered. The validity of such measures when used with Aboriginal groups cannot be assumed. Intervention design is dependent upon appropriate assessment; inappropriate assessment may lead to less-than-optimal interventions. For example, when assessing adolescents' motives for drinking, it is important to appreciate cultural diversity and the effects this diversity might have on the validity of psychological measures (Kuntsche, Stewart, & Cooper, 2008). Drinking motives that might be common within a majority culture simply may not apply within other communities or groups. This difference may lead to confusion when culturally inappropriate items (designed to tap a specific but culturally exclusive construct) on a measure are encountered. If measures are broadly applied across varying cultures, one can reasonably expect that not all items would be relevant for all groups (for more, see Mushquash & Bova, 2007).

Adolescents within a group may drink for different reasons, which must be taken into consideration when developing prevention and treatment programs. For example, a treatment approach for an individual who consumes alcohol to cope with negative feelings would be different than that for an individual who consumes alcohol to enhance experiences. Sub-typing drinkers on the basis of their reasons for drinking facilitates the ability to design appropriate and individually

specific prevention and treatment programs with more accuracy and effectiveness (Conrod, Pihl, Stewart, & Dongier, 2000). Such grouping can only be done when considering both the nature of the questions on a measure, and the overall factor structure of the measurement model within the cultural group with which the measure is intended to be used.

Cox and Klinger (1988, 1990) proposed a framework for categorizing motives for drinking in which they recognized that people drink to obtain various valued outcomes. This model was adapted by Cooper (1994), who characterized drinking motives along two underlying dimensions. These dimensions reflect the valence (which can involve positive or negative reinforcement) and the source (internal or external) of outcomes that an individual might hope to achieve by drinking. What emerges is a four-factor model that crosses valence by source, whereby individuals may drink to obtain a positive outcome (positive reinforcement) or to avoid a negative outcome (negative reinforcement), and whereby they may drink to achieve an internal reward (e.g., change in affective state) or an external reward (e.g., change in social environment). Each of the four resultant factors represents a distinct motive for drinking (enhancement, social, coping, and conformity).

Enhancement motives are internally generated and positively reinforcing. They reflect the crossing of the positive reinforcement valence, and internal source dimensions (i.e., drinking to enhance pleasurable emotional states). Social motives are externally generated and positively reinforcing. Individuals who are motivated to drink for social reasons are externally controlled, seeking to obtain positive social drinking outcomes (i.e., affiliation with others). Coping motives are internally generated and negatively reinforcing (i.e., drinking to cope with negative emotions), and the remaining motive, conformity, is externally generated and negatively reinforcing (i.e., drinking to reduce social censure; see Cooper, 1994).

The ability to identify and classify individuals along these four drinking motives has important implications for intervention and treatment. If the goal of programming is to lessen the harm of drinking, then determining why a person drinks becomes vital. By targeting individuals' reasons for drinking, the appropriate tools can be provided to enable them to change. Further, some motives have been related to more normative and less risky drinking behavior, while others have been associated with heavier and more problematic drinking, at least in the majority culture. For example, social motives are endorsed more often than any others and are associated with light, infrequent, and

nonproblematic alcohol use among adolescents and young adults from the majority culture (Cooper, 1994; Stewart et al., in press). Conversely, coping motives have been related to heavier, problematic drinking in these groups (Cooper, 1994). In addition, social motives are related to drinking in social settings while coping motives have been related to drinking alone (Cooper, 1994). Again in contrast to social motives, enhancement motives have been shown to positively predict a pattern of heavy alcohol use and drinking in situations conducive to heavy drinking, and to be related to alcohol problems by virtue of their association with heavier consumption (Cooper; Stewart et al.). Determining why an individual drinks is important to ensure that the right issues are being addressed, whether in educational or therapeutic settings.

## Study 1

An intervention program (described in detail elsewhere) developed in collaboration with First Nations school-based partners and students, was implemented in two Aboriginal communities in Atlantic Canada (Comeau et al., 2005; Mushquash, Comeau, & Stewart, 2007). This program sought to prevent alcohol misuse by Aboriginal adolescents at risk for alcohol abuse, using a risk-reduction approach. At-risk adolescents were those who scored above one standard deviation on specific personality traits (Anxiety Sensitive, Hopelessness/Negative Thinking, and Sensation Seeking) associated with problematic alcohol use as measured by the Substance Use Risk Profile Scale (SURPS; Woicik, Conrod, Stewart, & Pihl, 2008; Krank, Stewart, Wall, Woicik, & Conrod, 2008). As part of the assessment process to screen for eligible intervention participants, the Drinking Motives Questionnaire - Revised (DMQ-R) was administered to students in four high schools (grades 8-12) in two First Nations communities within Nova Scotia. For this study, data collected from Mi'kmaq students were analyzed.  Data were collected across 2 school years and pooled to enable an adequate sample size for factor analysis.

**Method**

### Participants
The screening sample consisted of 164 adolescents (84 female, 80 male) from grades 8 to 12. The mean age of the sample was 16.3 years (*SD* = 1.3) and the average education obtained was grade 10.  Of

the total pooled sample, 153 students reported using alcohol in the previous 4 months and were included in the analysis (nondrinkers were excluded because the DMQ-R response format requires respondents to be drinkers). Students reported drinking 5-6 or 7-9 drinks per drinking occasion, ($M$ = 3.35, $SD$ = 1.451; on a Likert-type scale of 1 to 5, with each number representing a range of drinks: 1 = *1 to 2 drinks*; 2 = *3 to 4 drinks*; 3 = *5 to 6 drinks*; 4 = *7 to 9 drinks*; 5 = *10 or more drinks*), and drinking at least 2 to 3 times per month, ($M$ = 2.41, $SD$ = 1.447; on a Likert-type scale of 1 to 5).

### Measures

The DMQ-R is a 20-item self-report measure designed to quantify adolescents' reasons for drinking alcohol.  It is based on an earlier version (DMQ; Cooper, Russell, Skinner, & Windle, 1992) which was designed to measure three distinct drinking motives (coping, enhancement, and social) in adult samples. The revised version was specifically designed to measure the four drinking motives described in Cooper's (1994) model in adolescent samples, and also included the conformity motives subscale. Respondents rate their relative frequency of drinking alcohol for the four reasons (social, enhancement, coping, and conformity), each tapped by five items, on a 5-point scale, with 1 = *almost never/never* and 5 = *almost always/always*. For the purposes of this study, if values were missing from participants' DMQ-R data, the mean of the subscale was used. Each subscale has five values; if two or fewer values were missing from the subscale, the mean of the remaining values was used. If more than two values in a subscale were missing, the participant was excluded from the analysis.

### Data Analysis

In order to explore the factor structure of the DMQ-R, an exploratory principal components factor analytic methodology was employed, because no work had previously been done with the DMQ-R in this population.  As well, oblique rotation was used because of the previously observed intercorrelation of the factors on this measure in adolescents (Cooper, 1994) and young adults (Simons, Correia, Carey, & Borsari, 1998; Stewart, Zeitlin, & Samoluk, 1996; Stewart, Watt, Zvolensky, Mushquash, Eifert, & Samoluk, in press) from the majority culture.  In the present study, there were mild to moderate correlations (three-factor solution: .260 - .408; four-factor solution: .159 - .415) between the factors.

**Results**

Kaiser's eigenvalue > 1 criterion for factor extraction supported a four-factor solution (four eigenvalues greater than 1.00; Table 1). When a four-factor solution was examined, 64.77% of the variance was accounted for, but the structure matrix was not interpretable within the DMQ-R framework. Social and enhancement motives loaded on the same factor (1; 41.25% variance explained) and a factor made mostly of coping items emerged (3; 6.98% variance explained). The remaining two factors were composed of items from other motives, with one factor (2; 11.04% variance explained) made mostly of conformity items (and some coping items) and one factor (4; 5.50% variance explained) representing only one item from the measure (see Table 2). Because the fourth factor had only one item with a salient loading, the four-factor solution clearly represented factor over-extraction. Thus, the four-factor solution showed poor simple structure (Thurstone, 1947). Because of the relatively small subject-to-variable ratio, loadings > .60 were considered salient; this criterion is quite strict, but helps ensure the reliability of the solution.

**Table 1**
**Eigenvalues for Obliquely-rotated Factor Analysis**

| Component | Eigenvalues | | |
| | Total | % of Variance | Cumulative % |
|---|---|---|---|
| 1 | 8.250 | 41.251 | 41.251 |
| 2 | 2.209 | 11.043 | 52.294 |
| 3 | 1.396 | 6.980 | 59.274 |
| 4 | 1.101 | 5.503 | 64.777 |

When a three-factor solution was examined, slightly less variance was accounted for (59.27%), but the factor solution better reflected the DMQ-R. As with the four-factor solution, Factor 1 accounted for the most variance and was composed of social and enhancement motive items. Factor 2 was composed of items from the coping motive. Factor 3 was made up of items from the conformity motive (see Table 3). Thus, the three-factor solution was theoretically interpretable and showed excellent simple structure.

When a two-factor solution was forced, factors reflecting positive reinforcement (Factor 1) and negative reinforcement motives (Factor 2) emerged. Although this two-factor solution was more parsimonious, the three-factor solution provided more detail as it separated the negative reinforcement factor into coping and conformity motives. While we did not conduct a confirmatory factor analysis (which would have allowed us to test if the incremental information provided by splitting coping and

conformity motives over a generic negative reinforcement motive was a significant improvement in model fit), the three-factor solution more closely reflected the theorized model (Cooper, 1994). A single-factor solution was not examined as it would simply be a reflection of a general motivation to drink or a proxy measure of drinking frequency.

**Table 2**
**Structure Matrix for Obliquely-rotated, Four-factor Solution**
**($N$ = 153 drinkers)**

| DMQ-R Item | | Factor 1 - Enhancement Motives | Factor 2 - Social Motives | Factor 3 - Coping Motives | Factor 4 - Conformity Motives |
|---|---|---|---|---|---|
| **Enhancement Motives Subscale** | | | | | |
| 13. | Because it gives you a pleasant feeling | .834* | .347 | .438 | .172 |
| 18. | Because it's fun | .876* | .252 | .323 | -.002 |
| 7. | Because you like the feeling | .749* | .344 | .310 | .201 |
| 9. | Because it's exciting | .779* | .399 | .239 | .187 |
| 10. | To get high | .635* | .512 | .463 | .285 |
| **Coping Motives Subscale** | | | | | |
| 17. | To forget about your problems | .458 | .489 | .739* | .032 |
| 1. | To forget your worries | .181 | .285 | .694* | .012 |
| 4. | Because it helps you when you feel depressed or nervous | .425 | .344 | .852* | .130 |
| 6. | To cheer up when you are in a bad mood | .391 | .351 | .813* | .122 |
| 15. | Because you feel more self-confident and sure of yourself | .479 | .693* | .524 | .029 |
| **Conformity Motives Subscale** | | | | | |
| 20. | So you won't feel left out | .405 | .812* | .476 | .170 |
| 12. | To fit in with a group that you like | .405 | .775* | .420 | .235 |
| 19. | To be liked | .277 | .881* | .384 | -.030 |
| 8. | So that others won't kid you about not drinking | .207 | .654* | .108 | .533 |
| 2. | Because your friends pressure you to drink | .103 | .156 | .101 | .844* |
| **Social Motives Subscale** | | | | | |
| 5. | To be sociable | .496 | .499 | .464 | .393 |
| 3. | Because it helps you enjoy a party | .715* | .231 | .298 | .479 |
| 14. | Because it improves parties and celebrations | .780* | .275 | .382 | .064 |
| 11. | Because it makes social gatherings more fun | .841* | .391 | .423 | .112 |
| 16. | To celebrate a special occasion with friends | .766* | .245 | .329 | -.032 |

Extraction method: Principal Component Analysis
Rotation method: Oblimin with Kaiser Normalization
*loading >.60
Loadings for Factor 3 have been multiplied by -1.00 to aid in interpretability

**Table 3**
**Structure Matrix for Obliquely-rotated, Three-factor Solution**
**(*N* = 153 drinkers)**

| DMQ-R Item | Factor 1 - Enhancement/ Social Motives | Factor 2 - Coping Motives | Factor 3 - Conformity Motives |
|---|---|---|---|
| **Enhancement Motives Subscale** | | | |
| 13. Because it gives you a pleasant feeling | .837* | .419 | .278 |
| 18. Because it's fun | .866* | .327 | .139 |
| 7. Because you like the feeling | .782* | .303 | .316 |
| 9. Because it's exciting | .778* | .261 | .372 |
| 10. To get high | .645* | .471 | .470 |
| **Coping Motives Subscale** | | | |
| 17. To forget about your problems | .463 | .758* | .279 |
| 1. To forget your worries | .190 | .673* | .104 |
| 4. Because it helps you when you feel depressed or nervous | .440 | .795* | .173 |
| 6. To cheer up when you are in a bad mood | .405 | .766* | .184 |
| 15. Because you feel more self-confident and sure of yourself | .476 | .631* | .500 |
| **Conformity Motives Subscale** | | | |
| 20. So you won't feel left out | .409 | .597 | .679* |
| 12. To fit in with a group that you like | .412 | .525 | .689* |
| 19. To be liked | .268 | .581 | .669* |
| 8. So that others won't kid you about not drinking | .229 | .165 | .788* |
| 2. Because your friends pressure you to drink | .150 | -.042 | .499 |
| **Social Motives Subscale** | | | |
| 5. To be sociable | .514 | .450 | .510 |
| 3. Because it helps you enjoy a party | .736* | .207 | .348 |
| 14. Because it improves parties and celebrations | .777* | .374 | .178 |
| 11. Because it makes social gatherings more fun | .839* | .431 | .291 |
| 16. To celebrate a special occasion with friends | .757* | .340 | .119 |

Extraction Method: Principal Component Analysis
Rotation Method: Oblimin with Kaiser Normalization
*loading >.60

## Discussion

The hypothesized four-factor model did not emerge in this analysis. One reason why the solution was different from the expected theoretical model might be sample size. Gorusch (1983) recommended a minimum of five subjects per variable. Higher subject-to-variable ratios are generally better (Tabachnick & Fidell, 2001); small sample sizes yield

unstable factors in factor analysis, as correlation coefficients estimated from small samples tend to be less reliable (Tabachnick & Fidell). The DMQ-R has 20 items, and only 153 respondents were included in the analysis; this translates to a subject-to-variable ratio of 7.7:1. Given the stringent guidelines with respect to the classification of loadings (salient loadings > .60), this ratio is acceptable.

It may be that a three-factor solution better represents the drinking motives of Mi'kmaq youth.  In particular, it may be that, within this group, there is an association of drinking in social contexts with enhancement motives leading to a confounding of social and enhancement motives.  This would indicate that Cooper's (1994) model and the DMQ-R need to be modified to ensure that the measure is valid for use with this cultural group.  This finding speaks to the issue of cultural appropriateness; anecdotal evidence from school personnel indicated potential problems with some of the social motive items.  For example, community informants indicated that the word "sociable" (DMQ-R item 5) is not typically used within the Mi'kmaq culture and thus the respondents may not have been able to adequately answer the social motive item that used this term. However, it is unclear whether the findings were related strictly to problems with inappropriate wording and language, or if the three-factor solution was related to a structural difference in drinking motives in this sample.

## Study 2

Because of the emergence of a three-factor model, a qualitative study was conducted to help elucidate the reasons why the social and enhancement motives were not separating into two distinct factors in this cultural/age group.

### Method

#### Participants
This study purposively sampled participants from the screening sample who were identified as being at high risk for alcohol-related problems (i.e., who scored higher than one standard deviation on the SURPS) and participated in the intervention, as well as students who were identified as being at high risk who did not participate in the intervention. In addition, a group of students who participated in the intervention by contributing artwork to the intervention manuals, but who were not in

the high-risk category, participated in the focus groups. This additional group was included to avoid potential confounds associated with sampling only high-risk individuals. For example, it may be that there is no social motive for drinking among high-risk drinkers, and sampling only this group would bias the results in that direction. As well, many of the high-risk students had participated in the intervention and may have been affected by the material in such a way as to change their previous motivations for drinking (Mushquash et al., 2007).

### Apparatus

The seven open-ended questions from the Motivational Information – Reasons for Drinking section of the Comprehensive Drinker Profile (CDP; Marlatt & Miller, 1984) formed the guide for the qualitative interviews. This section of the CDP was previously used in developing the intervention. Specifically, it was used to identify scenarios and stories in which community adolescents felt motivated to drink. It was chosen for use in the present study because it captures the source and valence of reasons for drinking, similar to the structure of Cooper's (1994) model, but in an open-ended manner suitable for use in a group-based interview. In addition to directly querying about reasons for drinking, the CDP asks about the most positive effects or consequences associated with drinking, as this is an indirect way to get at why young people drink. In other words, finding out what they think are positive effects of drinking can help clarify their desired consequences of, or motives for, drinking.

### Procedure

Students were interviewed in small groups of 5 to 10 at their respective schools. A culturally relevant Sharing Circle format, in which students sat quietly and respectfully, taking turns sharing openly without judgement from others, was used to ensure that participants could feel free to communicate their feelings and opinions in a way that was safe; the interviewer was a First Nations young adult from a different group in Canada. All relevant procedures used to protect participants' confidentiality were described to the students and, following their assent, the focus group interviews were audiotaped. Upon the recommendation of our community partners, parental consent was not sought so as not to create potential child-protection issues. Audiotapes were later transcribed and data were analyzed for predominant themes. The focus groups could have consisted of students from three pools of potential participants: those who participated in the interventions, those who were eligible but did not participate in the interventions, and those who

were at low risk). Generally speaking, the focus groups consisted of more high-risk youth than low-risk. There was roughly a similar distribution between students who participated in the interventions and those who did not.

## Results

*"No one has ever asked those kinds of questions before, so it's kind of hard to think about."*

The above quotation – perhaps the most powerful comment made during the interview process – was obtained from one student in response to the query about why young people drink alcohol.  It came from a young woman in one of the groups and served to demonstrate two points: that there is a need for this type of exploration with Aboriginal youth, and that the students took this opportunity to share very seriously and gave an appropriate effort.  The students appeared very honest when giving their responses, despite the subject matter, and some gave personal anecdotes and related stories about situations they had experienced.

### Why Do You Drink?

*"I drink a lot, any time I get the chance."*

As illustrated by the quotation, the students drank for a lot of reasons and in a lot of different contexts. However, additional probing of those various reasons for drinking did not reveal motivations that could be considered social.  The other three motives were represented well by reasons such as: stress, escape from reality, numbing, frustration, anger, and depression (Coping); friends use it, to fit in (Conformity); and boredom, "to do things you wouldn't normally do," and "to get high" (Enhancement).  Unlike enhancement, conformity, and coping motives, a social motive for drinking did not spontaneously emerge when the students were queried about why they drink alcohol.  Although responses such as "friends use it" and "to party" seem on the surface to be an acknowledgement of social motives, they clearly emerged instead as conformity and enhancement motives when the initial responses were further probed.

Social motives have been linked to lighter and less problematic drinking than enhancement, coping, and conformity motives (Cooper, 1994) but should not necessarily be equated with light drinking. Participants identified that they were aware of light social drinking in mainstream culture.  They recognized that a social motive for drinking existed outside of their community, but it had negative connotations for them; they implied that individuals who drank for that reason were 'snobs'.  This attitude was demonstrated by the following quotation:

*"In France…there are people who drink occasionally, but they are antisocial."*

When asked what they felt were the most positive effects or consequences associated with drinking alcohol, the groups had difficulty identifying any.  Some described the numbness and 'buzz' as positive effects, but none spontaneously mentioned social affiliation as a possible positive consequence of alcohol, again suggesting the absence of a social motive in this cultural/age group. In contrast, there was much agreement with the following statements, made by a number of students:

*"There's nothing positive about drinking."*

*"[I] can't think of a positive reason at all."*

*"Nothing, there's nothing positive.  Nothing's good."*

### What is Negative?

In contrast to the overall group consensus that there is nothing positive about drinking (save some acknowledgement of enhancement and coping effects, as numbness is typically considered a coping or escape motive), the groups did describe a number of negative effects and consequences associated with drinking alcohol.  These included acute negative effects (blacking out, passing out, and alcohol poisoning), high-risk behavioral effects (fighting, making trouble, driving while intoxicated, physical/sexual abuse, and suicide), residual negative effects (hangovers, guilt, relationship break-ups, family dissolution, and financial problems), and long-term health effects (stomach ulcers and "killing yourself slowly").  It was clear that most of the group members had been exposed to many of these negative effects and consequences, and many gave personally relevant examples of the negative consequences of alcohol among their friends and families.

## General Discussion

The studies described sought to examine the motives for drinking among a group of Mi'kmaq adolescents in Nova Scotia. A factor-analytic study demonstrated that the theorized four-factor model of drinking motives (Cooper, 1994) did not emerge in this group of adolescents. Instead, it was demonstrated that a three-factor model better fit the data, with social and enhancement motives failing to separate into two distinct factors. In order to examine why this was the case, a qualitative study followed up with open-ended, semi-structured interview questions designed to tap motives for drinking (internal and external as well as positively and negatively reinforcing) and perceived positive and negative effects of alcohol in this cultural group from adolescents' own perspectives. This method allowed them to identify the reasons for drinking in their cultural group in their own words, unconstrained by the content of items on a questionnaire developed by researchers for use with another cultural group (i.e., the majority culture).

The participants most often described motives for drinking that would fall into a coping category. These students described drinking because they were depressed, frustrated, angry, lonely, sad, and stressed. They used alcohol to cope with interpersonal conflict and to numb their feelings with respect to the emotions listed previously. Numbing was one of the few positive effects of alcohol that was spontaneously acknowledged in the group interviews). The coping motive for drinking is a high-risk motive and is particularly concerning given the young ages of the participants. This internally generated negative reinforcement motive (coping) to reduce or regulate negative emotions occurred quite frequently in the descriptions of these adolescents about the reasons for drinking in their culture and age group.

The next most commonly discussed motive in the interviews was the internally generated positive reinforcement motive (enhancement), which involves alcohol use to improve mood or increase emotional well-being. This group used alcohol in response to boredom and to enable them to engage in "fun" (high-risk) behaviors that they would not normally engage in while sober. In addition, alcohol was commonly used to get high and to bring about the pleasurable feelings they experienced while under the influence. This finding would be consistent with an enhancement motive rather than a coping (with boredom) motive for alcohol use. Achieving a buzz (i.e., an enhancement-motivated drinking effect) was the only other positive effect besides numbing that was noted by the group when they were directly asked what is good about drinking.

The conformity motive also emerged quite clearly in this group. Participants described that they drank alcohol because their peers did, and to fit in:

*"That's the way it is when you are younger.  It's all peer pressure.  You say no, you don't want to get drunk and they [friends] say you should. You see how much fun they have and then you are curious.  They [friends] accuse you of being afraid, or not living."*

Some participants described pressuring their friends to use alcohol as well.  Further, the focus groups revealed that students who did not engage in alcohol consumption were considered to be "out group" members and were sometimes mocked or scoffed at. The drinkers teased the nondrinkers about being "nerds."

Although the participants in the qualitative interviews did not spontaneously cite a social motive for drinking, when directly queried, they did offer that drinking occurred in some social contexts like parties (e.g. birthdays) and other celebrations.  However, upon further probing, it became quite clear that this apparent social drinking motive was not related to peer affiliation or being social *per se*, but was much more demonstrative of enhancement-motivated drinking. That is, the social-context drinking described was heavy and high risk rather than light and nonproblematic, and the desired outcome for these social drinking occasions was typically heavy intoxication. This finding helps clarify and explain the previous factor analytic findings that social and enhancement motives load together in this group. Specifically, this group's conceptualization of socially motivated drinking is captured more accurately by the definition of enhancement-motivated drinking.

There is evidence that both abstainers and heavy drinkers exist in AI/AN cultures, with fewer people who drink in moderation (Heath, 1989). The question of whether there is a social drinking motive in these cultural groups is important.  If the cultural view is that the spectrum of drinking behavior is polarized, i.e., drinkers (problematic) versus nondrinkers (nonproblematic), then this view would represent a structural difference in drinking motives. Majority culture views on alcohol use are more continuous, with the continuum of alcohol use including nondrinkers, non-problem drinkers, problem drinkers, and those with severe alcohol use disorder (Sobell, Wagner, & Sobell, 2003).

In a risk-reduction model of intervention, the goal is a movement toward less harmful forms of drinking behavior (e.g., socially motivated drinking; Cooper, 1994). If a social motive is not present in this group, then

abstinence may be the only healthy outcome for Mi'kmaq adolescents and interventions should be adapted accordingly. Alternatively, perhaps this group could be taught to drink for less risky social affiliative reasons. The goal here would be to create a healthier fourth motive (social) for drinking. However, if this motive for drinking does not fit within the cultural understanding of alcohol use and there are few models within the community who display this reason for drinking, then such harm reduction attempts may not be successful.

## Summary

Cooper's (1994) four-factor model of drinking motives was examined within the Mi'kmaq culture by administering the DMQ-R to Mi'kmaq adolescent students in four high schools in two First Nations communities in Nova Scotia. The theorized four-factor model was not supported; instead, a three-factor solution emerged with social and enhancement motives failing to separate into two distinct factors. This three-factor solution likely did not represent factor over-extraction (given that Kaiser's criterion supported four factors) and was theoretically interpretable within Cooper's (1994) model as it was the only solution that separated the negative reinforcement factor into separate coping and conformity motives.

Subsequent qualitative methods (interviews administered in focus groups) were used to examine potential reasons why three factors emerged instead of four. The most important finding was that the social motive for drinking seemed not to exist in this cultural group. That is, there was an absence of clear content on social motives for drinking in adolescents' spontaneously generated answers to a question probing reasons for drinking. In addition, the motive that this group labeled as social (drinking that occurs during social celebrations, birthday parties, etc.) appeared to be more representative of enhancement-motivated drinking and included heavy alcohol use. Most importantly, intoxication – rather than social affiliation – appeared to be the desired outcome of drinking in such social contexts.

This paper examined the structural validity of the DMQ-R. In order to explore other types of validity, the relationships between the subscales of the DMQ-R and other measures will need to be examined. This further research will clarify both the convergent validity (i.e., relationships that would be expected, based on theory) and discriminant validity (i.e., relationships that would be theorized not to exist) of this measure. While

reliability and structural validity are critical first steps, future research will need to examine whether the new proposed structure has better concurrent and predictive validity in this group.

A potential limitation of the research is the fact that young people might have difficulty discussing such sensitive information in the presence of peers, as they were asked to do in the focus groups; discussing social motives within what could be seen as a social context (i.e., focus group) could prevent students from speaking about their experiences with alcohol in a social context. However, it became clear that the students were speaking very openly and honestly, as evidenced by the content of the focus group data and verification from adults (i.e., guidance counselors) who are very familiar with the students and the contexts in which they drink. As well, this paper did not include an investigation of the community's goals and values with respect to alcohol use, and how these goals and values might fit with youths' reasons for drinking (e.g. differences in perceptions around alcohol and the possible lack of social drinking role models to emulate safer, socially motivated drinking). Future investigation of this topic would be helpful.

Clinically, the most important implications are the need for an adjustment to interventions based on risk-reduction models and a consideration of a different scoring procedure for the DMQ-R in this cultural group. A risk-reduction approach would suggest that a movement toward less harmful (i.e., social; Cooper, 1994) motivations for drinking is the most effective goal within the intervention framework. Because of the association of the social motive with light, infrequent, and nonproblematic drinking behavior (in the majority culture; Cooper, 1994), a movement toward this motive for drinking could reduce harm. However, because social drinking motives did not emerge within this group, abstinence may be the only healthy outcome supported in the community for Mi'kmaq adolescents. With this population, scoring the social motive items on the DMQ-R as enhancement motives may identify individuals' motives for alcohol use more clearly than the traditional scoring method, which may identify potentially problematic use patterns (enhancement) as nonproblematic (i.e. social). These implications for treatment and prevention require further investigation.

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