



Who drinks and why? A review of socio-demographic, personality, and contextual issues behind the drinking motives in young people

Emmanuel Kuntsche^{a,*}, Ronald Knibbe^b, Gerhard Gmel^a, Rutger Engels^c

^a *Research Department, Swiss Institute for the Prevention of Alcohol and Drug Problems (SIPA), PO Box 870, 1001 Lausanne, Switzerland*

^b *Department of Medical Sociology, PO Box 616, University of Maastricht, 6200 Maastricht, The Netherlands*

^c *Behavioural Science Institute, PO Box 9104, Radboud University, 6500 Nijmegen, The Netherlands*

Abstract

The aim was to review the empirical research carried out over the last 15 years on the characteristics of young people (10- to 25-year olds) who have specific motives for drinking. In a computer-assisted search of relevant literature, 82 studies were identified. Concerning demographic factors, a developmental trend was found — from general, undifferentiated drinking motives in late childhood and early adolescence to more gender-specific drinking motives in subsequent years. With regard to personality factors, two specific patterns can be distinguished: extraversion and sensation-seeking correlate with enhancement motives, while neuroticism and anxiety correlate most strongly with coping motives. For contextual factors, drinking motives were found to vary across countries but not among different ethnic groups in the same culture. Based on these results, preventive strategies should take into account general, undifferentiated drinking motivation in late childhood, and social and enhancement motives in adolescence, particularly among boys. Findings on personality indicate that it would be useful to focus on extraverted, sensation-seeking boys who drink for enhancement motives and neurotic, anxious girls who drink for coping motives.

© 2005 Elsevier Ltd. All rights reserved.

Keywords: Drinking motives; Reasons for drinking; Personality; Adolescents; Literature review

* Corresponding author. Tel.: +41 21 321 29 52; fax: +41 21 321 29 40.

E-mail addresses: ekuntsche@sfa-isp.ch (E. Kuntsche), R.Knibbe@zw.unimaas.nl (R. Knibbe), ggmel@sfa-isp.ch (G. Gmel), R.Engels@bsi.ru.nl (R. Engels).

1. Introduction

Research on drinking motives among adolescents has a long tradition (e.g., Edwards, Hensman, & Peto, 1973; Jung, 1977; Riley, Marden, & Lifshitz, 1948). In 1988, Cox and Klinger developed their Motivational Model of Alcohol Use (Cox & Klinger, 1988), based on the assumption that people drink in order to attain certain valued outcomes, and that persons make decisions about whether to drink or not. These decisions are a combination of emotional and rational processes in that the decisions are made on the basis of the affective change that persons expect to achieve by drinking compared with not drinking. The affective change can either be related to the direct chemical effects of alcohol, e.g., tension reduction or mood enhancement, or the indirect effects, e.g., peer acceptance. In other words, drinking motives represent a subjectively derived decisional framework for alcohol use that is based on personal experience, situation and expectancies (Carpenter & Hasin, 1998; Cox & Klinger, 1988).

A previous review revealed that most adolescents reported drinking for social motives, some indicated enhancement motives and only a few reported coping motives (Kuntsche, Knibbe, Gmel, & Engels, 2005). Concerning potential outcomes, social motives appeared to be associated with moderate alcohol use, enhancement with heavy drinking and coping motives with reported alcohol-related problems in addition to heavy drinking. The results of empirical research on the characteristics of young people who drink for specific motives have yet to be summarized. The extent to which a review of empirical studies would show consistent associations between drinking motives and socio-demographic characteristics would enhance the validity of the drinking motive concept. Furthermore, it would allow researchers to delineate specific risk groups in terms of the combination of drinking motives and personality characteristics for which more tailored interventions should be developed. In fact, authors argue that by identifying and collecting information on the specific needs that alcohol meets for particular individuals, preventive strategies may be more effectively designed (Cooper, 1994; Miller, 1996). Gottfredson and Wilson (2003) conclude from their review of the characteristics of effective school-based substance abuse prevention that the evidence points to the greater effectiveness of targeting higher risk youths than of targeting the general population (see also Masterman & Kelly, 2003).

The aim of this paper is to review the empirical research over the last 15 years for possible antecedents of drinking motives. These concern factors that do not result in specific behaviors such as heavy drinking or delinquency, but are related to the individual or the given situation. It attempts to provide information on the generalities/specificities of drinking motives (e.g., Do drinking motives differ according to gender? Are prevalence and associations of drinking motives comparable between different countries and drinking cultures? Do drinking motives change over time?) as well as on the validity (e.g., How strong is the association between drinking for social motives and drinking in social situations? How strong is the association between drinking motives and personality traits that were shown to be remarkably stable across cultures and life times?). The factors mentioned in the relevant studies can be classified in three different categories: socio-demographic (gender, age, trends over time), personality (sensation seeking, low inhibitory control, extraversion, conscientiousness, neuroticism, agreeableness, anxiety sensitivity) and contextual factors (drinking situations, culture).

2. Methods

A computer-assisted literature search was conducted using the keywords “reason” or “reasons” or “motive” or “motives” or “motivation” and “alcohol” or “drinking” or “drunk” or “drunkenness” and

“adolescents” or “adolescence” or “juvenile” or “young people”. “Current Contents”, “ERIC Database”, “ETOH”, “Medline”, “PsychInfo”, “Sociological Abstracts”, and “Swetsnet” were used as databases, together with the internal library system of the Swiss Institute for Prevention of Alcohol and Drug Problems. The search strategy included only articles published in English. The literature search was restricted to publications from 1989 onwards, the year after the development of the motivational model of alcohol use (Cox & Klinger, 1988) and to the age group of 10- to 25-year olds.

During the first phase more than 100 articles were identified. The review focuses solely on drinking motives, therefore studies on motives to abstain were excluded. Similarly, the study focuses on common drinking motives and on general population studies of children, adolescents, and young adults. For this reason, those dealing exclusively with specific motives (e.g., reasons for ending drinking games) or among particular subpopulations (e.g., reasons for drinking among women with eating disorders or among rural Arab youth) were similarly excluded. Since studies on drinking motives are sometimes integrated into broader studies on young people’s drinking in general and therefore often do not use keywords related to drinking motives or reasons explicitly, all identified articles were crosschecked for other yet unidentified studies. In total, the manuscript was based on 82 articles.

The present review intends to give an overview of empirical evidence published in the last 15 years on the drinking motives of young people. However, when no information from recent studies was available, key or exemplary studies from other populations or those published before 1989 are highlighted.

3. Results

3.1. Demographics and trends

3.1.1. Gender and age

The distinction between different motive categories does not emerge until adolescence. Webb, Getz, Baer, and McKelvey (1999) found that among 6th graders 12 items measuring social and coping motives loaded on two different factors whereas among 5th graders only one motive factor emerged. Thus, the difference between social and coping motives as the most general distinction between motive categories (McCarty & Kaye, 1984; Smith, Abbey, & Scott, 1993) appears to occur for the first time in early adolescence. Later, in adolescence and early adulthood, most authors found three or more motive categories (for a review see Kuntsche et al., 2005).

Gender differences appear to emerge over the adolescent years. In her study, Cooper (1994) found no gender differences at the age of 13 and 14 but a stronger increase in social and enhancement motives among boys in subsequent years. At age 18 and 19, boys endorsed social and enhancement motives more strongly than girls (Cooper, 1994; Jerez & Coviello, 1998). Among university students, there is strong evidence that social (Carrigan, Samoluk, & Stewart, 1998; Gire, 2002; Montgomery, Benedicto, & Haemmerlie, 1993; Simons, Correia, & Carey, 2000; Smith et al., 1993; Theakston, Stewart, Dawson, Knowlden-Loewen, & Lehman, 2002; Wild, Hinson, Cunningham, & Bacchiochi, 2001) and enhancement drinkers tend to be male (Gire, 2002; Kairouz, Glikzman, Demers, & Adlaf, 2002; Lo & Globetti, 2000; Smith et al., 1993; Stewart, Zeitlin, & Samoluk, 1996; Wild et al., 2001).

Gender differences in coping motives shift from early adolescence to adulthood. In a study among 13- to 19-year olds, girls score higher on coping motives than boys in early adolescence (13–15 years),

whereas in late adolescence (18–19 years) the opposite was found (Cooper, 1994). Studies among college students found no gender differences in relation to coping motives among younger students (18–21 years in mean: Carey & Correia, 1997; Nagoshi, Nakata, Sasano, & Wood, 1994; Stewart, Loughlin, & Rhyno, 2001; Wild et al., 2001) but, among older students (23 years in mean), men scored higher on coping motives than women (Gire, 2002).

3.1.2. Trends over time

To our knowledge, only one study investigated trends of adolescent drinking motives over time. This research, carried out in Finland, repeatedly measured drinking motives among 14–16 year olds in 1984 and in 1999 (Palmqvist, Martikainen, & vonWright, 2003). It revealed that on the one hand the percentage of adolescents indicating coping motives (e.g., drinking to cope with bad feelings, to relieve stress, or to avoid social rejection) decreased, while the percentage indicating enhancement motives (e.g., drinking to feel good, to get drunk or just for its own sake) increased.

3.1.3. Conclusion on demographics and trends

A developmental trend appears to exist — from general, undifferentiated drinking motives in late childhood and early adolescence to more gender-specific drinking motives in subsequent years. In late adolescence, for example, boys score higher on social and enhancement motives while no differences were found in early adolescence; among older college students, men scored higher on coping motives whereas no differences were found among younger college students. Concerning trends over time, one study revealed a shift towards a decrease in coping motives and an increase in enhancement motives over the last 20 years among adolescents from Northern Europe.

3.2. Personality issues

In their Motivational Model of Alcohol Use, Cox and Klinger (1988, 1990) suggested that drinking motives are the most proximal antecedents of alcohol use, whereas other variables such as personality factors influence alcohol use by way of their associations with drinking motives. As personality factors are supposed to constitute salient ways in which individuals differ in their motivational styles (McCrae & John, 1992), authors argue that it is important to include drinking motives when studying the link between personality characteristics and alcohol-related outcomes (Cooper, 1994; Stewart & Devine, 2000).

Accordingly, by reviewing literature on the characteristics of young people who drink for particular motives, several studies were found that treated the link between personality factors and drinking motives. The former can be classified into four broad categories: sensation seeking and low inhibitory control, dimensions of the five-factor model of personality, anxiety sensitivity, and other personality-related factors.

3.2.1. Sensation seeking and low inhibitory control

Enhancement motives are defined as drinking to enhance positive emotional states and were assessed by items such as drinking because it is exciting or because it is fun. Accordingly, studies found that enhancement motives are associated with sensation-seeking (Comeau, Stewart, & Loba, 2001; Cooper, Frone, Russell, & Mudar, 1995), defined as a personality factor that refers to the desire for intense and novel experiences (Zuckerman, 1994). Additionally, enhancement motives were shown to be associated with low inhibitory control (Colder & O'Connor, 2002), and low suppression of aggression (Weinberger

& Bartholomew, 1996). In a study among 13- to 19-year olds in the US, impulsivity — defined as responding immediately to urges and desires — was positively correlated with enhancement motives ($r = .19$; Cooper, Agocha, & Sheldon, 2000). However, in this study, impulsivity failed to be a significant predictor of enhancement motives when extraversion and neuroticism (see below) were taken into account in a multivariate regression analysis.

3.2.2. *Extraversion, conscientiousness, neuroticism, agreeableness, and openness as dimensions of the five-factor model of personality*

The five-factor model of personality (Costa & McCrae, 1992) is an organization of five remarkably robust personality constructs and identifies salient ways in which individuals differ in their emotional, interpersonal, experiential, attitudinal, and motivational styles (McCrae & John, 1992). The four factors of high extraversion, low conscientiousness, high neuroticism, and low agreeableness in this model were shown to be related to specific drinking motives.

Drinking to enhance positive emotional states was shown to be associated with high levels of extraversion which was defined as gregariousness, sociability, and high levels of activity and excitement-seeking (Cooper et al., 2000; Stewart & Devine, 2000; Theakston et al., 2002). It was argued that extraverted individuals are sensitive to positive affective stimuli and therefore more likely to engage in enhancement-motivated alcohol use (Gray, 1982; Stewart & Devine, 2000).

Studies demonstrate that North American college students who drank to enhance positive emotional states scored low on conscientiousness — defined as responsibility, dependability and will to achieve (Loukas, Krull, Chassin, & Carle, 2000; Stewart & Devine, 2000; Stewart et al., 2001; Theakston et al., 2002). It was argued that low self-discipline and low deliberation make individuals who score low on conscientiousness more likely to engage in short-term incentive activities such as heavy drinking and less likely to consider the long-term consequences of this behavior (Stewart et al., 2001). Some studies additionally found a correlation between coping motives and low conscientiousness ($r = .22$, Loukas et al., 2000; $r = .19$, Stewart & Devine, 2000; $r = .15$, Theakston et al., 2002). However, this relation did not remain significant when enhancement motives were statistically controlled for (Loukas et al., 2000; Theakston et al., 2002).

There is strong evidence that drinking to cope with negative emotional states is associated with high levels of neuroticism — defined as emotional lability, hypersensitivity to criticism, self-doubt, and a tendency to dwell on the negative (Cooper et al., 2000; Loukas et al., 2000; Stewart & Devine, 2000; Stewart et al., 2001). Neurotic individuals who are vulnerable to experiences of negative affect may place more importance on the use of alcohol to alleviate such feelings (Loukas et al., 2000). Alcohol use is only one of several maladaptive coping strategies employed by neurotic individuals in an attempt to deal with their frequent experiences of negative affect (Stewart et al., 2001). Neuroticism was also found to be correlated to social ($r = .20$, Stewart & Devine, 2000) and enhancement motives ($r = .09$, Cooper et al., 2000). However, Loukas et al. (2000) found that although neuroticism was correlated with all motive dimensions measured in their study ($r_{\text{coping}} = .44$, $r_{\text{enhancement}} = .20$, $r_{\text{social}} = .22$), only coping motives remained significant after having statistically controlled for other motive dimensions.

In addition to neuroticism, coping motives were shown to be associated with low levels of agreeableness — defined as trust, compliance, good interpersonal relationships (Loukas et al., 2000; Stewart et al., 2001). It was argued that individuals who score low in agreeableness (i.e., characterized by hostility, self-centeredness, and indifference to others) are likely to experience interpersonal conflicts

(Suls, Martin, & David, 1998) and violence (Heaven, 1996) and thus may use alcohol to cope with the elevated levels of social distress they encounter (Loukas et al., 2000).

For openness, the fifth dimension of the five-factor model of personality (Costa & McCrae, 1992), no significant relation to any drinking motive dimension was found (Stewart & Devine, 2000; Stewart et al., 2001).

3.2.3. *Anxiety sensitivity*

Individuals who score high on anxiety sensitivity are characterized by displaying fears concerning the potential negative consequences of anxiety symptoms, such as the fear of physical illness, social embarrassment, or loss of mental control (Reiss, Peterson, Gursky, & McNally, 1986). For example, an individual with high anxiety sensitivity might perceive a rapid heart rate as a sign of an impending heart attack. In contrast, individuals who score low in anxiety sensitivity would perceive such bodily symptoms as essentially inconsequential.

Several studies demonstrate that drinking to cope with negative emotional states is associated with high levels of anxiety sensitivity (Comeau et al., 2001; Stewart & Zeitlin, 1995; Stewart, Karp, Pihl, & Peterson, 1997; Stewart, Zvolensky, & Eifert, 2002). Authors argue that anxiety-sensitive individuals use alcohol due to its anxiolytic properties to control the symptoms that they fear. In contrast, students with low anxiety sensitivity drink primarily for social or enhancement motives (Comeau et al., 2001; Stewart et al., 1997). Additionally, one study found that the relation between anxiety sensitivity and coping motives was stronger among female than male college students in Canada (Stewart & Zeitlin, 1995). Another study revealed that the correlations between trait anxiety and coping motives were stronger for those Canadian high school students with high anxiety sensitivity than for those with lower anxiety sensitivity (Comeau et al., 2001). The authors argue that adolescents who are frequently anxious would be more motivated to attempt to control their anxiety through drinking alcohol if they also greatly fear anxiety symptoms. However, one study indicates that the relation between anxiety sensitivity and coping motives is moderated by experiential avoidance — defined as suppression or acceptance of negative emotional states (Stewart et al., 2002). Authors argue that the increased likelihood of coping-motivated drinking among individuals with high anxiety sensitivity can be explained by their greater attempts in general to control aversive inner experiences.

3.2.4. *Other personality-related issues*

Coping motives in particular appear to be linked to some other personality-related issues. In one study, for example, US college students with negative views of the own self scored higher on coping motives (McNally, Palfai, Levine, & Moore, 2003). This result is consistent with research on neuroticism (see above) and depression (see below). Particularly among male college students, coping motives were correlated with alienation (Bradley, Carman, & Petree, 1991) — defined as feelings of helplessness, frustration, despair, and social isolation in the sense of being rejected, excluded or repudiated in social relations (Jessor, Graves, Hanson, & Jessor, 1968).

Looking more closely at the different facets of the neurotic personality, Stewart and Devine (2000) found that depression was most strongly correlated with coping motives among Canadian college students. Windle and Windle (1996) also found a correlation between coping motives and depression among US high school students and concluded that coping drinking motives, which typically have been viewed as alcohol-specific in terms of their relevance to dysfunctional behavior, highlight the potential predictive value of this dimension for multiple domains of adolescent functioning.

3.2.5. Conclusion on personality issues

Concerning drinking motives, two types of adolescents and young adults with a particular personality appear to exist. First, those who drink for enhancement motives were shown to be extraverted, impulsive, and aggressive. They tend to be sensation seekers, to have low inhibitory control, low levels of responsibility and a weak will to achieve. Second, those who drink for coping motives were shown to be neurotic and to have a low level of agreeableness and a negative views of the own self. [Table 1](#) provides an overview of the most important findings. It reveals that personality factors are mainly related to enhancement (internal, positive in the terminology of [Cox & Klinger, 1988](#)) or coping drinking motives (internal, negative in the terminology of [Cox & Klinger, 1988](#)). Authors argue that personality factors are less relevant for external motives (social motives: external, positive; conformity: external, negative) because they are more context-dependent and less stable over time ([Cooper, 1994](#); [Stewart & Devine, 2000](#)). Indeed, associations between personality factors and social or conformity motives tend to be weak and failed to be significant when statistically controlled for enhancement and coping motives ([Loukas et al., 2000](#); [Stewart & Devine, 2000](#); [Theakston et al., 2002](#)).

3.3. Contextual issues

3.3.1. Situational context

Only one study reports associations between drinking motives and drinking in different situational contexts ([Cooper, 1994](#)). This study shows that social drinkers drank more frequently at mixed-sex parties but not at home, in bars or together with family members, while enhancement drinkers drank with same-sex friends, at friends' homes, and in bars, and coping drinkers drank at home but not at parties or with their family. These results are very consistent with the given drinking motive dimensions. Social drinkers, for example, are defined as people who drink in a social context and not alone at home, while one would expect that enhancement drinkers are likely to avoid drinking in the company of their family

Table 1
Overview of the most important findings of the link between personality factors and drinking motives

Personality domain	Drinking motive dimension	Study
High sensation-seeking	Enhancement	Comeau et al., 2001 ; Cooper et al., 1995
Low inhibitory control	Enhancement	Colder & O'Connor, 2002
Low suppression of aggression	Enhancement	Weinberger & Bartholomew, 1996
High extraversion	Enhancement	Cooper et al., 2000 ; Stewart & Devine, 2000 ; Theakston et al., 2002
Low conscientiousness	Enhancement	Loukas et al., 2000 ; Stewart & Devine, 2000 ; Stewart et al., 2001 ; Theakston et al., 2002
High neuroticism	Coping	Cooper et al., 2000 ; Loukas et al., 2000 ; Stewart & Devine, 2000 ; Stewart et al., 2001
Low agreeableness	Coping	Loukas et al., 2000 ; Stewart et al., 2001
High anxiety sensitivity	Coping	Comeau et al., 2001 ; Stewart & Zeitlin, 1995 ; Stewart et al., 1997, 2002
High depression	Coping	Stewart & Devine, 2000 ; Windle & Windle, 1996
Negative self views	Coping	McNally et al., 2003
Alienation	Coping	Bradley et al., 1991

but seek out same-sex friends for company and whose drinking contexts are marked by little social control. Another study among Canadian college students confirms that young people drink for different reasons depending on the drinking situation (Kairouz et al., 2002). In fact, the reasons given added 8.1% of explained variances in the variation of alcohol intake between situations, compared to the model including only the characteristics of the drinking setting, such as circumstance, location, day of the week, group size, type of relationship, local norms and residence. However, the study failed to reveal the particular reasons for which students drink in particular situations.

3.3.2. *Cultural context*

There is a remarkable similarity across cultures in drinking motives of adolescents. Most drink for social or enhancement reasons in the sense of enjoyment. For example, in a study among 13- to 18-year olds in Argentina 80% drank for enjoyment reasons and only 7% to improve their bad mood, 4.6% to be accepted by peers, and 1% to relax or to escape boredom (Jerez & Coviello, 1998). Among 14- to 16-year olds in the UK, drinking to make a party more enjoyable was the most often reported reason (Plant, Bagnall, & Foster, 1990). Also among US college students, drinking to celebrate was the most prevalent reason (Klein, 1992; Stewart & Power, 2002). In a Canadian study, most college students drank to enjoy the taste (24.9%), to celebrate (21.3%) or to be sociable (16.9%), whereas only 2.1% drank to forget worries or to feel less shy (Kairouz et al., 2002). Among 14- to 18-year olds in Canada, the three most prominent reasons for drinking were “to get in a party mood” (18%), “because I enjoy it” (16%), and “to get drunk” (10%, Feldman, Harvey, Holowaty, & Shortt, 1999). Among 15- to 17-year olds in Hong Kong, drinking to have fun was the most prevalent reason for girls, while boys drank mainly to feel the effects of alcohol (Lo & Globetti, 2000; Kuntsche et al., 2005, for a more extensive description).

There are, however, a number of exceptions indicating that in some cases reasons for drinking are culture-specific. In a Spanish study of regular drinkers, the most frequently reported reasons for drinking were “I like the taste”, “it is a custom/social habit”, and “it helps my digestion” (Alvarez & del Rio, 1994). That Spanish drinkers indicate mainly custom- and meal-related reasons may be related to the fact that, in southern European countries, alcohol, particularly wine, is often moderately consumed at mealtimes (see Fahrenkrug & Gmel, 1998; Room & Mäkelä, 2000, for reviews). While these examples came from countries with distinctive drinking cultures, one study failed to find differences in the relation between drinking motives and drinking patterns among different ethnic groups in the same country (Neff, 1997). In this study, Anglo-, African-, and Mexican-Americans all had more drinks on a typical occasion and more frequently indicated having five drinks or more when stating escape motives independently of their cultural origin.

Two studies were identified that directly compare drinking motives and drinking patterns in samples from different countries. A cross-national study among US and Japanese college students revealed that in both countries social motives were more frequently indicated than coping motives. However, US students scored higher on social motives than their Japanese peers. No differences in scores on coping motives were found (Nagoshi et al., 1994). In another cross-national study, US college students scored higher on coping motives, whereas Nigerian students scored higher on social motives (Gire, 2002). The author interprets the results according to the attitude with respect to subordinating individual goals in favor of group goals in African cultures.

Apart of differences in prevalence in different countries, it appears that the classification of drinking motives (cf. Cox & Klinger, 1988) in enhancement (internal, positive), coping (internal, negative), social

(external, positive), and conformity (external, negative) is relatively stable across cultures. Results of the Drinking Motive Questionnaire Revised (DMQ-R, Cooper, 1994) reveal high similarities in the motive structure between adolescents and college students (MacLean & Lecci, 2000) and between adolescents from the US (Cooper, 1994), Canada (Comeau et al., 2001), and Switzerland (Kuntsche, Knibbe, Gmel, & Engels, in press).

3.3.3. Conclusion on contextual issues

Drinking motives are associated with drinking in different situational contexts (Cooper, 1994; Kairouz et al., 2002) and, in accordance with existing theories, these relations are as to be expected (Cox & Klinger, 1988, 1990). For example, the result that social drinkers were found to drink in a social context and not alone at home demonstrate the validity and discreteness of drinking motive dimensions. In addition to the fact that most adolescents drink for social or enjoyment reasons, some indication was found that drinking motives are culturally embedded. Differences in prevalence of particular drinking motives were found between quite distinct cultures (Nigeria vs. US or Japan vs. US) but not between different ethnic groups living in the same country. It appears that a particular drinking culture in a country affects the different ethnic groups that live in this country and their drinking motives. There are two underlying factors that might explain the differences in drinking motives between countries. Social motives appear to be prominent in collectivistic countries (Nigeria vs. US) or in countries where there are a great deal of social activities and social opportunities or pressure to drink (US vs. Japan). Particularly among freshmen in the US, social modeling, peer pressure and easy availability of alcohol may stimulate students to drink frequently (Baer, 1994). This and the particular residence system for college students in the US (living in Greek social organizations or in fraternity or sorority houses, see Baer, 2002 for a review) may result in higher levels of social motives in the US than in Japan. Apart of prevalence, there appears to be, however, no differences in classifying drinking motives in enhancement, coping, social, and conformity motives.

4. Discussion

4.1. Specificity of drinking motives

There appears to be a developmental trend from indicating one general drinking motive in late childhood and early adolescence to two or more specific drinking motives in late adolescence and in adulthood. Accordingly, gender differences in relation to indicating drinking motives appear to develop accordingly. In late adolescence, boys score higher on social and enhancement motives whereas no differences were found in early adolescence; after college years men scored higher on coping motives whereas no differences were found when they entered college. This is consistent with the fact that, during adolescence, drinking patterns such as risky single occasion drinking related to particular drinking motives, i.e., enhancement and coping motives (for a review, see Kuntsche et al., 2005), increase generally with age but are steeper among males than among females (Kuntsche, Gmel, Wicki, Rehm, & Grichting, in press; Kuntsche, Rehm, & Gmel, 2004). Studies among college students found no gender differences in indicating coping motives among younger students (18–21 years in mean, Carey & Correia, 1997; Nagoshi et al., 1994; Stewart et al., 2001; Wild et al., 2001) but, among older students (23 years in mean), men scored higher on coping

motives than women (Gire, 2002). In adolescence and the college freshman years, indicating coping motives was found to be more strongly associated with excessive alcohol use among females than among males (Beck, Thombs, Mahoney, & Fingar, 1995; Bradizza, Reifman, & Barnes, 1999; Stewart & Zeitlin, 1995; Windle, 1996) whereas after the freshman years and when entering the workplace in their mid-twenties men's heavy drinking tallied more with coping motives than women's heavy drinking (Rutledge & Sher, 2001).

Indicating specific drinking motives may also be influenced by the drinking culture (e.g., Gire, 2002; Nagoshi et al., 1994) but not by different sub-cultures (ethnicities) in the same (drinking) culture (Neff, 1997). Only one such study reported differences in the association between drinking motives and alcohol use. In the US, students scored higher on social motives and their drinking was more strongly correlated with social motives than in Japan (Nagoshi et al., 1994). This is supposed to be related to social and environmental factors of universities in the US (Baer, 1994, 2002). For coping motives that are internal by nature (Cooper, 1994; Cox & Klinger, 1988), no differences in scores and associations were found. Likewise, no differences in classifying drinking motives in enhancement, coping, social, and conformity motives were found across cultures.

However, studies on drinking motives are still rare outside North America. Actually, more than four out of five studies identified in this review used samples from North American countries and more than half of all identified studies used North American college students as research participants. Therefore, studies from other countries and particularly cross-national comparisons and studies that use longitudinal designs or multiple age groups are needed. Another obstacle is the heterogeneity in drinking motive measurement (for details, see Kuntsche et al., 2005). Thus, future studies should use well-defined, theoretically-based, homogenous instruments to disentangle cultural from possible measurement differences across surveys.

4.2. *Drinking motive personality types*

Taken all together, two types of adolescents and young adults with a particular personality, drinking motive structure and alcohol-related outcomes appear to exist. First, those who drink for enhancement motives were shown to be extravert, impulsive, and aggressive. They tend to be sensation-seekers, and to have low inhibitory control, low levels of responsibility and a weak will to achieve. Furthermore, enhancement drinkers are likely to be male (see above) and to use alcohol excessively, including the consumption of high quantities in single occasions (for a review, see Kuntsche et al., 2005). Apparently, these young people like and actively seek to feel drunk as well as other extreme sensations due to their extraverted, risk-seeking personality.

Second, those who drink for coping motives were shown to be neurotic and to have a low level of agreeableness and a negative view of the own self. They tend to have difficulties identifying and describing emotions, as well as being fearful of anxiety-related sensations. Furthermore, coping drinkers tend to be female (at least in early and mid adolescence, see above) and to experience alcohol-related problems additionally to their heavy drinking (for a review, see Kuntsche et al., 2005). Apparently, these young people cumulate personal problems due to their oversensitive, anxiety-fearing personality and they tend to use alcohol as a means to cope with them. However, while effective in the short term, drinking to cope as a way to compensate for deficits in problem-focused coping leads to greater adverse long-term consequences because the discrepancies that foster negative affects have never been adequately addressed (Cooper et al., 1995; Kassel, Jackson, & Unrod, 2000).

This classification, however, is limited to the fact that the measurement of drinking motive differs between studies and that the evidence comes exclusively from North America and more than two thirds of the participants were college students. Although personality factors and their relations to drinking patterns were shown to be relatively invariant across cultures (e.g., Cook, Young, Taylor, & Bedford, 1998; Kjørheim, Mykletun, & Halvorsen, 1996; Vollrath & Torgersen, 2002) and across developmental stages (e.g., Gotham, Sher, & Wood, 1997; McCrae et al., 2002) the existence of particular combinations of gender, personality factors, drinking motives, drinking patterns, and alcohol-related consequences in the sense of a joint pattern across cultures and developmental stages has yet to be proved.

4.3. The usefulness of drinking motives for research and prevention

In this review, several indications for the validity of the drinking motive concept were found. First, results of the association between specific drinking motives and drinking situations (Cooper, 1994) are very consistent with the definition of these drinking motives (Cox & Klinger, 1988). Second, in several studies, drinking motives were consistently related to specific personality traits that were shown to be remarkably invariant across cultures (e.g., Cook et al., 1998; Kjørheim et al., 1996; Vollrath & Torgersen, 2002) and stable across the life-span (e.g., Gotham et al., 1997; McCrae et al., 2002). Third, like drinking styles, the indication of particular drinking motives appears to be culture-specific (e.g., Gire, 2002; Nagoshi et al., 1994). Together with the fact that drinking motives appear in parallel with the development of gender-specific drinking patterns and associated problems from early adolescence to early adulthood, these results demonstrate the validity of the drinking motive concept and its usefulness for the research of the etiology of alcohol use, heavy drinking, and alcohol-related problems in adolescence and beyond.

In addition, drinking motives appear to be an interesting concept for targeting prevention programs for at-risk adolescents (Stewart et al., 2005). Gottfredson and Wilson (2003) conclude from their review of characteristics of effective school-based substance abuse prevention that the evidence suggests that targeting higher risk youths may yield stronger effects than targeting the general population (see also Masterman & Kelly, 2003). But even at-risk adolescents such as risky single occasion drinkers appear not to be a homogeneous group. Kuntsche and Gmel (2004), for example, found that social and solitary risky single occasion (or binge) drinkers differ in terms of the combination of their associated problems and conclude that preventive efforts, like competence-enhancing and social resistance programs, should be tailor made to the given problem constellation (see also Turrise, Padilla, & Wiersma, 2000). Current developments in prevention and early intervention highlight the need to include the interplay between personality and motivational factors underlying risky alcohol use in adolescents (Stewart et al., 2005).

Authors argue that by identifying and collecting information on the specific needs that alcohol serves for particular individuals, preventive strategies may be more effectively designed (Cooper, 1994; Miller, 1996). This review revealed that drinking motivations differ by gender and age and prevention approached should be tailored accordingly. For example, attention on drinking motivation in general is relevant in late childhood, social and enhancement motives in early adolescence and coping motives in late adolescence and early adulthood. Concerning the findings on personality, they argue for tailored interventions in adolescence focusing on two risk groups: (a) extravert, sensation-seeking boys who drink for enhancement motives and (b) neurotic, anxious girls who drink for coping motives.

References

- Alvarez, F. J., & del Rio, M. C. (1994). Gender differences in patterns of alcohol consumption in Spain. *Alcoholism, Clinical and Experimental Research*, 18(6), 1342–1347.
- Baer, J. S. (1994). Effects of college residence on perceived norms for alcohol consumption: An examination of the first year in college. *Addictive Behaviors*, 8(1), 43–50.
- Baer, J. S. (2002). Student factors: Understanding individual variation in college drinking. *Journal of Studies on Alcohol*, 14, 40–53.
- Beck, K. H., Thombs, D. L., Mahoney, C. A., & Fingar, K. M. (1995). Social context and sensation seeking: Gender differences in college student drinking motivations. *International Journal of the Addictions*, 30(9), 1101–1115.
- Bradizza, C. M., Reifman, A., & Barnes, G. M. (1999). Social and coping reasons for drinking: Predicting alcohol misuse in adolescents. *Journal of Studies on Alcohol*, 60(4), 491–499.
- Bradley, J. R., Carman, R. S., & Petree, A. (1991). Expectations, alienation, and drinking motives among college men and women. *Journal of Drug and Alcohol Education*, 21(1), 27–33.
- Carey, K. B., & Correia, C. J. (1997). Drinking motives predict alcohol-related problems in college students. *Journal of Studies on Alcohol*, 58(1), 100–105.
- Carpenter, K. M., & Hasin, D. S. (1998). Reasons for drinking alcohol: Relationships with DSM-IV alcohol diagnoses and alcohol consumption in a community sample. *Psychology of Addictive Behaviors*, 12(3), 168–184.
- Carrigan, G., Samoluk, S. B., & Stewart, S. H. (1998). Examination of the short form of the inventory of drinking situations (IDS-42) in a young adult university student sample. *Behaviour Research and Therapy*, 36(7–8), 789–807.
- Colder, C. R., & O'Connor, R. (2002). Attention biases and disinhibited behavior as predictors of alcohol use and enhancement reasons for drinking. *Psychology of Addictive Behaviors*, 16(4), 325–332.
- Comeau, N., Stewart, S. H., & Loba, P. (2001). The relations of trait anxiety, anxiety sensitivity, and sensation seeking to adolescents' motivations for alcohol, cigarette, and marijuana use. *Addictive Behaviors*, 26(6), 803–825.
- Cook, M., Young, A., Taylor, D., & Bedford, A. P. (1998). Personality correlates of alcohol consumption. *Personality and Individual Differences*, 24(5), 641–647.
- Cooper, M. L. (1994). Motivations for alcohol use among adolescents: Development and validation of a four-factor-model. *Psychological Assessment*, 6(2), 117–128.
- Cooper, M. L., Agocha, V. B., & Sheldon, M. S. (2000). A motivational perspective on risky behaviors: The role of personality and affect regulatory processes. *Journal of Personality*, 68(6), 1058–1088.
- Cooper, M. L., Frone, M. R., Russell, M., & Mudar, P. (1995). Drinking to regulate positive and negative emotions: A motivational model of alcohol use. *Journal of Personality and Social Psychology*, 69(5), 990–1005.
- Costa, Jr. P., & McCrae, R. R. (1992). *Revised NEO personality inventory (NEO-PI-R) and NEO five-factor inventory (NEO-FFI): Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Cox, W. M., & Klinger, E. (1988). A motivational model of alcohol use. *Journal of Abnormal Psychology*, 97(2), 168–180.
- Cox, W. M., & Klinger, E. (1990). Incentive motivation, affective change, and alcohol use: A model. In W. M. Cox (Ed.), *Why people drink. Parameters of alcohol as a reinforcer* (pp. 291–314). New York/Oxford: Gardner Press.
- Edwards, G., Hensman, C., & Peto, J. (1973). A comparison of female and male motivation for drinking. *International Journal of the Addictions*, 8(4), 577–587.
- Fahrenkrug, H., & Gmel, G. (1998). Drinking alcohol with your meals in Switzerland: Is it beneficial to your health? *Alcologia*, 10(3), 118–125.
- Feldman, L., Harvey, B., Holowaty, P., & Shortt, L. (1999). Alcohol use beliefs and behaviors among high school students. *Journal of Adolescent Health*, 24(1), 48–58.
- Gire, J. T. (2002). A cross-national study of motives for drinking alcohol. *Substance Use and Misuse*, 37(2), 215–223.
- Gotham, H. J., Sher, K. J., & Wood, P. K. (1997). Predicting stability and change in frequency of intoxication from the college years to beyond: Individual-difference and role transition variables. *Journal of Abnormal Psychology*, 106(4), 619–629.
- Gottfredson, D. C., & Wilson, D. B. (2003). Characteristics of effective school-based substance abuse prevention. *Prevention Science*, 4(1), 27–38.
- Gray, J. A. (1982). *The neuropsychology of anxiety: An inquiry into the functions of the septo-hippocampal system*. Oxford: Oxford University Press.

- Heaven, P. C. L. (1996). Personality and self-reported delinquency: Analysis of the “Big Five” personality dimensions. *Personality and Individual Differences, 20*, 47–54.
- Jerez, S. J., & Coviello, A. (1998). Alcohol drinking and blood pressure among adolescents. *Alcohol, 16*(1), 1–5.
- Jessor, R., Graves, T. D., Hanson, R. C., & Jessor, S. L. (1968). *Society, personality, and deviant behavior: A study of a tri-ethnic community*. New York, NY: Holt, Rinehart, and Winston.
- Jung, J. (1977). Drinking motives and behavior in social drinkers. *Journal of Studies on Alcohol, 38*(5), 944–952.
- Kairouz, S., Glikzman, L., Demers, A., & Adlaf, E. M. (2002). For all these reasons, I do...drink: A multilevel analysis of contextual reasons for drinking among Canadian undergraduates. *Journal of Studies on Alcohol, 63*(5), 600–608.
- Kassel, J. D., Jackson, S. I., & Unrod, M. (2000). Generalized expectancies for negative mood regulation and problem drinking among college students. *Journal of Studies on Alcohol, 61*(2), 332–340.
- Kjærheim, K., Mykletun, R., & Halvorsen, T. (1996). Selection into the restaurant business based on personality characteristics and the risk of heavy drinking. *Personality and Individual Differences, 21*(4), 625–629.
- Klein, H. (1992). Self-reported reasons why college students drink. *Journal of Alcohol and Drug Education, 37*, 14–28.
- Kuntsche, E. N., & Gmel, G. (2004). Emotional well-being and violence among social and solitary risky single occasion drinkers in adolescence. *Addiction, 99*(3), 331–339.
- Kuntsche, E. N., Gmel, G., Wicki, M., Rehm, J., & Grichting, E. (in press). Disentangling gender and age effects of risky single occasion drinking over the adolescent years. *European Journal of Public Health*.
- Kuntsche, E. N., Knibbe, R., Gmel, G., & Engels, R. (2005). Why do young people drink? A review of drinking motives. *Clinical Psychology Review, 25*(7), 841–861.
- Kuntsche, E. N., Knibbe, R., Gmel, G., & Engels, R. (in press). Replication and validation of the Drinking Motive Questionnaire Revised (DMQ-R, Cooper, 1994) among adolescents in Switzerland. *European Addiction Research*.
- Kuntsche, E. N., Rehm, J., & Gmel, G. (2004). Characteristics of binge drinkers in Europe. *Social Science and Medicine, 59*(1), 113–127.
- Lo, C. C., & Globetti, G. (2000). Gender differences in drinking patterns among Hong Kong Chinese youth: A pilot study. *Substance Use and Misuse, 35*(9), 1297–1306.
- Loukas, A., Krull, J. L., Chassin, L., & Carle, A. C. (2000). The relation of personality to alcohol abuse/dependence in a high-risk sample. *Journal of Personality, 68*(6), 1153–1175.
- MacLean, M. G., & Lecci, L. (2000). A comparison of models of drinking motives in a university sample. *Psychology of Addictive Behaviors, 14*(1), 83–87.
- Masterman, P. W., & Kelly, A. B. (2003). Reaching adolescents who drink harmfully: Fitting intervention to developmental reality. *Journal of Substance Abuse Treatment, 24*(4), 347–355.
- McCarty, D., & Kaye, M. (1984). Reasons for drinking: Motivational patterns and alcohol use among college students. *Addictive Behaviors, 9*(2), 185–188.
- McCrae, R. R., Costa Jr., P. T., Terracciano, A., Parker, W. D., Mills, C. J., De Fruyt, F., et al. (2002). Personality trait development from age 12 to age 18: Longitudinal, cross-sectional, and cross-cultural analyses. *Journal of Personality and Social Psychology, 83*(6), 1456–1468.
- McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality, 60*(2), 175–215.
- McNally, A. M., Palfai, T. P., Levine, R. V., & Moore, B. M. (2003). Attachment dimensions and drinking-related problems among young adults. The mediational role of coping motives. *Addictive Behaviors, 28*, 1115–1127.
- Miller, W. R. (1996). Motivational interviewing: Research, practice, and puzzles. *Addictive Behaviors, 21*(6), 835–842.
- Montgomery, R. L., Benedicto, J. A., & Haemmerlie, F. M. (1993). Personal vs. social motivations of undergraduates for using alcohol. *Psychological Reports, 73*(3 Pt 1), 960–962.
- Nagoshi, C. T., Nakata, T., Sasano, K., & Wood, M. D. (1994). Alcohol norms, expectancies, and reasons for drinking and alcohol use in a U.S. versus a Japanese college sample. *Alcoholism, Clinical and Experimental Research, 18*(3), 671–678.
- Neff, J. A. (1997). Solitary drinking, social isolation, and escape drinking motives as predictors of high quantity drinking, among Anglo, African American and Mexican American. *Alcohol and Alcoholism, 32*(1), 33–41.
- Palmqvist, R. A., Martikainen, L. K., & vonWright, M. R. (2003). A moving target: Reasons given by adolescents for alcohol and narcotics use, 1984 and 1999. *Journal of Youth and Adolescence, 32*(3), 195–203.
- Plant, M. A., Bagnall, G., & Foster, J. (1990). Teenage heavy drinkers: Alcohol-related knowledge, beliefs, experiences, motivation and the social context of drinking. *Alcohol and Alcoholism, 25*(6), 691–698.

- Reiss, S., Peterson, R. A., Gursky, D. M., & McNally, R. J. (1986). Anxiety sensitivity, anxiety frequency and the prediction of fearfulness. *Behaviour Research and Therapy*, 24(1), 1–8.
- Riley, J. M., Marden, C. F., & Lifshitz, M. (1948). The motivational pattern of drinking based on the verbal responses of a cross-section sample of users of alcoholic beverages. *Quarterly Journal of Studies on Alcohol*, 9, 353–361.
- Room, R., & Mäkelä, K. (2000). Typologies of the cultural position of drinking. *Journal of Studies on Alcohol*, 61(3), 475–483.
- Rutledge, P. C., & Sher, K. J. (2001). Heavy drinking from the freshman year into early young adulthood: The roles of stress, tension-reduction drinking motives, gender and personality. *Journal of Studies on Alcohol*, 62(4), 457–466.
- Simons, J., Correia, C. J., & Carey, K. B. (2000). A comparison of motives for marijuana and alcohol use among experienced users. *Addictive Behaviors*, 25(1), 153–160.
- Smith, M. J., Abbey, A., & Scott, R. O. (1993). Reasons for drinking alcohol: Their relationship to psychosocial variables and alcohol consumption. *International Journal of the Addictions*, 28(9), 881–908.
- Stewart, S. H., Conrod, P. J., Marlatt, G. A., Comeau, M. N., Thush, C., & Krank, M. (2005). New developments in prevention and early intervention for alcohol abuse in youths. *Alcoholism, Clinical and Experimental Research*, 29(2), 278–286.
- Stewart, S. H., & Devine, H. (2000). Relations between personality and drinking motives in young adults. *Personality and Individual Differences*, 29, 495–511.
- Stewart, S. H., Karp, J., Pihl, R. O., & Peterson, R. A. (1997). Anxiety sensitivity and self-reported reasons for drug use. *Journal of Substance Abuse*, 9, 223–240.
- Stewart, S. H., Loughlin, H. L., & Rhyno, E. (2001). Internal drinking motives mediate personality domain — drinking relations in young adults. *Personality and Individual Differences*, 30, 271–286.
- Stewart, C., & Power, T. G. (2002). Identifying patterns of adolescent drinking: A tri-ethnic study. *Journal of Studies on Alcohol*, 63(2), 156–168.
- Stewart, S. H., & Zeitlin, S. B. (1995). Anxiety sensitivity and alcohol use motives. *Journal of Anxiety Disorders*, 9(3), 229–240.
- Stewart, S. H., Zeitlin, S. B., & Samoluk, S. B. (1996). Examination of a three-dimensional drinking motives questionnaire in a young adult university student sample. *Behaviour Research and Therapy*, 34(1), 61–71.
- Stewart, S. H., Zvolensky, M. J., & Eifert, G. H. (2002). The relations of anxiety sensitivity, experiential avoidance, and alexithymic coping to young adults' motivations for drinking. *Behavior Modification*, 26(2), 274–296.
- Suls, J., Martin, R., & David, J. P. (1998). Person–environment fit and its limits: Agreeableness, neuroticism, and emotional reactivity to interpersonal conflict. *Personality and Social Psychology Bulletin*, 24, 88–98.
- Theakston, J. A., Stewart, S. H., Dawson, M. Y., Knowlden-Loewen, S. A. B., & Lehman, D. R. (2002). Big-Five personality domains predict drinking motives. *Personality and Individual Differences*, 37, 971–984.
- Turrissi, R., Padilla, K. K., & Wiersma, K. A. (2000). College student drinking: An examination of theoretical models of drinking tendencies in freshmen and upperclassmen. *Journal of Studies on Alcohol*, 61(4), 598–602.
- Vollrath, M., & Torgersen, S. (2002). Who takes health risks? A probe into eight personality types. *Personality and Individual Differences*, 32(7), 1185–1197.
- Webb, J. A., Getz, J. G., Baer, P. E., & McKelvey, R. S. (1999). Intentions to use alcohol among fifth and sixth graders: The roles of social and stress/coping motives. *American Journal of Orthopsychiatry*, 69(4), 541–547.
- Weinberger, D. A., & Bartholomew, K. (1996). Social–emotional adjustment and patterns of alcohol use among young adults. *Journal of Personality*, 64(2), 495–527.
- Wild, T. C., Hinson, R., Cunningham, J., & Bacchiochi, J. (2001). Perceived vulnerability to alcohol-related harm in young adults: Independent effects of risky alcohol use and drinking motives. *Experimental and Clinical Psychopharmacology*, 9(1), 117–125.
- Windle, M. (1996). An alcohol involvement typology for adolescents: Convergent validity and longitudinal stability. *Journal of Studies on Alcohol*, 57(6).
- Windle, M., & Windle, R. C. (1996). Coping strategies, drinking motives, and stressful life events among middle adolescents: Associations with emotional and behavioral problems and with academic functioning. *Journal of Abnormal Psychology*, 105(4), 551–560.
- Zuckerman, M. (1994). *Behavioral expressions and biological bases of sensation seeking*. New York: Cambridge University Press.