BRIEF REPORT

A COMPARISON OF MOTIVES FOR MARIJUANA AND ALCOHOL USE AMONG EXPERIENCED USERS

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Abstract — Motivational models suggest that individuals use substances to achieve desired effects. Given different pharmacological effects across drug classes, and variations in social context, one would expect that the motives instigating use differ by drug class. However, commonalities in motives across drugs have also been observed. The purpose of this study was to examine similarities and differences across a common set of motives for alcohol and marijuana among experienced users of both drugs. Participants were 46 college students (21 women) who completed a motives assessment twice, once for marijuana and once for alcohol. All had used each drug 60 or more times in their lifetime. Social motives were more highly endorsed for alcohol than marijuana. Expansion motives were more highly endorsed for marijuana. Enhancement motives were more highly endorsed for marijuana than alcohol among women but not men. Endorsement of coping and conformity motives did not differ across drugs. Experienced users of marijuana and alcohol discriminate between their reasons for using the two drugs. These findings are discussed with regard to the differentiation between and commonalities among substances of abuse.

Cognitive motivations for drug use are believed to represent sought-after effects of the drug. Motives research can enhance understanding of the functional role of a particular drug for an individual user; hence, increased specificity in motives assessment represents a desirable goal. This trend towards increased specificity is apparent within the alcohol field, where motivational assessments have moved from two dimensional measures (e.g., Bradley, Carman, & Petree, 1991; Farber, Khavari, & Douglas, 1980; Mulford & Miller, 1960) to theoretically-based four factor measures (Cooper, 1994).

Recent research supports the psychometric soundness of several multidimensional measures of motives for alcohol use (e.g., Carey & Correia, 1997; Cooper, 1994; Cooper, Frone, Russell, & Mudar, 1995; Cooper, Russell, Skinner, & Windle, 1992; Newcomb, Chou, Bentler, & Huba, 1988; Stewart, Zeitlin, & Samoluk, 1996). In particular, the Drinking Motives Measure (DMM), developed by Cooper and colleagues has received extensive empirical support across a range of populations (Cooper, 1994; Cooper et al., 1992, 1995; Stewart et al., 1996; Mueser, Pallavi, Tracy, DeGirolamo, & Molinaro, 1995) The DMM consists of four factors: enhancement motives, coping motives, social motives, and conformity motives. Cooper (1994) reported that all four motives relate to the quantity and frequency of alcohol consumption; coping or negative reinforcement motives have been shown to predict use-related problems over and above measures of consumption (Carey & Correia, 1997; Cooper, 1994). These findings suggest that use-related problems are not merely a function of consumption.

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Rather, the individual’s motivation for drinking influences the likelihood of experiencing negative consequences.

Despite marijuana’s status as the most commonly used illicit drug, few researchers have examined motives for marijuana use (Johnston, O’Malley, & Bachman, 1994). To our knowledge, only one scale for assessing marijuana motives has been empirically validated (Newcomb et al., 1988). This scale, developed to apply to both marijuana and alcohol, consists of four factors: enhance positive affect and creativity, reduce negative affect, social cohesion, and addiction. Thus, previous research comparing alcohol and marijuana use motives has focused on the generality of motives across the two drugs (Newcomb et al., 1988; Stacy, Newcomb, & Bentler, 1991). The extent to which motives vary across drug types has yet to be determined. A pattern of both convergence (Newcomb et al., 1988) and divergence (Annis & Graham, 1994; Newcomb et al., 1988; Schafer & Brown, 1991) between alcohol and marijuana motives is expected based on previous research on motives, expectancies, and risk situations. Functional specificity would be evidenced by motivational differences across drug type (i.e., I use alcohol more for purpose x and marijuana more for purpose y). A lack of discrimination between motives for alcohol and marijuana use may be evidence of common reinforcement properties of the two drugs. Additionally, convergence of certain motives across drugs may indicate that endorsement of the motive is more related to personality variables than specific anticipated drug effects.

We conducted the present study to examine intra-individual motivational differences across drug type among experienced alcohol and marijuana users. The DMM was used to assess motives for alcohol use and adapted to assess motives for marijuana use. In addition, we developed a fifth subscale for the four factor DMM (Simons, Correia, Carey, & Borsari, 1998); the additional subscale was developed to reflect motives for marijuana use related to seeking perceptual and cognitive enhancement, labeled expanded experiential awareness (expansion). Focusing on a sample of individuals who have extensive and comparable experience with both alcohol and marijuana enables us to examine the extent to which individuals’ motives discriminate between the drugs. We hypothesize that expansion motives will be endorsed more for marijuana than alcohol. Previous research is insufficient for making specific predictions about differences for the other motives across drugs.

M E T H O D

Participants

The sample consisted of 46 introductory psychology students at Syracuse University participating in research for partial fulfillment of course requirements. The sample was 53% male. They ranged in age from 18 to 22 years ($M = 18.94; SD = 0.94$); 85% were white, 2% black, 4% Hispanic, 6% Asian, and 2% other (percentages do not add to 100 due to round-off error). Mean number of years of formal education was 12.81 years ($SD = 0.97$). Research has indicated that motives for use of alcohol and marijuana change with experience (Newcomb et al., 1988). Therefore, comparisons across drugs need to be made within individuals equally experienced with each drug. This sample was selected from a pool of 308 college students, based on their self-reported use of both alcohol and marijuana 60 or more times in their lifetime. Distribution of lifetime use of both alcohol and marijuana in the full sample was as follows: 6% no use, 53% tried each at least once, 42% used each 6 or more times, 36% used each 10 or more times, 31% used each 20 or more times, 22% used each 40 or more times, 15%
used each 60 or more times, 12% used each 80 or more times, and 9% used each 100 or more times. The selection criteria is admittedly somewhat arbitrary, and was chosen because it is the most experienced subsample of adequate size for comparison available in the data set. However, this selection criteria provides a subsample who have well established motives for use of both alcohol and marijuana (see Simons et al. (1998) for characteristics of the full sample from which this group of experienced users was drawn).

**Measures**

**Use indices.** Substance use behavior was assessed by self-report. Extensive evidence supports the validity of self-reported drug use when participants’ confidentiality is assured (Johnston & O’Malley, 1985). In this regard, the questionnaire included no identifying information and consent forms described the numeric coding scheme designed to insure confidentiality. Hays and Huba (1988) reported anchored rating scales for 12-month use had average test-retest correlations of .83 or greater across different drugs in a college student sample. The reliability of lifetime use was higher, average test-retest correlations were .92 or greater across drugs (Hays & Huba, 1988). We assessed both alcohol and marijuana use in the past 6 months with 9-point anchored rating scales: (0) no use, (1) less than once a month but at least once in the last 6 months, (2) once a month, (3) 2–3 times/month, (4) once or twice/week, (5) 3–4 times/week, (6) nearly every day, (7) once a day, and (8) more than once a day. Lifetime experience using marijuana and alcohol were also assessed by 9-point anchored rating scales: (0) no use, (1) 1–5 times, (2) 6–9 times, (3) 10–19 times, (4) 20–39 times, (5) 40–59 times, (6) 60–79 times, (7) 80–99 times, and (8) 100 or more times.

We assessed alcohol-related problems using the Rutgers Alcohol Problem Index (RAPI) (White & Labouvie, 1989). The scale consists of 23 items assessing presence of specified problems with alcohol over the course of an individual’s lifetime. We used a modified version of the RAPI to assess problems with marijuana use (Johnson & White, 1989). To adapt the scale to pertain to marijuana use, we substituted “marijuana” for “alcohol,” “smoking” for “drinking,” and “high” for “drunk.” Cronbach alphas for the marijuana and alcohol problem indices were .80 and .85 in this sample, respectively.

**Motives.** The Drinking Motives Measure (DMM) is a 20-item questionnaire assessing four motives for drinking. The motives and representative items are as follows: enhancement (I drink to get high), coping (I drink to forget my worries), social (I drink to be sociable), and conformity (I drink so that others won’t kid me about not drinking) (Cooper, 1994). Each item has a 5-point response option, ranging from (1) Almost never/never to (5) Almost always/always. Participants are instructed to consider all the times they have drunk alcohol and to indicate how often they have drunk alcohol for each reason. The questionnaire was adapted for marijuana by substituting “use marijuana” for “drink.” In addition, we created a fifth motives scale consisting of the following items: (1) I use alcohol/marijuana so I can know myself better, (2) I use alcohol/marijuana because it helps me be more creative and original, (3) I use alcohol/marijuana so I can understand things differently, (4) I use alcohol/marijuana so I can expand my awareness, and (5) I use alcohol/marijuana to be more open to experiences. Items 1, 2, and 3 are taken from Newcomb and colleagues (1988). Items 4 and 5 were generated by the authors. The expansion motives items were placed at the end of the respective alcohol and marijuana motives questionnaires. The expansion motives
scale has demonstrated good discriminant and concurrent validity and internal consistency (alpha = .93) (Simons et al., 1998).

**Procedure**

Participants provided written informed consent before completing the questionnaires. Questionnaires were coded by a unique number rather than by name. At the end, all participant’s questions were answered, and anyone with concerns about their substance use or interested in obtaining further information was provided a list of local resources. The motives measures preceded the problem indices and order was counterbalanced across drugs. Use frequency measures appeared at the end of the questionnaire.

**RESULTS**

**Substance use patterns**

Participants reported using both alcohol and marijuana an average of 1–2 times a week in the past 6 months (rating scale means, alcohol $M = 4.33$, $SD = 1.27$; marijuana $M = 4.48$, $SD = 2.39$). Participants reported an average of 10.79 ($SD = 4.83$) use-related problems on the alcohol problem index and 8.64 ($SD = 4.30$) use-related problems on the marijuana problem index. Correlations between the drug use indices are presented in Table 1. The alcohol and marijuana problem indices correlated significantly with one another ($r = .40$, $p < .01$), but the use indices did not ($r = .10$, $p < .51$). Past 6-month marijuana use was not significantly correlated with lifetime problems in this subsample ($r = .01$, $p < .95$). Past 6-month alcohol use did correlate significantly with lifetime alcohol-related problems ($r = .41$, $p < .01$). However, among the lifetime users of each drug from which this subsample was drawn, the respective use and problem indices were strongly correlated for both drugs (alcohol use-alcohol problems; $n = 277$, $r = .54$, $p < .0001$: marijuana use-marijuana problems, $n = 160$, $r = .42$.

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<td>10. Expansion-al</td>
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<td>.30</td>
<td>-.11</td>
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<td>12. Alcohol use</td>
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<td>.43</td>
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<td>13. MPI</td>
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<td>.17</td>
<td>.24</td>
<td>.24</td>
<td>-.05</td>
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<td>.02</td>
<td>.01</td>
<td>.17</td>
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<td>14. RAPI</td>
<td>-.28</td>
<td>.05</td>
<td>-.03</td>
<td>.09</td>
<td>.04</td>
<td>.25</td>
<td>.46</td>
<td>.15</td>
<td>.12</td>
<td>.05</td>
<td>-.21</td>
<td>.41</td>
<td>.40</td>
<td>.85</td>
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Note. Cronbach’s alpha coefficients appear on the diagonal. Marijuana and alcohol use refer to the last 6 months. MPI = Marijuana Problem Index; RAPI = Rutgers Alcohol Problem Index; mj = marijuana; al = alcohol. For $N = 46$, $r \geq .30$ are significant at $p < .05$; $r \geq .38$, $p < .01$.

$^1 N = 44$, due to missing data. Triangular shaded areas indicate within-drug motive correlations. Diagonal shaded areas indicate across-drug motive correlations. Horizontal shaded bars indicate within-drug correlations between motives and the use and problems indices.
Thus, the use and problem indices of both alcohol and marijuana demonstrate concurrent validity in the larger sample.

Motives
Analyses support the internal consistency of all of the motives scales. As illustrated in Table 1, Cronbach alphas ranged from .72 (alcohol and marijuana conformity motives) to .91 (alcohol, social, and coping motives and marijuana expansion motives). Correlations between corresponding motives across drugs range from .72 (conformity motives) to .17 (enhancement motives). Except for enhancement motives, all motives were significantly correlated across drugs (p’s < .05). Within drug type, the pattern of correlations across motives supports the distinctiveness of the five motives, as the motives were not highly correlated with one another.

For both alcohol and marijuana, motives were significant correlates of use and related problems. Alcohol enhancement and social motives were significant correlates of alcohol use (r = .43, p < .01 and r = .33, p < .05, respectively). Only coping motives were significantly correlated with alcohol-related problems (r = .46, p < .01). For marijuana, expansion motives were significantly correlated with use (r = .30, p < .05).

We conducted a series of matched pairs t-tests to compare motives for use of alcohol and marijuana (see Table 2). The criterion for significance was p < .01 (the Bonferroni correction for the five planned comparisons). Social motives were more highly endorsed for alcohol than marijuana (t(45) = −4.93, p < .0001). Expansion motives were more highly endorsed for marijuana than alcohol (t(43) = 5.13, p < .0001). Enhancement, coping, and conformity motives did not differ across drugs.

To evaluate the consistency of results across gender, the matched pairs t-tests were repeated separately for men and women. These comparisons revealed a similar pattern of results; however, for women, enhancement motives were more highly endorsed for marijuana (M = 4.29, SD = 0.81) than alcohol (M = 3.57, SD = 1.12), t(20) = 3.04, p < .01). Enhancement motives were not differentiated in men (marijuana: M = 3.89, SD = 0.75; alcohol: M = 3.72, SD = 1.04; t(24) = 0.65, p < .53). Social motives did not significantly differ across drugs in women (alcohol: M = 3.52, SD = 1.24; marijuana: M = 3.03, SD = 1.02; t(20) = −2.21, p < .05) but did in men (alcohol: M = 4.29, SD = 0.85; marijuana: M = 3.07, SD = .99; t(24) = −4.81, p < .0001).

Table 2. Summary statistics for motives scales

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<thead>
<tr>
<th>Motives scale</th>
<th>Marijuana</th>
<th>Alcohol</th>
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<tbody>
<tr>
<td>M (SD)</td>
<td>M (SD)</td>
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<tr>
<td>Enhancement</td>
<td>4.07 (0.80)</td>
<td>3.65 (1.07)</td>
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<tr>
<td>Coping</td>
<td>2.18 (1.10)</td>
<td>2.43 (1.14)</td>
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<tr>
<td>Social**</td>
<td>3.05 (0.99)</td>
<td>3.80 (1.06)</td>
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<tr>
<td>Conformity</td>
<td>1.19 (0.35)</td>
<td>1.20 (0.37)</td>
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<tr>
<td>Expansion**</td>
<td>2.60 (1.27)</td>
<td>1.61 (0.85)</td>
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Note. N = 46. Scale range is 1–5, higher numbers indicate more frequent motives for use.

*p < .01; **p < .0001 on matched pairs t-tests.

* N = 45 due to missing data.
DISCUSSION

A pattern of convergence and divergence for a common set of motives emerged across two drug types, alcohol and marijuana. The results of this study demonstrate that experienced users of alcohol and marijuana do discriminate between their reasons for using the two drugs. As hypothesized, participants endorsed marijuana expansion motives significantly more than alcohol expansion motives. In contrast, social motives were more strongly endorsed for alcohol use in the full sample. The lack of significant differences in social motives in women may be attributed to the reduced power of the test, as the ordering of the means was consistent across genders. Motives for expansion of experiential awareness and social facilitation may entail drug-specific expectations or reflect social custom (cf. Brown, Goldman, Inn, & Anderson, 1980; Critchlow, 1986; Schafer & Brown, 1991). For example, expected effects of the marijuana high entail perceptual and cognitive enhancement (Schafer & Brown, 1991). In contrast to marijuana, use of alcohol at social functions is a widely accepted American custom (Critchlow, 1986). Enhancement motives were differentiated only among women, who were more likely to report using marijuana to enhance positive emotional states. Reasons for this gender difference are unclear.

The results also demonstrate that some motives generalize across drugs, thus replicating results of previous research. Notably, coping and conformity motives were endorsed equally for both alcohol and marijuana. Drug use has been identified as a type of emotion-focusing coping (Lazarus, 1991; Westen, 1994). It is possible that alcohol and marijuana share similar expected capacities to relieve negative affect in this population. Conformity motives were also not differentially endorsed across drugs. This may be related to the low rate of endorsement of these motives in general. However, relative to the other motives, conformity motives were strongly correlated across drugs. Individuals who endorse alcohol conformity motives also tend to endorse conformity motives for marijuana use, and, perhaps, for behaviors unrelated to substance use. Thus, the endorsement of conformity motives may be less related to specific expectations about drug effects but rather the individual’s characteristic manner of social interaction.

Taken together, the pattern of results from this study demonstrates that marijuana and alcohol play different functional roles for experienced users. Participants discriminated between their reasons for using marijuana and alcohol on three of the four motives examined. Participants reported using alcohol more for social facilitation while using marijuana more for expansion of experiential awareness. In addition, women reported using marijuana more than alcohol for the enhancement of positive affect. In agreement with previous research, the results also demonstrated convergence in drug use motives. This convergence may be the result of common anticipated effects of specific drugs and their consequent functional role, individual strategies for affect regulation that are not drug-specific, or enduring patterns of social behavior.

Participants had comparable experience with marijuana and alcohol, and recent use of the two drugs was essentially equivalent in the sample. However, recent use of marijuana and alcohol were weakly correlated. Thus, participants were not consistently using the drugs concurrently. This lends confidence to the ability of the participants to assess their motives for using each of the drugs separately. The participants were able to consider times when they used each of the drugs separately and thus differentiate the effects of the two drugs and their reasons for using them.

The strengths of this study include the nature of the sample; all participants had used both alcohol and marijuana at least 60 times in their lifetime. Thus, we attempted
to ensure that all participants would have an adequate and comparable experiential base from which to rate motive strength. Another strength of the study is the development of a motives assessment that allows comparison of drugs on a common metric. All five scales on the expanded motives questionnaires were internally consistent, in both the alcohol and marijuana versions. Relationships between motives and use and problems support the validity of our motives assessment. Specifically, significant correlations of alcohol enhancement and social motives with alcohol consumption replicates the previous findings of Cooper (1994; Cooper et al., 1992). Similarly, the association of coping motives with alcohol-related problems also parallels previous research (Carey & Correia, 1997; Cooper, 1994). Although marijuana motives have received less attention, the correlation between motives for expansion of experience and marijuana use makes rational sense.

The primary limitation of this study is the small sample of college students. Replication of the results is needed to demonstrate the generalizability of the findings to other samples of college students as well as noncollege samples. Although the statistical tests clearly identified similarities and differences across drugs, greater differentiation may be apparent with enhanced power. Future research with larger samples of experienced users may help to determine whether or not coping and conformity motives consistently generalize across drugs.

The importance of individual assessment of risk and factors encouraging risk taking behavior has become increasingly clear in substance abuse interventions that include motivational components (Miller & Rollnick, 1991). Differentiation of use motives across drugs is indicative of the functional specificity of drug use. The environmental and intrapersonal stimuli associated with the use of alcohol and marijuana may differ within individuals. Thus, increasing understanding of motivational sequelae specific to these drugs may enhance prediction of use patterns and provide information relevant to tailoring interventions for use-related problems.

**REFERENCES**


