



Examining the relationship among substance abuse, negative emotionality and impulsivity across subtypes of antisocial and psychopathic substance abusers[☆]

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ABSTRACT

Growing evidence suggests that individuals with Antisocial Personality Disorder (ASPD) can be categorized into theoretically meaningful subtypes. This study builds on earlier cluster-analytic research (Poythress et al., 2010) that identified four subtypes of ASPD in a large sample of prison inmates and offenders ordered into mandatory substance abuse treatment. These four subtypes (primary, secondary, and “fearful” psychopathic and non-psychopathic ASPD) differed in theoretically important ways on various criterion measures. Of those participants in substance abuse treatment ($N=571$), we compare the four clusters, as well as non-ASPD substance abusers, in terms of (a) the severity of their self-reported alcohol and drug problems and (b) whether the severity of their substance abuse is predicted by similar etiologically important correlates (i.e., negative emotionality, impulsivity). There were modest subgroup differences in abuse, although as expected secondary psychopaths reported more severe misuse than primary psychopaths. Associations between impulsivity and negative emotionality and drug use for the total sample were in the expected direction, though relatively modest in magnitude. Unexpectedly, these associations were weaker among psychopathic subtypes relative to the non-psychopathic subgroups. These findings suggest that the etiology of drug use may differ across subgroups of chronically antisocial individuals.

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Introduction

Psychopathic personality (psychopathy) has been the focus of substantial attention from researchers over the course of the past several decades. Most modern conceptualizations of psychopathy date to the work of Cleckley (1941/1982), whose well-known criteria reflect prominent interpersonal (e.g., deceitful and insincere; unreliable; superficial charm), behavioral (e.g., irresponsibility; sexually promiscuity; impulsivity), and affective (e.g., grandiosity; lack of remorse or shame; incapacity for love) features thought to define the core of the disorder. Cleckley's criteria substantially underpin most contemporary measures of psychopathy (Lilienfeld, 1998), even though the current version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)

diagnosis of Antisocial Personality Disorder (ASPD) places little weight on the affective features that Cleckley believed were central to the disorder.

Not surprisingly, multiple social and behavioral problems have been linked to psychopathy, such as substance abuse and other forms of antisocial behavior. Investigations (e.g., Peters, Greenbaum, Edens, Carter, & Ortiz, 1998; Smith & Newman, 1990) of criminal justice samples have reported that offenders in general and those who are highly psychopathic in particular frequently meet criteria for a diagnosis of substance abuse or dependence. The reasons for the reasonably strong relationship between antisocial and psychopathic traits and substance abuse are not entirely clear, although various explanations have been proposed in the literature. For example, both negative emotionality and impulsivity have been investigated as risk factors for substance abuse, and both traits are more prevalent among persons involved in the criminal justice system. Before considering the potential role that these constructs might play in regards to the relationship between antisocial and psychopathic traits and substance abuse, it is necessary to first address the heterogeneous nature of ASPD.

Is there more than one type of “antisocial personality?”

Although intended to identify a relatively homogeneous diagnostic entity, it has long been argued that the DSM criteria for ASPD

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delineate a heterogeneous collection of individuals (Lilienfeld, 1994). Although psychopathy has traditionally been conceptualized as a unitary construct, more recent research has similarly viewed this disorder as multifaceted (Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003). Various parsings of items composing specific assessment measures, such as the Psychopathy Checklist-Revised (PCL-R; Hare, 2003), have delineated narrower trait dimensions, such as two (Harpur, Hare, & Hakstian, 1989), three (Cooke & Michie, 2001), and four (Hare, 2003) factor models of the 20 items comprising the PCL-R item pool. Expanding beyond factor analyses of measures such as the PCL-R, recent investigations have focused on identifying specific subtypes of psychopathy. The utility of a subtyping approach, as suggested by Hicks, Vaidyanathan, and Patrick (2010), is that “it identifies individuals high on these independent, latent psychopathy trait dimensions (as opposed to correlated, measured factor scores), clarifying the differential correlates without the need for statistical adjustments” (p. 39).

Much of the subtyping research on psychopathy in recent years has been informed by Benjamin Karpman’s (1941, 1948a, 1948b) distinction between “primary” and “secondary” psychopathy. Karpman conceptualized primary psychopaths as lacking anxiety, empathy, and guilt, and as more deliberate in their actions than secondary psychopaths. He regarded the latter to be more vulnerable to negative emotions, such as anxiety, and to exhibit higher levels of impulsivity, hostility, and aggression. Etiologically, Karpman theorized that secondary psychopathy develops primarily as a result of environmental factors, such as parental abuse or rejection and/or unresolved emotional conflict, whereas primary psychopathy develops from a postulated “constitutional” deficit, characterized by a lack of conscience (Karpman, 1948a, pp. 478, 485). Recent cluster analytic studies of male prisoner samples and male jail inmates (Hicks, Markon, Patrick, Krueger, & Newman, 2004; Poythress et al., 2010; Skeem, Johansson, Andershed, Kerr, & Louden, 2007; see also Swogger & Kosson, 2007, for similar findings) have yielded substantial support for psychopathic subtypes broadly consistent with these primary and secondary conceptualizations.

As arguably the most thorough and exhaustive empirical analysis of antisocial and psychopathic subtypes (as well as providing the basis for the current study), the findings of Poythress et al. (2010) warrant a brief review. Their sampling procedure included an assessment of over 1,400 offenders either receiving court-ordered substance abuse treatment or currently incarcerated in prisons across multiple jurisdictions throughout the U.S.—approximately half of whom met DSM-IV-TR criteria for ASPD. Based on theory (e.g., Karpman 1941, 1948a, 1948b; Lykken, 1995) and previous research, Poythress et al. expected the emergence of primary and secondary variants of psychopathy within the subsample of offenders who met ASPD criteria (those participants who did not meet ASPD criteria were not included in the cluster analysis). Given that many offenders who meet criteria for ASPD do not exhibit substantial psychopathic traits (Hare, 2003), Poythress et al. also hypothesized that they would identify an ASPD only group within their data set.

The clustering variables selected by Poythress et al. (2010) assessed the following constructs thought to be most theoretically relevant to parsing the heterogeneity of ASPD: psychopathic traits, fearless temperament, sensitivity to reward stimuli, assessment of early abuse, and trait anxiety. These constructs were operationalized via the Interpersonal, Affective, and Behavioral facets of the PCL-R, the Multidimensional Personality Questionnaire Harm Avoidance scale (MPQ-HA), Behavioral Activation System (BAS) subscales (RR, DR, Fun), the Childhood Abuse and Trauma Scale (CATS), and the Personality Assessment Inventory (PAI; Morey, 2007) Anxiety (ANX) scale, respectively.

Three of the four subtypes identified via model-based clustering corroborated distinctions among primary, secondary, and non-psychopathic ASPD offenders (see Fig. 1). The primary psychopathy

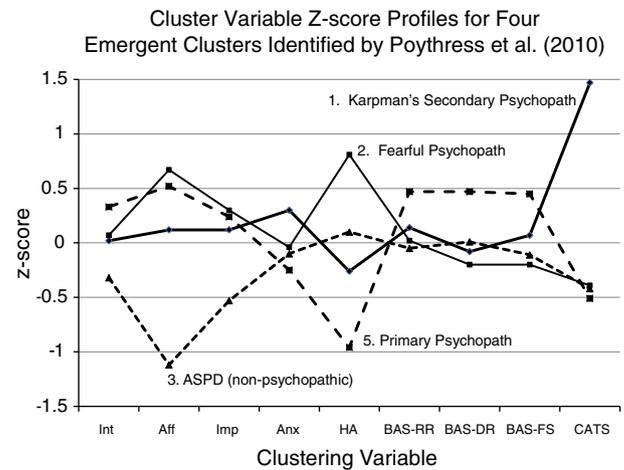


Fig. 1. Note. ASPD = Antisocial Personality Disorder; Int = interpersonal facet from the Psychopathy Checklist-Revised (PCL-R); Aff = affective facet from the PCL-R; Imp = impulsive lifestyle facet from the PCL-R; ANX = Anxiety scale from the Personality Assessment Inventory; HA = Harm Avoidance scale from the Multidimensional Personality Questionnaire; BAS-RR = Reward Responsiveness scale from the behavioral activation system scales; BAS-DR = Drive scale of the BAS scales; BAS-FS = Fun Seeking scale of the BAS scales; CATS = Child Abuse and Trauma Scale.

profile was marked by somewhat higher PCL-R scores on the core interpersonal and affective features rather than on behavioral features, and the lowest scores on fearful temperament and anxiety. The secondary group exhibited the highest mean anxiety of all groups, and had the highest score on the CATS, indicating strong endorsement of early stressful family events. As expected, the non-psychopathic ASPD cluster group did not exhibit markedly elevated scores on any of the clustering variables. A fourth unanticipated group also emerged from the analyses. These individuals appeared relatively psychopathic in terms of PCL-R facets but displayed an ostensibly fearful temperament in regards to significantly elevated MPQ-HA scores, thus provisionally being labeled “fearful psychopaths.”

Examination of external correlates of these clusters provided preliminary evidence of their construct validity (Poythress et al., 2010). In particular, theoretically informative differences emerged between primary and secondary groups across multiple domains. In particular, relative to the primary psychopathic group, significantly higher scores were observed among the secondary psychopaths for self-reported impulsivity and internalizing symptoms of psychopathology (e.g., depression).

Notably, Poythress et al. did not report any analyses specifically related to potential cluster differences in alcohol or drug use or abuse. Drug and alcohol problems were, however, included as variables in a broader “externalizing behavior” construct. As predicted, the secondary psychopathic subgroup obtained significantly higher mean scores on this externalizing dimension than did the primary psychopathic cluster.

Revisiting putative explanations for the psychopathy/substance abuse relationship

From the descriptions provided above, antisocial and psychopathic subtypes might be expected to differ both in terms of their level of substance abuse and the putative causal factors responsible for such abuse. For example, Lykken (1995) hypothesized that primary psychopaths are less prone to the use of alcohol and other sedating drugs than secondary psychopaths. Gudonis et al. (2009) similarly contended that negative emotionality plays a critical role in how psychopathic subtypes relate to substance use disorders, with a strong relationship between negative affect and substance abuse being particularly evident among secondary psychopaths relative to

primary psychopaths. Somewhat consistent with these hypotheses, research suggests stronger associations between externalizing symptoms, including substance abuse, and features of secondary psychopathy than between externalizing symptoms and features of primary psychopathy (Patrick, Hicks, Krueger, & Lang, 2005; Smith & Newman, 1990; Sylvers, Landfield, & Lilienfeld, in press). Similarly, Lynam, Whiteside, and Jones (1999) reported stronger associations between secondary psychopathy scores and substance use behaviors relative to primary psychopathy.

In addition to negative emotionality, impulsivity may play a causal role in substance abuse (Dawe, Guilo, & Loxton, 2004), particularly in offender populations. Although Cleckley did not consider primary psychopaths to be particularly impulsive *per se*, many contemporary models of ASPD and psychopathy (e.g., American Psychiatric Association, 1994; Hare, 2003; Lilienfeld & Widows, 2005) identify impulsivity as a prominent feature of the disorder. In terms of primary and secondary variants, Karpman (1948a) viewed secondary psychopaths as more impulsive relative to the more calculating primary psychopaths. In the Poythress et al. (2010) study noted earlier, the secondary psychopathy group, relative to the primary psychopathy group, reported significantly higher levels of impulsivity. Similarly, other investigations, such as Smith and Newman (1990), have demonstrated stronger relationships with substance abuse problems for individuals with features of secondary psychopathy rather than primary psychopathy.

The present study

In the present study we sought to expand upon the original cluster-level comparisons reported by Poythress et al. (2010) by focusing more specifically upon substance use and misuse among that subset of participants receiving court-mandated substance abuse treatment. Based on the preceding literature review we expected that the following findings would emerge. First, we hypothesized that secondary psychopaths would demonstrate higher levels of self-reported substance-related impairment than primary psychopaths. Second, in our sample at large, we predicted that the severity of substance abuse problems would be at least moderately associated with indicators of negative emotionality and impulsivity. Based on theory and prior subtyping research, however, we anticipated that these associations would be most pronounced among secondary psychopaths but non-existent (or at least weakest) among primary psychopaths. Analyses comparing the other subtypes, given the dearth of theoretical or empirical guidance to support specific predictions, were primarily exploratory in nature.

Method

As noted earlier, participants in Poythress et al.'s (2010) cluster analysis included male offenders who met DSM-IV-TR diagnostic criteria for ASPD and who were court-ordered to residential drug treatment programs or serving prison sentences ($N=691$). This follow-up report focused on those participants in the clusters who had been court-ordered into treatment (see *ns* reported in Table 1). Substance abusers comprised the following proportions in the original cluster groups: primary (41.0%), secondary (52.9%), fearful (35.3%), and non-psycho-pathic ASPD (60.0%). Additionally, we included the non-ASPD substance abusing group (not included in the original cluster analyses) in our analyses as another point of comparison because they are of interest in addition to those specifically who meet diagnostic criteria for ASPD.

The mean age (30.34; $SD=6.57$) and racial distribution (25% African American) in the analyzed sample were similar to the larger Poythress et al. sample. Eligibility criteria included the ability to speak English and an estimated IQ of ≥ 70 based on a screening assessment (QuickTest; Ammons & Ammons, 1962) administered at the time of

Table 1

Descriptive Statistics for Subgroups on Substance Abuse, Negative Emotionality, and Impulsivity Variables

Variable	Primary ($n=58$)	Secondary ($n=81$)	Fearful ($n=67$)	Non-psycho-pathic ASPD ($n=117$)	Non-ASPD ($n=248$)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
PAI ALC	68.33 (17.62)	74.00 (21.24)	73.10 (18.58)	69.62 (18.45)	70.46 (19.51)
PAI DRG	92.24 (12.90)	97.36 (10.56)	92.12 (12.78)	92.87 (13.24)	88.17 (15.00)
PAI DEP	56.91 (12.08)	64.24 (12.98)	61.55 (11.69)	57.76 (12.39)	56.02 (11.07)
PAI INT	56.84 (9.73)	63.37 (10.14)	59.39 (8.94)	56.30 (9.31)	55.16 (8.80)
BIS-11	76.34 (11.97)	76.64 (10.19)	78.45 (10.33)	76.53 (10.30)	71.47 (12.28)

Note. PAI = Personality Assessment Inventory. ALC = Alcohol Problems Scale. DRG = Drug Problems Scale. DEP = Depression Scale. INT = Internalizing Problems Indicator. BIS-11 = Barrett's Impulsivity Scale – 11. ASPD = Antisocial Personality Disorder.

enrollment. Additionally, any individuals currently taking psychotropic medications for active symptoms of psychosis were excluded from the study. All participants completed the PAI as part of a more extensive research protocol.

Measures

PAI

The PAI (Morey, 2007) is a 344-item, multi-scale, self-administered inventory of adult personality and psychopathology. Although not developed specifically for use with offender populations, its low required reading level (i.e., fourth grade) and relatively brief protocol length make this instrument appealing for use with this group (Edens & Ruiz, 2005). The PAI consists of 22 non-overlapping scales measuring various constructs of interest in clinical settings. In addition to the basic scales, various configural and composite indicators have been developed over the years (Morey, 2007). *T* scores ($M=50$, $SD=10$) provided for individual PAI scales are derived in reference to a large community normative sample collected during the instrument's initial development and validation. The specific scales and indicators of interest in this study are described below (see Table 1 for descriptive statistics for this sample).

Substance abuse

The PAI ALC and DRG scales were utilized to assess substance misuse. Both scales were developed to assess "behaviors and consequences related to use, abuse, and dependence on alcohol and other substances, respectively" (Morey, 2007, p. 231). Both ALC and DRG are moderately correlated with various personality indicators of disinhibition (Storch, Kovacs, Okun & Welsh, 2003; Strawser, Storch, Geffken, Killiany, & Baumeister, 2004). The ALC scale has been validated against diagnostic indicators of substance misuse, such as the alcohol-related diagnoses derived from the Structured Clinical Interview for DSM-IV Axis I Disorders, Clinician Version (SCID-IV; First, Spitzer, Gibbon, & Williams, 1997; Ruiz, Dickinson, & Pincus, 2002).

In comparison with community norms, Morey (1991) suggested that individuals enrolled in substance abuse treatment typically have markedly elevated DRG scores (i.e., 75T to 90T range). This assertion has been supported through such studies as Alterman et al. (1995), whose treatment-seeking substance abusing sample obtained elevated DRG scores ($M=83.96$), similar to the results for the inpatient substance abuse treatment sample ($M=82.46$) described by Hopwood, Baker, and Morey (2008). The DRG scale is moderately to highly correlated with the Drug Abuse Screening Test and the Addiction Severity Index (Kellogg et al., 2002; Parker, Daleiden, & Simpson, 1999).

Negative emotionality

Two indicators from the PAI were used to operationalize negative emotionality. Confirmatory factor analyses have indicated that depression and anxiety tend to be two of the highest loading constructs tapping a broader “internalizing” dimension of psychopathology (Blonigen et al., 2010; Ruiz & Edens, 2008) and Krueger, McGue, and Iacono (2001) contended that the variance shared by anxiety and depressive disorders is explained by the personality trait neuroticism/negative emotionality. As such, we employed the DEP scale as a relatively narrow-band indicator of negative emotionality. The DEP scale was designed to cover all of the major elements of depression (i.e., affective, cognitive, and physiological) and correlates highly with a variety of measures of negative affect, such as the Beck Depression Inventory (Beck & Steer, 1987), the Beck Hopelessness Scale (Beck & Steer, 1988), and the State-Trait Anxiety Inventory. It has also demonstrated utility in treatment planning and outcome measures (Harley, Baity, Blais, & Jacobo, 2007). The DEP scale served as a proxy for negative emotionality (NEM).

As a broader indicator of negative emotionality, we also employed a PAI “Internalizing” (INT) psychopathology scale first identified by Ruiz and Edens (2008) and examined in the original Poythress et al. (2010) cluster-analytic article. The INT scale encompasses the mean value of the PAI Depression, Anxiety-related disorders, Somatic complaints, Suicide, and Schizophrenia scales. Anxiety was not included in this composite score because PAI ANX was one of the clustering variables in Poythress et al. (2010).

Impulsivity

Barratt’s Impulsivity Scale, version 11 (BIS-11; Stanford & Barratt, 1995) is a 30 item self-report measure that assesses impulsivity as a multidimensional construct characterized by three main factors: motor (behavior), attentional (cognitive), and non-planning. Recent work by Ruiz, Skeem, Poythress, Douglas, and Lilienfeld (2010) demonstrated that none of the four factor models of the BIS-11 proposed in prior investigations yielded a satisfactory fit to the data via confirmatory factor analyses. Therefore, the current study is limited to using only the total BIS-11 score.

Procedure

Individuals were recruited at each site from lists of potential participants who met basic inclusion criteria (i.e., age, race, English fluency). Informed consent and data collection procedures were approved by university institutional review boards. All participants completed the PAI as part of the research protocol for the larger study. The PAI was administered as a paper-and-pencil measure. Given the potential for random/careless responding on self-report measures, all PAI profiles with Infrequency and/or Inconsistency scores above recommended cutoffs (i.e., ≥807; Edens & Ruiz, 2005) were excluded from analyses. Of the initial group of individuals who met basic inclusion criteria, participants who failed to complete the SCID-II ASPD interview, did not complete the PAI, demonstrated suspected random or careless responding, or contained missing data were excluded.

Results

Subgroup differences in substance abuse, negative emotionality and impulsivity

Descriptive statistics regarding cluster differences on relevant variables assessing negative emotionality (i.e., PAI DEP and INT scores), impulsivity, and alcohol and drug problems are provided in Table 1. In terms of planned comparisons, the secondary subgroup did, as predicted, produce more elevated mean scores than did the primary psychopathy cluster on DRG, $t(137) = 2.57, p < .01$ (Cohen’s

$d = .43$), and ALC, $t(137) = 1.66$ (Cohen’s $d = .29$), $p < .05$ (both two-tailed). Both effect sizes were small to medium in magnitude.

In terms of more exploratory group comparisons, the secondary psychopathy cluster demonstrated higher scores on substance abuse scales and internalizing symptomatology relative to the other cluster groups. An omnibus ANOVA indicated that the five groups did not, however, differ significantly from one another on reported alcohol problems, $F(4, 566) = 1.17, p = ns$, perhaps due largely to a high level of within-group variability on this variable (e.g., the *smallest* subgroup standard deviation on ALC was over 17 T-score points). Thus, although the secondary subgroup obtained higher mean scores on this scale relative to the other groups, this difference did not reach statistical significance.

The five subgroups did differ significantly from one another on the remaining indices (i.e., DRG, DEP, INT, and BIS-11). Therefore, we conducted Bonferroni-corrected post-hoc contrasts for each of the variables of interest. In terms of significant differences between groups on the DRG scale, $F(4, 566) = 7.79, p < .01$, the secondary subgroup scored significantly higher than the non-ASPD subgroup (M difference = 9.19; Cohen’s $d = .71$). Additionally, the non-psychopathic ASPD subgroup obtained higher mean DRG scores than the non-ASPD subgroup as well (M difference = 4.70; Cohen’s $d = .33$). These two effect sizes were medium to large and small to medium, respectively, in magnitude.

Post-hoc contrasts examining differences between clusters on DEP and INT paralleled one another. The secondary psychopathic subgroup demonstrated significantly higher mean scores than other subgroups with the exception of the fearful psychopathic subgroup. Additionally, this subgroup reported higher scores than the non-ASPD subgroup.

Specific to impulsivity, all cluster subgroups demonstrated significantly higher scores than the non-ASPD subgroup. No marked differences emerged between the primary cluster and the remaining subgroups other than that the non-ASPD cluster reported significantly lower levels of impulsivity than the primary subgroup at a small to medium effect size (mean difference = 4.88; Cohen’s $d = .41$).

Associations among substance abuse, negative emotionality and impulsivity across subgroups

Before addressing the relationships among variables at the subgroup level, we collapsed the entire sample to ascertain the extent to which indicators of negative emotionality and impulsivity were associated with self-reported drug and alcohol problems (see Table 2). Examination of the pattern of bivariate correlations across all variables in the total sample indicated that drug and alcohol problems were modestly to moderately associated with both negative emotionality (DEP and INT scores) and impulsivity (BIS-11 scores).

Next, we divided the sample into the relevant subgroups and re-conducted the correlational analyses, which are also reported in Table 2. As can be seen, the magnitude of the correlations for the

Table 2
Correlations among Study Variables for the Total Sample and Subsamples

	Correlations with the PAI DRG Scale			Correlations with the PAI ALC Scale		
	DEP	INT	BIS-11	DEP	INT	BIS-11
Total Sample (N = 571)	.31**	.33**	.39**	.13**	.15**	.18**
Primary (n = 58)	.16	.24	.20	.05	.16	.00
Secondary (n = 81)	.10	.16	.29**	.10	.16	.10
Fearful (n = 67)	.05	.15	.36**	.05	.01	.02
Non-psychopathic ASPD (n = 117)	.38**	.33**	.41**	.14	.16	.22*
Non-ASPD (n = 248)	.37**	.37**	.41**	.15*	.15*	.25**

Note. PAI = Personality Assessment Inventory. ALC = Alcohol Problems Scale. DRG = Drug Problems Scale. DEP = Depression Scale. INT = Internalizing Problems Indicator. BIS-11 = Barrett’s Impulsivity Scale – 11. ASPD = Antisocial Personality Disorder. ** $p < .01$, * $p < .05$.

primary psychopathy cluster was quite modest and not statistically significant. The magnitude of the correlations for the secondary group, however, *also* was quite modest and only one was statistically significant (DRG/BIS-11), offering little support for the hypotheses that either negative emotionality or impulsivity would be more strongly predictive of substance abuse among secondary than among primary psychopaths. To test the hypothesis that the drug abuse/impulsivity relationship would be more pronounced among secondary than primary psychopaths, we conducted a test of independent correlations (see Uitenbroek, 1997) to ascertain whether the .09 difference in magnitude (.20 vs .29) was statistically significant: it was not, $z (df=138) = .54, p = ns$.

In fact, all three of the psychopathic subtypes produced similar (and modest) patterns of association between substance use (particularly alcohol) and negative emotionality. The correlations were also similar for all three groups in terms of impulsivity and drug abuse, albeit somewhat higher in magnitude (r s ranging from .20 to .36).

In terms of exploratory analyses, the more pronounced effects in terms of correlates of substance abuse (particularly drug use) were observed for the two non-psychopathic subsamples, in which both negative emotionality and impulsivity were moderately associated with such abuse.

In fact, collapsing the three psychopathy clusters ($n = 206$) and the two non-psychopathic subgroups ($n = 365$) yielded relatively distinct patterns of association across psychopathic and non-psychopathic offenders: BIS-11 scores were modestly related to ALC scores ($r = .23, p < .01$) and moderately related to DRG scores ($r = .43, p < .01$) in the non-psychopathic sample, but these associations were appreciably weaker among the psychopathic sample (ALC $r = .05, p = ns$, DRG $r = .26, p < .01$). A test of the difference between the independent correlations and revealed that they were significantly larger among the non-psychopathic offenders in both instances: (.23 vs .05) $z (df=570) = 2.10, p < .05$; (.43 vs .26) $z (df=570) = 2.21, p < .05$. Similarly, the DRG and DEP correlation was appreciably stronger ($r = .37, p < .01$) among non-psychopathic offenders than among psychopathic offenders ($r = .13, p = ns$), $z (df=570) = 2.94, p < .01$.¹ The relationship for ALC and DEP was not significantly different between the two samples, however (r s of .15 and .10, respectively).

Discussion

In this study, we sought to examine the relationship between substance abuse and both negative emotionality and impulsivity among subtypes of antisocial and psychopathic offenders receiving court-mandated substance abuse treatment. Several interesting findings emerged. First, there was evidence that secondary psychopathy is more strongly related to substance-related problems than primary psychopathy, in that secondary psychopathic individuals obtained more elevated scores on both the DRG and ALC scales of the PAI. This finding is consistent with theory (e.g., Karpman, 1941, 1948a, 1948b; Lykken, 1995) and supports the notion that secondary psychopaths are especially prone to abusive use of both licit and illicit substances. Nevertheless, it should be noted that the primary subtype also produced scores (particularly DRG T scores) suggesting significant impairment relative to community norms.

At the global level, our findings replicate research demonstrating that negative emotionality and impulsivity are related to the severity of substance abuse, although the associations for alcohol abuse in the present study were quite modest overall. As expected, the association between these constructs and drug abuse severity was particularly weak among the primary psychopathy subgroup, though this effect was not specific to the primary subtype. Modest effects also were noted for the secondary and fearful subgroups relative to the two non-psychopathic samples (non-psychopathic ASPD and non-ASPD subgroups). In fact, the bulk of the associations in Table 2 suggest that the

hypothesized relationships between substance abuse and negative emotionality are more robust among non-psychopathic individuals (regardless of their ASPD status) than among the three psychopathic subtypes identified by Poythress et al. (2010). Of particular note, the magnitude of effects reported for the non-psychopathic ASPD cluster and the non-ASPD subsample were virtually identical, suggesting this diagnostic status had little or no impact on the relationships among the variables of interest in this study. These findings warrant replication and further investigation, as they raise the possibility that the etiological correlates of substance abuse differ in psychopathic versus nonpsychopathic individuals. The reasons for these differences, however, are unclear.

Despite the potential theoretical importance of our findings, we acknowledge several limitations. First, the study design was correlational in nature, precluding any causal inferences among the variables. Additionally, focusing strictly on substance abusers in treatment raises legitimate concerns about the generalizability of observed effects to the broader population of substance abusers. Along these lines, the limitation of our analyses to men suggests that generalization of our findings to women is premature. Furthermore, our reliance on self-report measures in the measurement of substance abuse may have resulted in the minimization of symptoms if examinees were motivated to deny substance use—though the relatively extreme scores on DRG across subgroups suggest that this is not likely a major concern. Nevertheless, replication of our findings in treatment settings in which non-self report indicators of substance abuse severity are used would be informative.

Note

1. Highly similar results were obtained for INT.

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