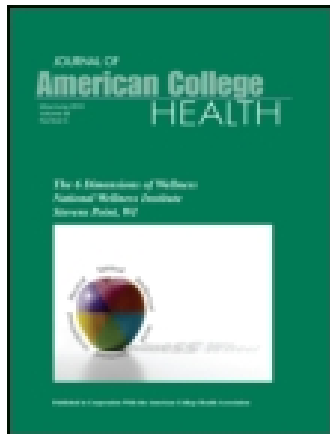


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# Heavy Episodic Drinking in College Students: Associations With Features of Psychopathy and Antisocial Personality Disorder

Patrick Sylvers, PhD; Kristin E. Landfield, MA; Scott O. Lilienfeld, PhD

**Abstract. Objective:** This study extends the college heavy episodic drinking literature by examining the associations between features of psychopathy and antisocial personality disorder (ASPD), on the one hand, and heavy episodic drinking and associated problem behaviors, on the other. **Participants:** Participants were 159 (85 male, 74 female) undergraduates from a private university. **Methods:** Participants completed self-report measures assessing alcohol use, frequency, and consequences of heavy episodic drinking, and personality pathology. **Results:** It was found that psychopathy, independent of ASPD, was related to the prediction of heavy episodic drinking frequency and problems associated with alcohol use. It was also found that the relation between traits of psychopathy and heavy episodic drinking are limited largely to the impulsive and antisocial aspects of this condition. **Conclusion:** These findings point to the need for further investigation of the association between psychopathy and ASPD traits and heavy episodic drinking behaviors in college students.

**Keywords:** alcohol, personality, psychopathy, student, college

Heavy episodic drinking (HED) is a serious public health issue affecting college campuses.<sup>1</sup> Researchers typically define this form of drinking as the consumption of 5 or more drinks in a sitting for men and 4 or more for women, sometimes termed the 5/4 convention.<sup>2</sup>

Wechsler and colleagues' Harvard College Alcohol Studies (CAS) highlighted serious consequences of college HED, such as deaths from acute alcohol poisonings and automobile collisions.<sup>3</sup> In the CAS surveys, nearly half (44%) of college students endorsed HED, and nearly one-fifth (19%) reported frequent episodes of HED.<sup>4</sup> The prevalence and severity of college.

HED have placed it on the national agenda, as evinced by Congress's formation of the National Institute on Alcoholism and Alcohol Abuse special task force.

Despite an extensive literature on the prevalence and treatment of college HED, there is a dearth of research on the relation between subclinical levels of personality disorder traits and HED behaviors in college students. For example, Courtney and Polich's recent comprehensive review of the young adult HED literature included no studies of personality disorder pathology and HED, although they noted that the physiological predisposition toward such drinking may both predispose to and "interact with the wider context of personality or psychiatric variables."<sup>1(p153)</sup> As a consequence, little is known about how abnormal personality traits relate to HED or its consequences. In this study, we investigated the relations between both psychopathy and antisocial personality disorder (ASPD) traits and college HED behavior.

Although numerous researchers have advanced links between both normal and abnormal personality and alcohol abuse,<sup>5</sup> only a handful has identified personality variables related to HED. In a review, Brennan et al<sup>6</sup> found consistent evidence for a relation between impulsivity and drinking behavior, such that impulsivity was associated with both the frequency and quantity of drinking. Moreover, Brennan and colleagues reviewed a number of studies that associated pleasure seeking, extraversion, impulsivity, rebelliousness, and nonconformity with HED.

More recently, Baer<sup>7</sup> reviewed the heavy drinking literature and found that personality variables related to sensation seeking and disinhibition consistently was related to both the frequency of drinking and heavy drinking. Similarly, in a review, Ham and Hope<sup>8</sup> found that sensation seeking and neuroticism was correlated with heavy drinking. Although heavy drinking was consistently associated with sensation seeking, "heavy" was only sometimes defined according to the 5/4 convention. Baer<sup>7</sup> reported that nonconformity and

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deviance predicted the early onset of heavy drinking, which predicts college HED.<sup>9</sup>

Additionally, researchers have investigated the associations between college HED and the Five Factor Model of personality.<sup>10</sup> Studies have consistently noted correlations between extraversion and related traits, such as sociability, and college HED behavior.<sup>9</sup> The literature regarding neuroticism is mixed: Some studies have found a relation with HED behavior,<sup>11</sup> but others have not.<sup>7</sup>

Weaver et al<sup>12</sup> proposed that addressing individual differences in personality may refine intervention efforts directed at HED. Despite the relatively consistent literature investigating broad personality factors and HED, identifying personality syndromes that are associated with college HED may provide a more meaningful identifier of at-risk individuals. For instance, Earlywine et al<sup>13</sup> found that treating several personality traits associated with college HED (eg, risk taking, sensation seeking) as indicators of a single latent externalizing construct strengthened the association between personality traits and college HED.

Treating related personality traits as facets of an overarching syndrome may therefore enhance the detection of individuals at risk for binge drinking. Many traits associated with college HED, especially those associated with poor impulse control and behavioral deviance, are also central features of psychopathy and antisocial personality disorder (ASPD). Psychopathy is a constellation of personality traits and associated behaviors, such as lack of empathy and guilt, dishonesty, glib charm, poor impulse control, and shallow emotional experience.<sup>14</sup> Studies suggest that psychopathy predisposes individuals to a variety of reckless and irresponsible behaviors.<sup>15</sup>

Factor analyses of commonly used measures of psychopathy<sup>16</sup> suggest that the syndrome is underpinned by at least 2 underlying factors. Factor 1 is characterized by interpersonal and affective deficits, such as lack of empathy and superficial charm, whereas Factor 2 is characterized by more behaviorally based deficits, such as irresponsibility and poor impulse control.<sup>17</sup> ASPD, which is closely akin to psychopathy Factor 2, is a DSM diagnosis anchored to behavioral deviance. However, unlike psychopathy, almost all ASPD symptoms are operationalized in terms of specific behaviors, such as repeated theft, vandalism, and physical aggression, rather than personality features.

The fact that psychopathy, ASPD, and alcohol abuse often co-occur within individuals and within families suggests some degree of etiological relatedness.<sup>18</sup> For example, ASPD represents a potent risk factor for early-onset alcohol abuse,<sup>19</sup> which predicts heavy drinking later in life.<sup>7</sup> Similarly, Tucker et al<sup>20</sup> found that childhood deviance, a prerequisite for the ASPD diagnosis, is a predictor of early HED.

In his seminal writings, Cleckley<sup>21</sup> averred that alcohol facilitates the expression of psychopaths' existing traits and impulses. Thus, HED may be one manifestation of psychopathic deviance and nonconformity. Smith and Newman<sup>18</sup> examined whether the 2 major factors of psychopathy were differentially associated with drinking. They found that al-

cohol abuse was positively related to general social deviance (Factor 2) but was unrelated to the core interpersonal and affective features of psychopathy (Factor 1). More recently, Reardon et al<sup>22</sup> found that the relation between social deviance (Factor 2) and alcohol abuse was moderated by the affective and interpersonal (Factor 1) characteristics of psychopathy, such that the relation between Factor 2 and alcohol abuse decreased as Factor 1 increased. This intriguing finding suggests that Factor 1 traits may play a protective role against alcohol abuse, perhaps because they are associated with lower levels of anxiety and distress.<sup>17</sup> More broadly, this finding is consistent with the view that Factor 1 traits index a personality dimension of emotional resilience.<sup>23</sup>

Although the respective associations between psychopathy and ASPD with alcohol abuse are well established,<sup>18</sup> no studies have examined the association between subclinical levels of these disorders and college HED. The taxometric literature suggests that psychopathy and ASPD are underpinned by dimensions rather than taxa, viz discrete categories in nature.<sup>24</sup>

This literature provides a strong justification for examining the correlates of psychopathy in nonclinical (eg, student) samples.

The present study extended the existing literature by investigating the associations between both psychopathy and ASPD traits and college HED. We also examined whether measures of psychopathy possess incremental validity above and beyond measures of ASPD in predicting HED and associated problems. This latter question is potentially important, as it may hold implications for whether HED can be predicted by antisocial behaviors alone. As studies have found differential correlates of psychopathy in men and women,<sup>25</sup> we conducted correlational analyses for males and females separately. Based on the literature, we advanced 4 primary hypotheses:

1. We predicted that psychopathy and ASPD traits would be positively related to the frequency of HED behaviors and their associated problems.
2. Consistent with the literature on psychopathy and alcohol abuse, we hypothesized that psychopathy Factor 2 traits would be more strongly related to HED behaviors than Factor 1.
3. We predicted that, consistent with Reardon et al,<sup>22</sup> psychopathy Factor 1 traits would moderate the relationship between psychopathy Factor 2 and HED, such that the presence of Factor 1 traits would mitigate the association between Factor 2 and HED.
4. In exploratory analyses, we investigated whether psychopathy provided incremental validity above ASPD in predicting HED behaviors, and vice versa.

## METHODS

### Participants

Participants were 159 undergraduate students, predominantly freshmen, from a private southeastern university.

Eight-five (53.5%) participants were male, and 74 (46.5%) were female. The sample consisted primarily of Caucasian students ( $n = 103$ ; 64.8%), but also included 24 (15.1%) Asian American, 10 (6.4%) African American, 9 (5.7%) Latino/Hispanic American, 1 (0.6%) Pacific Islander, and 12 (7.5%) biracial or multiracial students. The mean age in the sample was 19.1 ( $SD = 0.97$ ) years old, ranging from 17 to 24. Participants gave written informed consent for participating in the study and voluntarily completed questionnaire measures. This study was approved by the university's institutional review board.

### Self-Report Measures

#### Alcohol Use and HED

*Alcohol Use Disorders Identification Test (AUDIT).*<sup>26</sup> The AUDIT is a widely used 10-item self-report measure of drinking behaviors and associated problems on a 5-point Likert-type scale. The AUDIT has displayed good psychometric properties in both clinical and nonclinical settings. The AUDIT displayed adequate internal consistency in this sample (Cronbach's  $\alpha = .84$ ).

*Michigan Alcoholism Screening Test (MAST).*<sup>27</sup> The MAST is a 24-item dichotomous (Yes/No) self-report measure of drinking behaviors and associated problems. The psychometric properties of the MAST have been widely studied and are generally considered acceptable. In this sample, the MAST displayed good internal consistency (Cronbach's  $\alpha = .93$ ).

*Binge Drinking Survey.* The binge drinking survey (BDS) is a brief gender-specific measure of HED behavior adapted from a 20-page survey used by Wechsler et al.<sup>28</sup> The survey defines 1 alcoholic beverage as 1 ounce of liquor, 5 ounce of wine, or 12 ounce of beer. Questions on the survey assess drinking behavior and consequences of drinking, including hangover, missing class, falling behind in schoolwork, and doing things that they later regretted, over the previous 2 weeks. HED was operationalized as consuming 5 or more drinks in 1 sitting for males, and 4 or more drinks in 1 sitting for females.

#### Personality Disorder Traits

*Psychopathic Personality Inventory-Revised (PPI-R).*<sup>16</sup> The PPI-R is a self-report measure of psychopathy consisting of 154 items in a 4-point Likert-type format. The PPI-R is designed specifically to measure psychopathy in nonclinical populations, possesses adequate levels of validity in nonclinical samples, and is composed of 2 factors that are consistent with the previously noted conceptualizations of psychopathy. Cronbach's alpha for the PPI-R total score in this sample was .93; the alphas for Factor 1 and Factor 2 were .91 and .91, respectively.

*Short Coolidge Axis II Inventory-ASPD scale (SCATI-ASPD).*<sup>29</sup> The SCATI assesses symptoms of the 10 major

personality disorders from the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*. The SCATI is a 70-item measure, scored on 4-point scale (1 = strongly false to 4 = strongly true). Cronbach's alpha for the ASPD scale was .67 in this sample. In the analyses reported here, the SCATI-ASPD scale was entered as a continuous (dimensional) score.

## RESULTS

### Descriptive Statistics

The means and standard deviations for all measures, except for the BDS, are displayed in Table 1 and split by gender. Only continuous scores were used in the analyses, consistent with a dimensional approach to personality pathology and the absence of cutting scores on these measures.<sup>21</sup> For the purposes of comparison, means (standard deviations) in the normative samples of 18- to 24-year-old college students for the PPI-R were 301.06 (31.26) and 276.75 (31.14) for males and females, respectively.<sup>21</sup> Five participants' data were excluded from the analyses for abnormally high scores on the PPI-R VRIN, a scale that detects random or careless responding. Subsidiary analyses (not reported here) controlling for the Virtuous Responding and Deviant Responding scales of the PPI-R did not alter any of the major findings (the results of these analyses are available from the first author on request). Males scored significantly higher than females on all measures with the exception of the MAST.

Table 2 displays the frequency of HED and associated problem behaviors by gender. In this sample, 65.9% of males and 51.4% of females binge drank at least once in the 2 weeks prior to completing the survey; this difference was marginally significant ( $\chi^2[1] = 3.43, p = .06$ ).

Moreover, 77.6% of males and 63.5% females ( $\chi^2[1] = 3.82, p = .05$ ) reported experiencing at least 1 associated problem following the consumption of alcohol within the 2 weeks prior to completing the survey.

### Hypothesis 1

Partially supporting Hypothesis 1, results of correlational analyses (see Table 3) suggested that SCATI-ASPD scale scores were significantly correlated with the frequency of HED and associated problem behaviors in both males and females, whereas PPI-R total scores were significantly associated with HED only in males. Similarly, SCATI-ASPD scale scores were significantly correlated with problem drinking, as assessed by the AUDIT and MAST, in males and females, whereas problem drinking was only associated with PPI-R total scores in males.

### Hypothesis 2

Consistent with Hypothesis 2, PPI-R Factor 2 scores were more strongly correlated with the frequency of HED (Fisher  $z = 3.45, p < .001$ ; Fisher  $z = 1.69, p < .05$ ) and associated problem behaviors (Fisher  $z = 3.67, p < .01$ ; Fisher  $z = 1.69, p < .05$ ) than PPI-R Factor 1 scores in both males and

**TABLE 1. Means and Standard Deviations for the AUDIT, MAST, PPI-R and SCATI-ASPD**

Measure	Males		Females		<i>t</i> (156)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
AUDIT	8.91	5.14	6.66	5.37	2.63*
MAST	3.87	1.81	3.43	1.43	1.69*
PPI-R total score	328.94	28.95	324.71	25.63	4.95*
PPI-R Factor 1	122.78	20.16	109.13	19.65	4.21*
PPI-R Factor 2	146.99	23.22	133.40	24.27	3.53*
SCATI-ASPD	7.89	2.46	6.86	2.48	2.61*

Note. AUDIT = Alcohol Use Disorders Identification Test; MAST = Michigan Alcoholism Screening Test; PPI-R = Psychopathic Personality Inventory-Revised; SCATI-ASPD = Short Coolidge Axis II Inventory-ASPD scale.

\**p* < .01.

females, respectively. Nevertheless, PPI-R Factor 2 scores were more strongly correlated with problem drinking than PPI-R Factor 1 scores in males (AUDIT: Fisher *z* = 2.30, *p* < .05; MAST: Fisher *z* = 2.77, *p* < .01), but not females (AUDIT: Fisher *z* = 1.04, *p* = .15; MAST: Fisher *z* = 1.47, *p* = .07).

**Hypothesis 3**

Moderated multiple regression analyses (MMRA) suggested a trend for PPI-R Factor 1 scores to moderate the relationship between PPI-R Factor 2 scores and the frequency of HED behaviors (*F*[1, 153] = 2.46, *p* = .07,  $\Delta R^2$  = .02), but not associated problem behaviors (*F*[1, 153] = 1.05, *p* = .31,  $\Delta R^2$  = .006). The direction of the moderation indicated that the relationship between PPI-R Factor 2 scores and HED behaviors decreased as PPI-R Factor 1

scores increased. In contrast, PPI-R Factor 1 scores did not moderate the relationship between PPI-R Factor 2 scores and problem drinking behavior (AUDIT: *F*[1, 153] = 0.42, *p* = .52,  $\Delta R^2$  = .003; MAST: *F*[1, 153] = 0.51, *p* = .48,  $\Delta R^2$  = .003)

**Hypothesis 4**

Hierarchical MMRA indicated that PPI-R total scores provide incremental validity above SCATI ASPD score in predicting the frequency of HED behaviors (*F*[1, 150] = 4.97, *p* < .05,  $R^2$  = .03), but not associated problem behaviors (*F*[1, 150] = 0.20, *p* = .65,  $R^2$  = .001). Conversely, SCATI ASPD scores provided incremental validity in predicting both the frequency of HED behaviors (*F*[1, 150] = 39.18, *p* < .001,  $R^2$  = .20) and associated problem behaviors (*F*[1, 150] = 25.71, *p* < .001,  $R^2$  = .13).

**TABLE 2. Descriptive Statistics for the Heavy Episodic Drinking Survey**

	BDS: Frequency									
	None		Once		Twice		3 Times		3+ Times	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Males	29	34.1	13	15.3	13	15.3	11	12.9	19	22.4
Females	36	48.6	7	9.5	9	12.1	4	5.4	13	17.6

	BDS: Associated problems							
	Missed a class?		Hangover?		Behind in schoolwork?		Did something later regretted?	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Males	58	68.2	38	44.7	26	30.6	39	45.9
Females	36	48.6	28	37.8	18	24.3	29	39.2

Note. BDS: Frequency refers to the number of times that students reported heavy episodic drinking within 2 weeks of completing the survey; BDS associated problems refers to the number of students who reported experiencing an adverse consequence of drinking behavior within 2 weeks of completing the survey.

**TABLE 3. Correlations Among the AUDIT, BDS, MAST, PPI-R, and SCATI-ASPD by Gender**

	AUDIT	BDS: Frequency	BDS: AP	MAST	PPI-R Total	PPI-R Factor 1	PPI-R Factor 2	SCATI ASPD
AUDIT	—	.83**	.80**	.61**	.32**	.10**	.34**	.40**
BDS: Frequency	.82**	—	.74**	.42**	.25**	-.03**	.31**	.41**
BDS: AP	.72**	.66**	—	.48**	.27**	-.02**	.34**	.41**
MAST	.63**	.44**	.49**	—	.29**	.06**	.35**	.31**
PPI-R total	.19**	.20**	.28**	.18**	—	.65**	.78**	.40**
PPI-R Factor 1	.10**	.09**	.09**	.07**	.73**	—	.18**	.27**
PPI-R Factor 2	.22**	.23**	.36**	.24**	.82**	.33**	—	.69**
SCATI ASPD	.52**	.52**	.52**	.38**	.52**	.43**	.69**	—

Note. Males are represented above the diagonal, females are represented below. BDS: AP = Heavy Episodic Drinking Survey, Associated Problems.  
\* $p < .05$ ; \*\* $p < .01$ .

### COMMENT

The present study investigated the association between HED and associated problem behaviors with both psychopathy and ASPD traits in a college sample. Consistent with the CAS surveys, more than half of our sample engaged in HED behavior and experienced associated problem behaviors in the 2 weeks prior to the study.<sup>1</sup> The results from this study yielded 3 main conclusions. First, the overall associations between subclinical psychopathy and ASPD traits with college HED were consistent with the literature in delinquent and inmate populations<sup>22</sup> in that HED behaviors were positively associated with psychopathy and ASPD traits.

Second and consistent with the forensic literature,<sup>22</sup> college HED was more strongly associated with the impulsive antisociality factor of psychopathy than with the interpersonal/affective factor. This finding dovetails with the broader personality and HED literature suggesting that impulsivity, deviance, and sensation seeking are associated with HED behavior.<sup>7</sup> They go beyond these findings in suggesting that many of the traditional “personality” traits associated with psychopathy, such as low social anxiety and fearlessness, are largely unrelated to HED risk. Our findings also partially support the findings of Reardon et al<sup>22</sup> in that the relationship between HED and the impulsive antisociality factor of psychopathy decreased with increases in the interpersonal/affective factor. Taken together, these 2 sets of results suggest that elevated levels of certain traits of psychopathy, especially its core interpersonal and affective features (eg, low social and physical fear, absence of anxiety), may buffer at-risk individuals from heavy drinking, perhaps because these features index a predisposition toward emotional resilience.<sup>22</sup> Nevertheless, our moderation findings were only marginally significant and did not generalize to other drinking measures, so they must be interpreted with caution.

Third, psychopathy traits provided an incremental contribution over ASPD traits in predicting the frequency of HED but not associated problem behaviors, whereas ASPD traits provided an incremental contribution over psychopathy in predicting the frequency of HED and associated problem

behaviors. Taken together, these findings suggest that psychopathic and ASPD traits may each provide unique contributions to the prediction of college HED behavior.

However, this study was marked by several limitations.

### Limitations

First, all data were gathered using self-report, rendering our findings potentially susceptible to response biases. Nevertheless, subsidiary analyses (not reported here) controlling for social desirability (scores on the PPI-R Virtuous Responding scale) and extreme responding or malingering (scores on the PPI-R Deviant Responding scale) left the overall pattern of results unchanged. Second, the study relied on self-reported measures of impulsivity (eg, the PPI-R Carefree Nonplanfulness subscale) and did not include laboratory tasks of impulsivity, such as delay of gratification measures. Third, we conducted a number of correlational analyses, thereby increasing the probability of type 1 error. Hence, replication of our findings in independent samples will be important. Fourth, our sample was composed primarily of Caucasian students who were in their freshmen year, which may limit the generalizability of these findings, especially given possibility of the marked differences in drinking behaviors across classes. Fifth and finally, because our findings focused on college students, they may not generalize to HED in more severely affected populations. Moreover, it is possible that the association between psychopathy and HED changes at high levels of psychopathy, which were underrepresented in our high functioning undergraduate sample. To examine this possibility, we conducted subsidiary curvilinear multiple regression analyses (not reported here) to examine whether the association between PPI-R scores and HED departed from linearity, and found no evidence for any inflection points at high levels of the scatter plot.

### Conclusions

Our findings point to the need for further investigation of the associations between personality pathology, especially features of psychopathy and ASPD, and HED behaviors in

college students. They also help to clarify which lower-order traits of psychopathy are, and are not, associated with HED risk. As the frequency of HED behavior is directly related to short- and long-term negative health consequences,<sup>1</sup> these findings suggest that the identification of students at risk for chronic HED using brief and easily administered personality questionnaires may offer a valuable contribution. Moreover, these findings highlight the importance of considering personality when evaluating intervention strategies. For example, future studies should investigate whether psychopathy factor scores moderate treatment response, as the relation between psychopathic traits and treatment response remains poorly understood, especially in nonforensic populations.<sup>30</sup> In addition, future studies investigating the extent to which psychopathy per se affords a better understanding of college HED than configurations of traits from the domain of "normal" personality, such as those of the Five Factor Model,<sup>10</sup> remains to be determined. Finally, studies investigating the longitudinal relationship between psychopathy and HED through the college years should help to clarify whether the personality influences on HED change with age and class. In terms of practical implications for undergraduate programming and counseling, our data suggest that easy-to-administer pencil-and-paper assessment measures of psychopathy and ASPD may provide valuable insight into students' risk for engaging in HED behaviors. For example, although the SCATI-ASPD scale consists only of 6 questions, it accounted for between 9% and 26% of the variance in HED behaviors in our sample. We therefore encourage further research into psychopathic personality traits and risk for HED.

### NOTE

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