A Psychographic Analysis of College Students’ Alcohol Consumption:
Implications for Prevention and Consumer Education

Soyeon Shim
University of Arizona

Jennifer L. Maggs
Pennsylvania State University

On the basis of alcohol consumption rates, the authors segmented a sample of college students (N = 669) into four types: the non/seldom drinker (17%), the social drinker (43%), the typical binge drinker (25%), and the heavy binge drinker (14%). Once the four segments were defined, each was profiled employing a psychographic scheme that encompasses personal values, beliefs regarding drinking, alcohol shopping orientations, situational contingencies, and demographics. Binge drinkers were best differentiated from social drinkers and non/seldom drinkers by social-hedonic characteristics such as social-affiliation values, psychological consequences of drinking, recreational shopping orientations, and social situations. Binge drinkers were also differentiated by several other market/consumption relevant factors. On the other hand, several utilitarian characteristics, such as health/moral consciousness, differentiated non/seldom drinkers from other groups. Discussion and the implications of this study are presented with the goal of aiding binge drinkers themselves as well as prevention and intervention practitioners.

Keywords: college students; alcohol consumption

Without any reasonable doubt, drinking alcohol has become a common social activity on college campuses across the nation during the past half century (Schulenberg & Maggs, 2002; Straus & Bacon, 1953). A recent Harvard College Alcohol Study report (Wechsler et al., 2002) confirms this perpetuating trend, particularly with respect to binge drinking (typically defined as the consumption of four, five, or more drinks by women/men on any single occasion). According to the report, despite the increased prevention efforts in recent years, the number of binge drinkers (44%) on college campuses did not decline between 1993 and 2001. These statistics send an alarming signal to campus and public health administrators because college-age drinking seriously threatens the goals of health advocates, institutions of higher learning, and society in general. For instance, it is estimated that 1,400 alcohol-related deaths occur among American college students annually (Hingson, Heeren, Zakoes, Kopsein, & Wechsler, 2002). Excessive alcohol use also contributes to academic failure as well as physical illness, violence, and accidental injury not only for the abuser but to others as well (Chassin, Pitts, & Prost, 2002).

The traditional college student years (emerging adulthood, ranging from 18 to 25 years of age) represent a developmental stage distinct from other periods. During this critical developmental period, emerging adults develop a subjective sense of
identity through experimentation and explorations, often involving risk-taking behaviors (Erikson, 1968); begin to make long-term decisions about their personal lives (Arnett, 2000); and develop new consumption patterns—patterns that exert a major influence on their behavior as consumers throughout adulthood (Olshavsky & Granbois, 1979). The emerging-adult period is, for example, characterized as an important juncture in the etiology of adult alcohol abuse and alcoholism, when escalation of heavy drinking may set the stage for lifelong difficulties with alcohol (Zucker, 1987).

To this end, we designed our study to provide additional insight into the alcohol consumption behaviors of college students, focusing on two specific objectives: (a) to segment college students based on their rates of alcohol consumption and (b) to subsequently profile each segment by employing a psychographic technique encompassing personal values, beliefs regarding drinking consequences, alcohol-consumption orientations, situational factors, and demographics. We argue that to more fully understand why students drink and help them to act more wisely as consumers, we must better understand from a broad perspective what they think about drinking and how drinking fits into their lives.

BACKGROUND AND HYPOTHESES DEVELOPMENT

Personal Values

Personal values, by representing a motivational domain, serve as guiding principles in the lives of individuals and symbolize an individual’s ideology regarding behaviors and ultimate outcomes (Rokeach, 1973). Personal values are centrally held beliefs (highest order) directing (lower level) conduct and decision making (Burgess, 1992). Previous empirical investigations have examined and confirmed the role of personal values in guiding individual behavior in general (e.g., Rohan, 2002) and consumption behavior in particular (Homer & Kahle, 1988; Shim & Eastlick, 1998).

To identify and measure personal values, we adopted Kahle’s (1983) List of Values (LOV), focusing on two domains of personal values: self-actualizing and social-affiliation. Self-actualizing values relate to one’s inner self and are utilitarian (e.g., self-fulfillment, self-respect, a sense of accomplishment). Social-affiliation values, on the other hand, are primarily hedonic (e.g., fun and enjoyment of life). Previous research linking college students’ personal goals with alcohol use provides insight into the proposed relationships between personal values and an individual’s rate of alcohol consumption. In pursuit of social affiliation, hedonic pleasure, or sensation, college students prove willing to take greater risks than they would when pursuing other goals (e.g., Katz, Fromme, & D’Amico, 2000). In fact, when pursuing academic and health goals, students will, predictably, drink less (Maggs, Vesterdal, Lee, & Korn, 2004). Similarly, social conformity (e.g., law abidance) is negatively related to risk taking (Katz et al., 2000; Newcomb & McGee, 1991). We assume that the pursuit of hedonic and social-affiliation values is conceptually relevant to social-affiliation motives and sensation-seeking propensities. On the other hand, we regard the concept of self-actualizing values as relevant to the pursuit of instrumental academic
goals and the desire to conform to the behavioral norms that society expects of adults. Consequently, we have developed the following hypothesis:

**Hypothesis 1.** Heavy users of alcohol will display stronger social-affiliation values (H1a) and weaker self-actualization values (H1b), as compared to light users of alcohol.

**Beliefs About Consequences of Drinking**

Beliefs are interpretations of the environment, and people learn, store, and process beliefs to guide their behaviors (Murry, Lastovicka, & Austin, 1997). Beliefs play a crucial role in determining attitudes, in predicting behavior, and in understanding the causes of behaviors (Ajzen & Fishbein, 1980). In the context of alcohol consumption, two types of drinking beliefs—psychological and physical—are particularly important in predicting the quantity and frequency of an individual’s alcohol consumption. Psychological beliefs are frequently associated with the positive consequences of drinking (e.g., facilitating social interaction), whereas physical beliefs are frequently associated with the negative consequences of drinking (e.g., hangover, diminishing physical or mental abilities). Heavy users of alcohol tend to more strongly believe that alcohol facilitates social interactions and believe less strongly that alcohol diminishes their physical or mental abilities (Plant, Bagnall, & Foster, 1990).

We attempted to expand the domain of drinking beliefs by examining beliefs that may form as a result of being influenced by marketing and consumption factors. Alcohol marketers, when targeting young consumers in particular, use price specials to create the perception that the product has gained in value, frequently focus on the consumer’s beliefs regarding self-image, and seek to present a specific product as consistent with that image (Erenberg & Hacker, 1997; Goldberg, Gorn, & Lavack, 1994). Although the experimental and econometric evidence of the effects of alcohol advertising on consumption is mixed (U.S. Department of Health and Human Services, 2000), surveys suggest positive associations between exposure to and awareness of alcohol advertisements and use among children and adolescents. Therefore, we expected heavy users of alcohol to display stronger beliefs regarding various drinking consequences. This led us to the following hypothesis:

**Hypothesis 2.** As compared to light users, heavy users are likely to hold stronger positive beliefs regarding a wide range of consequences of drinking, ranging from psychological consequences to marketing-induced and consumption-relevant consequences.

**Alcohol Consumption Orientations**

We define an alcohol consumption orientation as an individual’s mental approach to consuming alcohol. Consumers with particular psychographics display particular consumer characteristics and market behaviors, including particular needs and preferences for information sources (Moschis, 1976), and they prefer to shop at stores with particular attributes (Shim & Drake, 1990). Typically, heavy shoppers focus more on hedonic/consumption-focused aspects (e.g., recreational) than on utilitarian aspects (e.g., price, time, and/or health consciousness) as do light shoppers (Shim & Kotsiopulos, 1993). In the belief that heavy users of alcohol
will demonstrate the consumption orientations of heavy shoppers (i.e., focusing more on hedonic aspects than on the utilitarian aspects), we formed our third hypothesis:

**Hypothesis 3.** As compared to light users, heavy users of alcohol will display a stronger propensity toward market-focused/hedonic consumption orientations and a weaker propensity toward individual moral/health-focused utilitarian orientations.

**Situational Contingencies**

The process that consumers use when making purchasing decisions necessarily involves specific “situational influences,” which include the physical, social, temporal, and task-definition dimensions of the purchase process; these are independent of the consumer and also of the characteristics of the stimulus itself (Belk, 1974). Also, a myriad of situational factors may be relevant to any specific consumption setting. However, in the context of alcohol consumption, the most relevant situational contingencies might involve consumption situations, communication situations, and volitional behavior.

First, we hypothesized that **alcohol consumption situations** will have a significant influence on alcohol consumption. For instance, demand for a certain brand of alcohol can be higher “on premises” (at bars and restaurants) than in-home consumption. Second, we expected to find that **communication situations** (those settings in which the consumer engages in either personal or nonpersonal communication) exert an influence on alcohol consumption. Consequently, we anticipate heavy drinkers more likely than light drinkers will be influenced by both personal and nonpersonal communication. Finally, we expect to find that **situational volitional behavior**, the ability to control one’s behavior at will (Ajzen, 1991), to be related to the amount and frequency of drinking. Research also indicates that any incremental increase in the accuracy of predicting behavior, as provided by perceived behavioral control, depends on the degree of volitional control one has over the behavior (Madden, Ellen, & Ajzen, 1992). However, the more that a behavior becomes dependent on situational factors outside a person’s control, the less that it can be considered as under volitional control (Ajzen, 1991). Therefore, we expect to find that heavy drinkers have greater difficulty controlling their behavior than do light drinkers.

Considering all three situational contingencies, we offer this hypothesis:

**Hypothesis 4.** As compared to light users, heavy users will drink more frequently in all situations (H4a), will be influenced more by both personal and nonpersonal communication situations (H4b), and will have a greater difficulty with controlling their behavior (H4c).

**Demographics**

Although an increasing number of female students engage in binge drinking (Morse, 2002; Wechsler et al., 2002), the heavy-drinker segment is still composed of more males than females. Therefore, we believe gender to be an important predictor as well as such other demographic factors as the individual’s living arrangement.
(Maney, 1990; Wechsler et al., 2002), academic achievement (Lopez-Frias et al., 2001), age (Heath, 2000; Nadeau, 1999), and work status (Schulenberg & Maggs, 2002). Therefore, we hypothesized the following:

**Hypothesis 5.** Gender, age, living arrangement, academic achievement, and working status will influence alcohol consumption. More specifically, as compared to light users, the heavy user of alcohol is hypothesized to be more likely to be male, to live in a setting that provides less supervision, to have lower academic standing, and to work.

**METHOD**

**Data Collection and Respondent Characteristics**

We collected survey data from undergraduate students enrolled in various courses at a major state university in the Southwest. To ensure representative sampling, we created a $2 \times 2$ matrix consisting of class standing (lower vs. upper divisions) and the field of study (social science vs. natural science or engineering). Fifteen out of 20 instructors, who were selected systematically from the class list, were willing to allocate a portion of their class hours to in-class data collection during the specific period deemed appropriate. The survey consisted of a six-page booklet that took approximately 10 minutes for most respondents to complete.

A total of 669 respondents completed usable surveys. Approximately 60% of the respondents were female and 40% were male. The respondents represented various ethnic groups, with the White group being the most common (65%), followed by the Hispanic (12%), Asian American (6%), Multicultural (7%), African American (4%), and Native American (2%) groups. The respondents represented all levels of class standing: freshmen (17%), sophomores (36%), juniors (26%), and seniors (21%). Most respondents (85%) were in the traditional 18-to-22-year-old category. Sixty percent of the respondents reported living off campus without parent(s), whereas 12% reported living with parent(s). The remaining 28% reported living on campus (20% at a residence hall, 8% at a fraternity/sorority). Many areas of study were represented, with social/behavioral science students and humanities students comprising 46% of the group, business students comprising 26%, natural sciences and engineering students comprising 16%, and undecided students comprising 12%.

**Focus Group Interviews**

To gain a better understanding of college students’ drinking motivation and shopping behavior, two focus group interviews were conducted with 10 students in each group. Each group included students from both genders, ranging from freshmen to seniors. Questions focused on general consumption behavior (why, when, how much, where, what types, with whom) as well as shopping orientations and attributes (what’s important when buying alcohol at a bar vs. for in-home consumption). Questions were also asked with regard to beliefs about consequences of drinking. The results of the focus group interviews served as a basis of developing survey questions, particularly regarding beliefs about drinking consequences, alcohol consumption orientations, and situational influences.
Measures

Personal values. Relying on Kahle’s (1983) LOV scale, we asked each respondent to indicate on a 7-point scale how important each of the nine values was in his or her daily life (1 = relatively less important, 7 = extremely important). A principal components factor analysis revealed two factors (one item—warm relationships with others—was deleted due to high loading on both factors). The first factor, self-actualizing values, consisted of five items (i.e., a sense of accomplishment, self-respect, being well respected, self-fulfillment, and security). Social-affiliation values included three items (i.e., excitement, fun and enjoyment of life, and sense of belonging). The factor loadings ranged from .54 to .83, and the total variance explained was 61%.

Belief about drinking consequences. Maggs and Vesterdal’s (2004) scales for measuring the perceived Importance of Consequences of Drinking (ICOD) scale provided belief attributes related to the physical and psychological consequences of drinking alcohol. Other attributes, related to marketing, consumption, and product-driven beliefs, were generated from the focus group interview. Respondents were asked to indicate on a 7-point scale (1 = extremely unlikely to 7 = extremely likely), regardless of whether they reported drinking or not, how likely or unlikely, in their estimation, alcoholic beverages were to provide each of the 30 product attributes or experiences. The principal factor analysis revealed six factors, retaining 25 items (see Table 1). Items with a factor loading of less than .40 and/or those loaded on more than one factor were eliminated. The factor loadings ranged from .53 to .92, and the total variance explained was 69.0%.

Alcohol consumption orientations. Based on previous consumer research studies (e.g., Shim & Bickle, 1994) and the focus group interviews, we identified additional a priori orientations relevant to drinking. We then subjected a total of 38 statements (1 = strongly disagree, 7 = strongly agree) reflecting these orientations to a principal factor analysis, which revealed five factors (see Table 2). The total variance accounted for was 77%.

Situational contingencies. We assessed four typical drinking consumption situations: when alone, when at a party, when at a bar, and when with one friend or romantic partner. Respondents were asked to indicate on a 7-point scale (1 = never, 7 = frequently) the frequency with which they had consumed alcohol in each of the situations during the past 1-month period.

To measure the influence of communication situations, respondents were asked to indicate on a 7-point scale (1 = no influence at all, 7 = significant influence) the extent to which they were induced to consume alcohol by each of the eight sources of influence. A principal factor analysis revealed two factors: personal (e.g., my friends, my girlfriend or boyfriend, my parents, my family members) and nonpersonal (e.g., TV commercials, magazine ads, Internet). Factor loadings ranged from .64 to .85, and the total percentage of variance accounted for was 67%. The alpha coefficients were .78 and .82, respectively.

We assessed the influence of situational volitional behavior by asking respondents to imagine that they had decided they would not want to drink on a particular evening. They were then asked to indicate on two 7-point semantic scales how
difficult or easy and how challenging or unchallenging it was to stick to their plan. We measured their responses to two situations: (a) when alone and (b) when at a party, at a bar, or with a friend or romantic partner. Finally, we asked respondents to indicate their gender, age, class standing, work status, living arrangement, major field of study, and GPA.

**Drinking frequency and average amount per occasion and classification of respondents.** Two variables assessed respondents’ consumption of alcohol: frequency and amount. We asked respondents to indicate how often they had drunk beer, wine, or liquor during the previous 1-month period, using a scale ranging from 1 (none) to 8 (every day). We also asked them to indicate the average number of drinks they had consumed on each occasion, on average, during the previous 1-month period, ranging from 1 (none) to 7 (more than 12 drinks). These two variables were then cross-tabulated to classify respondents into the four categories: nondrinkers, social drinkers, typical binge drinkers, and heavy binge drinkers (see Figure 1). Eighteen percent of the respondents reported that they had not drunk or had rarely drunk over the past 1-month period. These were classified as non/seldom drinkers. Those who

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**TABLE 1: Factor Analysis of Beliefs Regarding Drinking Consequences**

<table>
<thead>
<tr>
<th>Factor Statements</th>
<th>Factor Loading</th>
<th>Eigenvalue</th>
<th>Percentage of Variance</th>
<th>Cronbach’s Alpha Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1: Psychological consequences</td>
<td></td>
<td>5.44</td>
<td>20.3</td>
<td>.91</td>
</tr>
<tr>
<td>Helping me relieve stress</td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helping me relieve boredom</td>
<td>.77</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helping me relax</td>
<td>.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helping me have more fun</td>
<td>.71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helping me feel close to friends</td>
<td>.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helping me escape from it all</td>
<td>.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helping me feeling alert/alive</td>
<td>.57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 2: Physical consequences</td>
<td></td>
<td>4.72</td>
<td>14.8</td>
<td>.89</td>
</tr>
<tr>
<td>Suffering a hangover</td>
<td>.91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Getting sick</td>
<td>.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Losing control of myself</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Getting drunk</td>
<td>.74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 3: Safe/responsible consequences</td>
<td></td>
<td>3.01</td>
<td>10.5</td>
<td>.77</td>
</tr>
<tr>
<td>Safe choice for driving</td>
<td>.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Showing people I am responsible</td>
<td>.73</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 4: Intrinsic product enjoyment</td>
<td></td>
<td>2.01</td>
<td>8.4</td>
<td>.69</td>
</tr>
<tr>
<td>Something new</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exotic taste</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novelty</td>
<td>.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expensive brands</td>
<td>.59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet taste</td>
<td>.51</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light taste</td>
<td>.48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 5: Financial consequences</td>
<td></td>
<td>1.71</td>
<td>8.1</td>
<td>.65</td>
</tr>
<tr>
<td>Cheap</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good value for money</td>
<td>.69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specials and sales</td>
<td>.67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 6: Socially attractive</td>
<td></td>
<td>1.50</td>
<td>7.5</td>
<td>.64</td>
</tr>
<tr>
<td>Product/brand is consistent with my image</td>
<td>.77</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make me more attractive to others</td>
<td>.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Popular among friends</td>
<td>.70</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
reported consuming once a month or less or once or twice a week (1 or 2 to 3 drinks each time) or three or four times a week (1 drink each time) were classified as social drinkers (43%). Those who reported once or twice a week (4 to 6 drinks each time) or three or four times a week or more (2 to 3 or 4 to 6 drinks each time) were classified as typical binge drinkers (25%). Finally, those who reported 7 to 9 drinks or more on each occasion and once or twice a week or more frequently were classified as heavy binge drinkers (14%). Binge drinkers (typical binge plus heavy binge) comprised approximately 39% of the respondents. This appears to be slightly lower than the proportion (44%) identified in the recent Harvard study report (Wechsler et al., 2002). The lower percentage of binge drinkers might result from the slightly higher percentage of female students in this study. As expected, all of the respondents who reported that they never drank (frequency) reported having zero drinks on the quantity measure. None of the respondents who drank once a month or less reported drinking seven or more drinks per typical occasion.
Chi-square analysis ($\chi^2 = 786.3, df = 18, p = .0000$) indicated a significant association between frequency and amount. The frequent drinkers were more likely to consume more on each occasion, a tendency that clearly makes them heavy drinkers. The four drinking category groups described previously were then subjected to subsequent multivariate and univariate analyses.

**RESULTS**

**Personal Values**

Multivariate analysis of variance (MANOVA) revealed that the scaled mean scores of four groups differed significantly in their overall personal values (see Table 3). Further univariate analyses of variance (ANOVA) indicated that the groups mainly differed in social-affiliation values, supporting H1a. No group differed from the others with regard to self-actualizing values, leading to a rejection of H1b. Scheffé’s test on the significant effect for social affiliation indicated that both typical and heavy binge drinkers placed a higher value on social affiliation than did social and non/seldom drinkers.

**Beliefs Regarding Drinking Consequences**

MANOVA results indicate that beliefs regarding the consequences of drinking differed significantly across the four groups. Follow-up univariate ANOVA results...
with the six beliefs as dependent variables were significant (see Table 3). Therefore, H2 was accepted. Of the six beliefs, the belief that drinking has psychological consequences was the most powerful differentiator, followed by the belief that drinking is financially affordable and the belief that drinking is safe/responsible. Other significant beliefs were socially attractive image, physical consequences, and intrinsic product enjoyment.

A careful examination of Scheffé tests found no significant differences between typical binge drinkers and heavy binge drinkers across the beliefs. However, both binge groups differed significantly from non/seldom drinkers and social drinkers, respectively. There was also a difference between non/seldom drinkers and social drinkers regarding all beliefs except for “socially attractive.” These findings suggest that the respondents’ beliefs regarding the various consequences of drinking, ranging from psychological consequences to intrinsic product enjoyment, are significant factors in differentiating nondrinkers from social drinkers and both these groups from typical and heavy binge drinkers.

Both typical and heavy binge drinkers held stronger beliefs regarding psychological consequences, indicating that they believed more firmly than did social and non/seldom drinkers that drinking alcohol provides fun, excitement, and an

### Table 3: MANOVA and ANOVA of Personal Values, Beliefs, and Consumption Orientation Factors

<table>
<thead>
<tr>
<th>Factors</th>
<th>Mean (SD)</th>
<th>Univariate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non/Seldom</td>
<td>Social</td>
</tr>
<tr>
<td></td>
<td>(n = 114)</td>
<td>(n = 278)</td>
</tr>
<tr>
<td>Personal values</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-actualizing</td>
<td>5.90 (1.05)</td>
<td>5.76 (0.99)</td>
</tr>
<tr>
<td>Social affiliation</td>
<td>4.86ab (1.26)</td>
<td>5.00cd (1.08)</td>
</tr>
<tr>
<td>Beliefs about drinking consequences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td>2.52abc (1.59)</td>
<td>3.12abcd (1.31)</td>
</tr>
<tr>
<td>Physical</td>
<td>4.61ab (2.32)</td>
<td>3.54a (2.05)</td>
</tr>
<tr>
<td>Intrinsic product enjoyment</td>
<td>3.47abc (1.49)</td>
<td>3.96ab (0.96)</td>
</tr>
<tr>
<td>Safe/responsible</td>
<td>2.53abc (0.84)</td>
<td>2.97abcd (0.91)</td>
</tr>
<tr>
<td>Financially affordable</td>
<td>2.97abc (1.42)</td>
<td>3.36abcd (1.21)</td>
</tr>
<tr>
<td>Socially attractive</td>
<td>2.35abc (1.48)</td>
<td>2.62abcd (1.23)</td>
</tr>
<tr>
<td>Alcohol consumption orientations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational shopper/opinion leader</td>
<td>1.39abc (0.77)</td>
<td>2.35abcd (1.17)</td>
</tr>
<tr>
<td>Health/moral conscious</td>
<td>4.79abc (1.74)</td>
<td>3.42abcd (1.34)</td>
</tr>
<tr>
<td>Ad conscious</td>
<td>1.79abc (1.24)</td>
<td>2.14abcd (0.99)</td>
</tr>
<tr>
<td>College drinking lifestyle</td>
<td>1.94abc (1.46)</td>
<td>3.34abcd (1.52)</td>
</tr>
<tr>
<td>Quality conscious</td>
<td>2.38abc (1.64)</td>
<td>3.49a (1.40)</td>
</tr>
</tbody>
</table>

NOTE: The same pair of superscripts indicates a significant difference at .05 level.
opportunity to “escape from it all.” Both typical and heavy binge drinkers were also more likely to report that they believe that drinking is worth the money and that drinking would enhance their social image and promote acceptance among their friends. Both typical and heavy binge drinkers were more likely to believe that drinking is a safe/responsible choice as compared to social and non/seldom drinkers. As compared to nondrinkers, all drinkers (both binge drinkers and social drinkers) were less likely to report that they believe that drinking alcohol has negative physical consequences. Finally, and not surprisingly, all drinkers were also more likely than were nondrinkers to say that they enjoyed the intrinsic product aspects of alcohol (e.g., taste).

Alcohol Consumption Orientations

The overall MANOVA and univariate analyses indicated that alcohol-consumption orientations are significant factors in differentiating the drinker types (see Table 3). Therefore, H3 was accepted. The two most decisive factors were the recreational shopping/opinion leadership orientation and the college drinking lifestyle orientation, followed by the health- and moral-conscious orientation, the advertising-conscious orientation, and the quality-conscious orientation. Scheffé tests indicated that all groups differed from one another with regard to the five shopping orientations, with the exception of the quality-conscious orientation.

Heavy binge drinkers were most likely to be recreational shopper/opinion leaders when purchasing alcoholic beverages, and they most strongly believed that drinking is part of a college lifestyle. Both typical and heavy binge drinkers were less likely to display a health- and moral-conscious orientation than were social and non/seldom drinkers. Both typical and heavy binge drinkers were more responsive to alcohol advertising than were non/seldom drinkers and social drinkers. There were no differences in quality consciousness among the three types of drinkers; however, in their degree of quality consciousness, all were significantly different from non/seldom drinkers.

Situational Contingencies

Alcohol consumption situations. The overall MANOVA assessing differences by group status in alcohol consumption situations was highly significant (see Table 4). Therefore, H4a was accepted. The “at-a-party” situation produced the highest univariate F, followed by “at-a-bar,” “with one friend or romantic partner,” and “when alone.” As expected, non/seldom drinkers were significantly different from all drinkers in that their mean score was close to “never.” Among all drinkers, both types of binge drinkers were significantly more likely to drink in every situation than were social drinkers.

Communication situations. The overall MANOVA indicated significant differences among the four groups in personal/nonpersonal influences. Follow-up univariate analyses suggested that both personal communication situations and nonpersonal communication situations were significantly different among the groups. Therefore, H4b was accepted. Scheffé tests revealed that the total differ-
ence was largely due to differences between non/seldom drinkers and all other categories.

**Situational volitional behavior.** The overall MANOVA performed on volitional behavior was also significant. The volitional behavior “at a party” or “with a friend or romantic partner” situations had a higher univariate \( F \) that that of “when alone.” Therefore, \( H4c \) was accepted. The Scheffé test indicated that all four groups differed from one another in their volitional behavior “at a party.” Heavy binge drinkers had the greatest difficulty sticking to their earlier plans not to drink “at a party” or “with a friend/romantic partner,” followed by typical binge drinkers, social drinkers, and non/seldom drinkers. Also, when alone, only the heavy binge drinkers differed from social and non/seldom drinkers.

**Demographics.**

Among the various demographic characteristics, gender accounted for the highest chi-square \( \chi^2 = 65.8, p < .001 \). Fifty percent of the female respondents were social drinkers, and 21% of the female respondents were non/seldom drinkers. On the other hand, 33% of the male respondents were social drinkers, and 14% of the male respondents were non/seldom drinkers. A relatively similar percentage of each gender (24% female and 27% male) qualified as typical binge drinkers. However, more than a quarter of the male respondents (27%, or 1 in 4) qualified as heavy binge drinkers, whereas only 5% (1 in 20) of the female respondents fell into this
group. Living arrangement was also a significant factor ($\chi^2 = 59.1, p < .001$). A considerably higher proportion of binge drinkers reported living in a fraternity or sorority (34% typical binge drinkers and 21% heavy binge drinkers), followed by those living off-campus (28% typical and 15% heavy binge drinkers) and those living in a residential hall (23% typical and 12% heavy binge drinkers). A substantially lower percentage of those who lived at home with parents reported binge-drinking behaviors (only 8% typical binge drinkers and 7% heavy binge drinkers).

Academic performance, assessed by grade point average, was also a significant factor ($\chi^2 = 37.4, p < .001$). Those with the highest academic achievement (a GPA of 3.6 and higher) were least likely to binge drink (15% typical binge drinking and 7% heavy binge drinking) as compared to those with a GPA of 2.5 to 3.5 and those with a GPA less than 2.5. Work status was a significant factor ($\chi^2 = 19.6, p < .001$). A greater percentage of respondents who did not work were binge drinkers (29% typical binge drinkers and 18% heavy binge drinkers) as compared to those who worked (22% typical binge drinkers and 9% heavy binge drinkers). Finally, age ($\chi^2 = 13.3, p < .05$) was significant in that the highest percentage of binge drinkers (26% typical binge drinkers and 16% heavy binge drinkers) were among the 20 to 21 age group, followed by those 19 years of age or younger and those 22 years of age or older. Therefore, H5 was accepted.

**DISCUSSION**

**Drinking Categories and Consumption Chart**

In this study, we identified four segments (non/seldom drinkers, social drinkers, typical binge drinkers, and heavy binge drinkers), each distinguished by a defined range based on the amount and frequency of alcohol consumption. In identifying four segments, we have in effect created a consumption chart (see Figure 1), one that could be used by prevention practitioners, as well as the students themselves, as a diagnostic tool. Consumption charts that clearly demarcated the categories of consumption if posted in residence halls, student unions, and other campus venues might not only challenge the self-perceptions of problem drinkers in denial but also help those already concerned to set lower target consumption goals and remind social drinkers not to escalate their consumption.

For instance, college-age drinkers and nondrinkers tend to overestimate the amount and frequency of their peers’ alcohol consumption (Baer, Stacy, & Larimer, 1991; Prentice & Miller, 1993). Such overestimates allow heavy drinkers, such as the typical binge drinkers in the present study, to imagine that they do not consume enough to qualify as binge drinkers. Rather, they may view themselves more as social drinkers who occasionally drink heavily. Likewise, heavy binge drinkers may see themselves as typical bingers. A second effect of overestimating others’ use is that it may create an indirect form of social influence, whereby individuals may end up drinking more than they otherwise would because they seek to emulate the social norm, whether consciously or unconsciously. Campus health practitioners and other health promoters can counteract such overestimates by providing students with accurate national or local data on the high percentage of abstainers and moderate drinkers.
Personal Values

Based on our results, we concluded that social-affiliation values may well motivate binge drinkers and thus serve as a basis for prevention measures, more so than self-actualizing values. With this conclusion in mind, we suggest several possible applications. First, given that social-affiliation needs are developmentally normative for young adults in general, and much stronger for binge drinkers in particular, college administrators could take steps to provide alternative, healthier ways for students to achieve social-hedonic goals. Also, informing binge drinkers of their greater need to realize social-hedonic values might help them to regulate their drinking behavior. Knowing why they drink excessively, in other words, should provide them a greater ability to choose other means for achieving the same desired ends. Furthermore, prevention practitioners could develop educational messages implying that moderate drinking can better achieve the desired social-hedonic goals (while avoiding the negative consequences).

Second, the binge drinkers identified in our study scored as high as the other types on self-actualizing values, indicating that they desire greater academic achievement as much as other college students. Because this group’s actual academic achievement, on average, was lower than that of the other types, a prevention message could be devised to help translate binge drinkers’ pro-achievement, self-actualizing values into successful academic behaviors. Third, we suggest that college recruitment materials portray the college campus and the college experience as a place and time to achieve self-actualizing values, rather than emphasizing social-hedonic values. In a simple way, the U.S. Army’s recruitment effort (“Be All You Can Be”) appeals to young adults’ self-actualizing values. Such efforts could begin prior to recruitment in how the college is portrayed in promotional materials and then follow through with programs on campus.

Beliefs Regarding Drinking Consequences

Binge drinkers’ beliefs toward the positive psychological consequences of drinking were most significantly different from those of other groups. This finding supports previous research that beliefs about the positive consequences of alcohol use are typically stronger motivators of alcohol use than beliefs about negative consequences (Goldman, Darkes, & Del Boca, 1999). Because of the strong effect of psychological consequences on drinking, prevention practitioners could design an educational message that would help binge drinkers alter their beliefs about psychological consequences. For instance, students could be encouraged to avoid a short-term, immediate, stress-reduction strategy and pursue a more long-term strategy, one that benefits health (i.e., exercise).

What college students believe about the financial consequences of drinking is clearly associated with their drinking habits and emerged as the second most critical belief, following psychological consequences. Perhaps one of the most interesting findings from our study is that binge drinkers, who held the strongest beliefs regarding monetary costs, were much more likely to spend money on alcohol because they viewed drinking as a financially cost-effective activity. To offset this belief, raising taxes and prices on alcoholic products might work if binge drinkers’ beliefs regarding the financial viability of alcohol consumption could be changed.
by the higher prices or by demonstrating how costly it can be to engage in heavy drinking. Recent statistics show that college students spend approximately $5.5 billion ($446 per student) each year on alcoholic beverages, more than the combined expenditures for books and all nonalcoholic beverages (Erenberg & Hacker, 1997). If binge drinkers were to keep track of their individual expenditures, as compared to other spending, they might gain realistic estimates of their actual expenditure. At the same time, the same strategy (raising taxes and prices) might not work if binge drinkers, as market mavens, simply became even more influential, leading the way not only toward bargains but also toward stronger shopping orientations that would enable them to circumvent the high prices (e.g., buying in bulk) (Wagenaar et al., 1996). In fact, binge drinkers are also much more receptive to specials and sales in a retail setting or in on-premise purchasing situations. Thus, we recommend that there be restricted access to cheap/special drinks and the banning of irresponsible alcohol advertising on campus (e.g., all-you-can-drink specials), which clearly promotes binge drinking.

The third most important belief about drinking consequences had to do with safety/responsibility. Although binge drinkers achieved a higher mean score than nonbinge drinkers, their mean score was more toward “undecided,” as opposed to strongly believing that drinking is safe and responsible. Perhaps prevention educators could capitalize on their neutral belief and persuade binge drinkers to believe that binge drinking, from public and individual health perspectives, is an unsafe and irresponsible choice. Finally, we should note that all drinkers in general—social and binge drinkers—held similar beliefs regarding the negative physical consequences (excepting non/seldom drinkers). Although it might seem that prevention messages aimed at providing evidence contrary to this belief might prove effective, informational campaigns focusing solely on negative consequences of alcohol abuse alone have thus far met with relatively little success (Larimer & Cronce, 2002). Therefore, we must conclude that a prevention message focusing on physical consequences might not strongly influence a drinker’s rate of consumption or the amount the drinker consumes, although it might serve to influence an individual’s tendency to abstain from alcohol altogether or to drink only in nominal amounts. Keep in mind, however, that in this study the respondents’ beliefs regarding the physical consequences of drinking were presumed to be negative and their beliefs regarding psychological consequences to be positive. In fact, some physical consequences can be positive (e.g., heart benefits) or, inversely, some psychological consequences can be negative (e.g., depression). Prevention messages should take these consequences into consideration.

**Alcohol Consumption Orientations**

The heavy binge drinkers were also most strongly oriented toward recreational shopping and were most likely to be opinion leaders among the four groups. These individuals definitely enjoyed the process of shopping for alcoholic beverages and perceived themselves as good sources for information on such beverages and their use. They were among the first in their groups of friends to buy new products in the marketplace. Binge drinkers also displayed a stronger shopping orientation toward alcohol advertising, one that reflected their lifestyle in general. Heavy binge drinkers also displayed the strongest orientation toward perceiving a drinking lifestyle...
as integral to the college experience, a normal part of the ritual by which one becomes independent of one’s parents during college (Wolburg, 2001). These factors, then, appear to encourage them to engage in excessive drinking. Overall, they were more susceptible to nonpersonal appeals (e.g., ads). Although this finding regarding binge drinkers’ recreational/social orientation and pro-advertisement may be viewed as no surprise, it is important to note that marketers capitalize on this very fact in their marketing efforts by spending hundreds of millions of dollars to lure the youth and young adult market alone. Informing binge drinkers that they may well be marketing targets and that alcohol manufacturers actively try to take advantage of them might help them become more cautious consumers toward alcohol marketing efforts. In addition, we recommend that aggressive alcohol advertisements directed at college students be controlled.

Situational Contingencies and Demographics

Although binge drinkers indicated the greatest frequency of drinking in all situations, the “at-a-party” situation was the strongest differentiator of binge drinkers, followed by “at a bar” and “with one friend or romantic partner.” When asked about their ability to stick to their initial plans not to drink, binge drinkers expressed the greatest difficulty in doing so, especially when they were at a party or with a friend/romantic partner. This finding, not surprisingly, reinforces a notion that party situations and bars are strong risk factors for binge drinking, particularly among heavier drinkers. Therefore, changing aspects of the environment to reduce encouragements to misuse alcohol may be helpful. Toomey and Wagenaar (2002) provided a comprehensive set of recommendations regarding environmental strategies to reduce college drinking, including such diverse ideas as keg registration, enacting social host liability, banning home deliveries, and making ID more difficult to falsify. Prevention educators might also help students self-regulate their own drinking behavior by assisting students to devise strategies that will reinforce their intention to refrain from excessive drinking. Perhaps the sense of accomplishment and self-respect that would be enhanced when students were successful might appeal to their self-actualizing values.

An examination of the binge drinker’s consumption behaviors when he or she is alone, in contrast to when with others, also reveals an interesting phenomenon: Although binge drinkers indicated that they drink more often when alone than do nonbinge drinkers, the average frequency was far less than when they drank with others, especially when at a party, at a bar, or with a friend or romantic partner. This reinforces the notion that college binge drinkers, rather than displaying the behavior of chronic addiction, drink as a means of achieving their social-hedonic values when seeking positive psychological consequences and pursuing social and recreational activities. Our finding thus supports Baer, Kivlahan, Blume, McKnight, and Marlatt (2001), who found that college binge drinking might be transitory and should not be seen as necessarily associated with lifetime alcohol-dependency problems. That the binge drinker’s intrinsic product enjoyment (drinking for exotic taste, for novelty, etc.) was not necessarily greater than that of social drinkers also reinforces the notion that the binge drinker’s alcohol consumption may truly be understood in the context of his or her social/psychological needs.
Certain demographic characteristics that placed college students more frequently in social/hedonic settings also proved significant in differentiating binge drinkers. For instance, residential arrangements with the fewest restrictions, combined with certain drinking situations, produced the greatest number of heavy bingers in the survey. A substantially higher proportion of binge drinkers lived in fraternity/sorority housing or in off-campus housing, both of which offer more opportunities for unsupervised social activities than do living with parents. Our finding reinforces the importance of colleges and communities collaborating to provide safer environments that do not promote excessive alcohol use near campuses. Furthermore, our findings should provide useful guides for parents when arranging student housing, monitoring students’ social activities and academic progress, and encouraging students to be committed to academic success and to obtain job experience while in school.

CONCLUSIONS, LIMITATIONS, AND FUTURE STUDIES

In this article, we applied the analytical tools typically used to segment consumers to, in effect, define different categories of traditional college-age drinkers, based on their consumption rates. Our study provided a complementary yet alternative viewpoint for understanding college-age drinkers by regarding them as consumers operating in the marketplace and therefore offered several intervention and prevention messages that can be effectively incorporated into practitioners’ programmatic efforts. A careful examination of the overall results reveals that binge drinkers are most clearly differentiated from other students by social/hedonic forces, consistently ranging from the highest order personal values (social affiliation) to mid-level beliefs (psychological consequences) and consumption orientations (recreational shopping/opinion leadership) to the lowest level of conduct (drinking at a party situation). This apparent hierarchical consistency in flow indicates that prevention messages should be designed at multiple levels and must focus both on individual decision-making choices and situational contingencies and on consumption environments that influence students’ drinking. Finally, the utilitarian strand, which encompasses nonhedonic/more internally oriented characteristics (i.e., beliefs regarding safety/responsibility, health/moral conscious orientation), also proved effective in differentiating binge drinkers from non/seldom drinkers. Therefore, efforts should be made to appeal to binge drinkers’ utilitarian strand and involve values and perceptions that are conducive to pragmatic goals of college life.

As is true of all research, this study has limitations, and the findings of the study should be generalized only within their boundaries of investigation. It should be remembered that a slightly higher number of female students responded to our survey. Furthermore, because we focused on college students as opposed to young adults in general, the interpretation of our findings should be limited to college students. That said, we recommend a similar study employing a psychographic technique be conducted among high school students as well as non-college-student young adults, not only in the context of alcohol but also other substance use and risky behaviors. Because our study was one of the first to investigate market-based and consumption-based beliefs and consumption orientations, we relied on focus group interviews to determine the measures. Consequently, the internal consistencies of some of the scales were less than desirable, and our hypotheses were
somewhat exploratory. Based on our findings, we recommend that the scales be refined in future studies.

REFERENCES


