



Psychopathic personality traits and delinquent careers: An empirical examination

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ABSTRACT

Purpose: Few studies have simultaneously investigated psychopathic traits in relation to assorted dimensions of a delinquent career. The current study examined the role that psychopathy might play in facilitating research on the small subset of youth at risk for persistent antisocial behavior.

Method: This study examined psychopathic personality scores using the Antisocial Process Screening Device (APSD) and the Psychopathic Personality Inventory-Short Version (PPI-SV) in a statewide population of 723 juvenile offenders.

Results: Psychopathy scores revealed a linear score-response such that higher psychopathy scores were associated with increases in general delinquency (including violent and non-violent forms), hostile aggression, and three forms of early onset delinquency, including offending, police contact, and juvenile court referral. Moreover, negative binomial regression, hierarchical linear regression, and logistic regression models revealed that psychopathy factors possessed utility in predicting all dimensions of the delinquent career net the effects of demographic and available risk factors.

Conclusion: Psychopathy should be fully incorporated into criminological investigations of delinquent and criminal careers.

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1. Introduction

Criminology has experienced a reemergence of interest in personality-based and psychologically-oriented approaches to the study of antisocial behavior (Caspi, Moffitt, Silva, Stouthamer-Loeber, & Krueger, 1994; Miller & Lynam, 2001; Moffitt, 1993; Raine, 2002). There is growing recognition that offenders are a heterogeneous group and that future research activity should strive to characterize subpopulations of offenders that differ by criminality (Le Blanc, 1998). At the same time, a robust criminological literature based on birth cohort studies (e.g., Wolfgang, Figlio, & Sellin, 1972; Wolfgang, Thornberry, & Figlio, 1987) and chronic offender research (e.g., DeLisi, 2001, 2005; Loeber & Farrington, 1998) has revealed that a small subset of offenders commits a majority of general and serious crimes. Whereas most offenders limit their antisocial behavior to the adolescent years (Moffitt, 1993), this subpopulation of offenders began their criminal careers early and persisted in antisocial conduct across the life course. In addition to delinquency, serious and violent offenders often have school problems (e.g., truancy, suspension, and dropout), substance use problems, mental health problems, and are disproportionately victims of violence.

A fruitful construct in the study of delinquent careers is psychopathy. Psychopathy refers to a specific, yet controversial personality construct with a long history in the psychological and biomedical sciences (Vaughn & Howard, 2005). As a form of

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antisocial personality, psychopathy has experienced research resurgence in recent years particularly in its application to children and adolescents. Although many definitions of psychopathy have been proffered (Cleckley, 1976; Hare, 1996a,b; Lynam, 2002; McCord & McCord, 1964), most assert that psychopathic personality traits descriptions entail individuals (mostly males) who are aggressive, self-centered, callous, guiltless, impulsive, sensation-seeking, interpersonally exploitive, deceptive, low in fear and anxiety, unable to learn socially approved ways of satisfying immediate needs, and unable to develop warm affective bonds with other persons.

The rationale for studying psychopathy in childhood and adolescence is that early identification might forestall lengthy and costly criminal careers. Using diverse samples of offenders from different countries and diverse analytical techniques, prior research has shown that psychopathic offenders have significantly worse delinquent and criminal careers than non-psychopathic offenders in terms of violent and non-violent offending and noncompliance with the juvenile and criminal justice systems (DeLisi & Vaughn, 2008; Harpur & Hare, 1994; Harris, Rice, & Cormier, 1991; Hemphill, Templeman, Wong, & Hare, 1998; Porter, Birth, & Boer, 2001; Simourd & Hoge, 2000; Vaughn & DeLisi, 2008; Vaughn, DeLisi, Beaver, Wright, & Howard, 2007). Indeed, psychopathy may be the single best predictor of future violence and recidivism (Harris et al., 1991; Salekin, Rogers, & Sewell, 1996; Serin & Amos, 1995). Moreover, identification of psychopathy in children and adolescents could facilitate early prevention and intervention efforts. It has been argued that, aside from schizophrenia, no other mental health condition is more in need of public health and policy intervention (Hart & Hare, 1996).

In one of the earliest studies of adolescent psychopathy, Forth, Hart, and Hare (1990) found significant relationships between Psychopathy Checklist (PCL) scores and previous violent offending ($r=.27$) and institutional violence ($r=.46$). Brandt, Kennedy, Patrick, and Curtin (1997) grouped a sample of 130 incarcerated youths into low, medium, and high psychopathy scorers using the PCL-R. More psychopathic youths were quicker to receive a juvenile court referral and commit a violent act upon release than the other groups. Stafford and Cornell (2003) showed that youth in the psychopathic group scored higher on all forms of aggression studied (e.g., instrumental and reactive). Using the Millon Adolescent Clinical Inventory (MACI) psychopathy content scale, Loper, Hoffschmidt, and Ash (2001) identified a subgroup of high scoring youth who committed instrumental forms of violence at a higher level than other groups. Employing the Antisocial Process Screening Device, Caputo, Frick, and Brodsky (1999) found significant positive correlations between scores and pre and post institutional violence. In a review article of violence and adolescent psychopathy Edens, Buffington, Tomicic, and Riley, (2001), Edens, Skeem, Cruise, and Cauffman, (2001) found consistent correlations (between .20 and .40) between measures of violence and psychopathy in 11 studies of juveniles. In a study of risk for violence across a 10-year follow-up, Gretton, Hare and Catchpole (2004) found that high psychopathy scores did increase the risk for violence after controlling for the relevant covariates of conduct disorder, violence history, and age of onset for criminal offending. Overall, psychopathy can be reliably assessed in childhood, adolescence, and adulthood and evidence indicates that psychopathic traits are relatively durable (Frick, Kimonis, Dandreaux, & Farrell, 2003; Lynam, 2002; Moffitt, Caspi, Harrington, & Milne, 2002).

Although there is growing consensus among researchers, practitioners, and policy makers about the importance of serious juvenile offenders (Loeber & Farrington, 1998), it is unclear whether psychopathy will prove useful in differentiating young offenders for prevention, treatment, or management purposes. The present study assesses important relationships between psychopathic traits and prior violent and non-violent offending, hostile aggression, and three forms of delinquent onset among youths in a statewide population of residentially incarcerated juvenile offenders. Specifically, measures of psychopathy were compared to other available predictors of antisocial offending available to determine whether the construct possesses explanatory utility relative to existing variables.

2. Method

2.1. Participants and procedures

All youth receiving services in the Missouri State Division of Youth Services DYS were asked to participate in the research study. Eligible youth completed a survey instrument assessing demographic characteristics, substance-use patterns, psychiatric symptoms, annual offending, personality traits, and information about time in custody. Estimated time to complete the interview was 40–70 min. Most youth commitments to DYS care are new and only a small percentage represent youth with prior DYS commitments. There is a relatively even split of residents coming from urban and small town areas respectively. Generally, youth are committed for a variety of transgressions including major and minor felonies.

Previous pilot work with DYS institutions had shown a high level of willingness to participate. Indeed, 728 interviews were conducted. Of these, four were stopped when interviewers determined that youth were too functionally impaired to complete the interview, and one youth elected not to complete the interview. These 5 interviews are not included in the dataset. Further, two youths were transferred to other facilities while interviewers were in the facility and as such were not available for interviewing. Finally, 10 youths listed on facility rosters when interviewers arrived were on furlough and could not be interviewed. Of 740 youths potentially eligible to participate, 728 were available for interview of which all began the interview and 723 completed it. This translates into a 97.7% response rate.

Formal written consent was obtained from the Deputy Director for Treatment Services for the Division of Youth Services. DYS administrators, facility managers, and staff were fully aware of the research project. Adolescents were notified of the upcoming project and informed that participation was voluntary and what it would entail. Research project staff was available to answer any questions that youth or staff had regarding this process or the project in general. Youths were only allowed to participate if they

had the consent of DYS and had provided their own consent. Youths were informed that their decision whether to participate would in no way impact any legal situation or standing within or outside of DYS. Youths who signed informed consents then completed the interview battery. Formal written consent was obtained by DYS, all study protocols were approved by the Washington University Institutional Review Board (IRB) and the project received certificates of confidentiality from NIDA and the Federal Office of Human Research Protections. Study subjects were individually interviewed and given \$10 for their participation. Division of Youth Services staff supervised the movement into the on site interview room and the return movement to previous activity. All eligible DYS youth were interviewed by trained graduate students using measures that gathered information on demographic characteristics, inhalant use, substance use, personality traits, psychiatric symptomatology, and prior offending and victimization.

2.2. Measures

2.2.1. Psychopathic personality

The 56-item Psychopathic Personality Inventory (Lilienfeld & Andrews, 1996) Short-Version (PPI-SV) was used in conjunction with the 20-item Antisocial Process Screening Device (Frick & Hare, 2002) to gather information on psychopathic traits. The PPI-SV is based directly upon the 187-item PPI which has shown good reliability and usefulness as a self-report measure assessing psychopathic personality. The PPI and PPI-SV possess an ordinal Likert-type response format ranging from: 1=false, 2=mostly false, 3=mostly true, and 4=true. Unlike the APSD which is derived from the Psychopathy Checklist (PCL), the PPI-SV is considered a “pure” personality inventory of psychopathy because it contains no items directly assessing antisocial behaviors. Originally designed with eight subscales theoretically-related to psychopathy, recent psychometric analyses of the PPI suggest that it is composed of a two-factor structure consisting of a behavioral inhibition factor and an affective-interpersonal factor (Benning, Patrick, Hicks, Blonigen, & Krueger, 2003). No previous data exist on the PPI-SV. The caregiver and self-report versions of the APSD have been used in a number of studies and is thought to be a useful screening measure of psychopathic traits. The APSD is scored on an ordinal scale, ranging from 0 (not at all true) to 2 (definitely true). Recent support for a 3-factor model consisting of Impulsivity, Callous-Unemotional traits, and Narcissism factors has been found (Vitacco, Rogers, & Neumann, 2003).

2.2.2. Basic factor structure of psychopathy measures in present study

The 20-item APSD and 56-item PPI-SV were subjected to principal components factor analysis. Because of the theoretically related nature of traits forming a psychopathic constellation, oblique (correlated) factor methods were used. Recent analyses of the factor structure of the APSD have shown support for a three factor model (e.g., Frick et al., 2003; Spain, Douglas, Polythress, & Epstein, 2004; Vitacco et al., 2003), therefore analyses proceeded with a constrained two and three factor approach. Factor loadings were considered noteworthy if they were greater than .30 (Stevens, 1992). The three factor model found the greatest support as the three dimensions that emerged were conceptually clear, psychologically interpretable, supported by Eigenvalue and scree test guidelines (Mertler & Vannatta, 2002), parsimonious, and maximized the percentage of inter-item covariance (40%). The three factors are 1) Impulsivity, 2) Callous-Unemotional, and 3) Narcissism. One item, “You keep the same friends” was deleted because it did not load on any of the factors. Therefore, total scores on the 19-item APSD could range from 0 to 38.

Given that the PPI-SV measure has yet to be utilized, the initial strategy was to build upon recent factor analytic work that employed the full 187-item PPI in a community sample of 353 adults (Benning et al., 2003) which identified two higher-order factors in their study; a social dominance low fear factor and an externalizing social deviance factor. Results showed little support for a two-factor solution based on percentage of covariance, Eigenvalue and scree plot inspection, and conceptual interpretability of factor loadings. Consequently, multiple factor solutions were considered. These options, with the exception of a 33-item three factor model were riddled with multiple problems including a lack of parsimony, factor loadings not making conceptual sense, and lack of scree test support. The three factor model that emerged from this iterative process was supported by Eigenvalue (all >2.0) and scree test inspection, conceptual coherence, and the principle of parsimony. Factor loadings greater than .30 (most were >.40) were considered noteworthy as suggested by Stevens (1992). The modified PPI-SV consists of a Rebellious Narcissism or Self-centered Nonconformity Factor, characterized by aggressive ego-centered interpersonal relations, the tendency to externalize blame, and rebelliousness. The second factor, Carefree-Unemotionality, is characterized by a deficient affective experience and present-oriented personality features. The third factor, Fearlessness, can be described by low fear, risk-taking, and lack of concern for potential harmful consequences.

The three factors extracted from each measure correspond to the behavioral (i.e., impulsivity and fearlessness), interpersonal (i.e., narcissism), and affective (i.e., callous and carefree unemotionality) dimensions identified in recent research on the factor structure underlying psychopathy (Cooke & Michie, 2001; Skeem & Cauffman, 2003). The internal consistency reliability analyses using Cronbach's alpha coefficients were evaluated for each measure and their respective factor scores. The total score alpha reliability for the APSD was good ($\alpha=.81$) and adequate for the Narcissism Factor ($\alpha=.75$) and Impulsivity Factor ($\alpha=.67$), but questionable for the Callous-Unemotional Factor ($\alpha=.57$). The modified PPI-SV total score reliability was adequate ($\alpha=.76$) as well as its Rebellious Narcissism ($\alpha=.77$), Carefree-Unemotionality ($\alpha=.68$), and Fearlessness ($\alpha=.70$) Factors.

2.2.3. Violent and non-violent acts

The Self-Report of Delinquency (SRD) used was modeled after the measure used in the National Youth Survey (Elliott, Huizinga, & Menard, 1989) and organizes questions by property/non-violent offense and violent offense and asks respondents type and frequency of past year offending. This instrument is well established and has been in use for approximately 20 years. Reliability

analyses on the SRD in the present population indicates adequate reliability for the total SRD ($\alpha=.84$), and violent ($\alpha=.73$), and non-violent ($\alpha=.81$) delinquency subscales.

2.2.4. Hostile aggression

Items from the Brief Symptom Inventory (BSI) were used to assess hostile aggression. This instrument consists of 53 items with a Likert-type format and an overall global severity index relating to major mental health disorders (i.e., anxiety, depression, etc.) in order to characterize current psychiatric status. Studies support the BSI as a reliable and valid measure of current psychiatric symptoms (Derogatis & Savitz, 2000). Total BSI score reliability in the present study was excellent ($\alpha=.96$). The hostile aggression scale was found to possess adequate reliability ($\alpha=.80$, scale range 0–20).

2.2.5. Early onset of offending

Youth were asked at what age their offending was initiated, with examples of delinquent acts provided to increase precision ($M=10.5$, $SD=2.9$, range=3–16).

2.2.6. Demographics

These variables consisted of age, gender, ethnicity, level of education, and family receipt of public assistance (SES proxy).

2.2.7. Mental health diagnosis, head injury and trauma

These variables included self-report of lifetime mental health diagnosis (i.e., ADHD, Bipolar Disorder), period of unconsciousness of over 20 min due to a head injury, current prescribed psychiatric medication, and MAYSI-2 Traumatic Experiences (5 items) subscale. These subscales consist of a series of yes/no items. The total number of affirmative item responses was then summed to provide an overall scale score. Studies using the MAYSI-2 in incarcerated youth samples have found it to be reliable (Grisso & Barnum, 2000). Reliability analysis from the present study indicate adequate reliability for the Traumatic Experiences subscale ($\alpha=.77$ for females; $\alpha=.68$ for males).

2.3. Analytic plan and diagnostics

Given that the APSD and the PPI-SV are the primary predictive measures in the investigation and that the PPI-SV has yet to be field tested, factor analytic and reliability analyses were used to assess the basic psychometric properties of these instruments. We hypothesized that higher psychopathic trait scores would predict: 1) offending versatility as evidenced by combined violent and non-violent delinquent scores, 2) higher levels of aggressive hostility, and 3) an earlier age of onset for offending while controlling for a number of background variables. In order to test the first hypothesis relevant to psychopathy and major criterion variables directly, negative binomial regression was used. Negative binomial regression has been frequently used in place of OLS regression due to the over-dispersed nature of offending count data and subsequent improvement in estimates (Gardner, Mulvey, & Shaw, 1995).

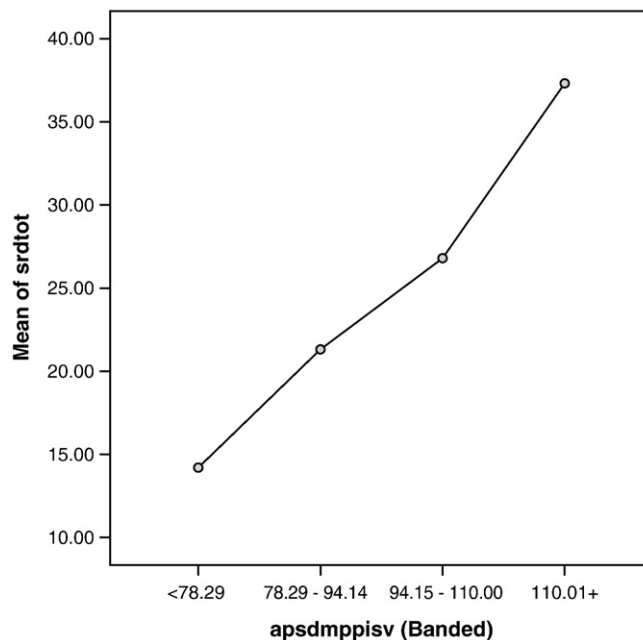


Fig. 1. Mean violent and non-violent delinquency scores across psychopathy groups.

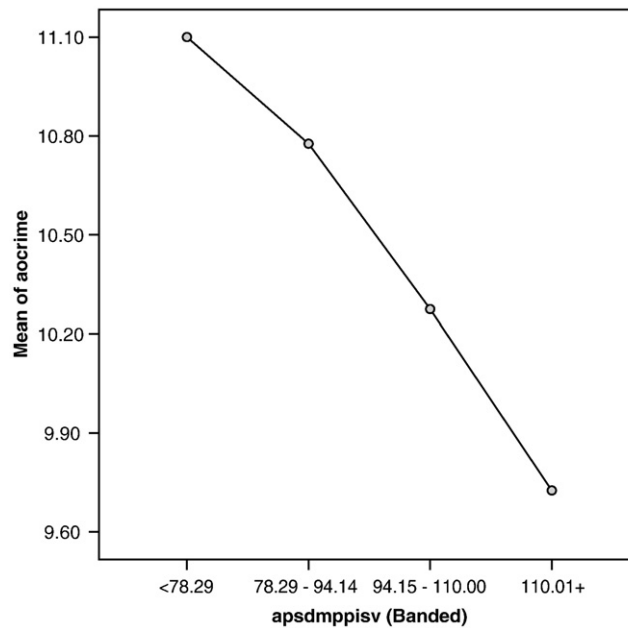


Fig. 2. Mean age of offending initiation across psychopathy groups.

Hierarchical linear regression was conducted to assess the utility of psychopathic personality traits and their relationship to aggressive hostility. In order to facilitate tests, independent categorical variables were dummy-coded as necessary. Demographic variables such as age, gender, ethnicity, SES were utilized as covariates. Moreover, analyses controlled for mental health diagnoses such as ADHD and prior head injury (frontal lobe damage and inhibition of executive governance) experiences. Additionally, regression models employing particular psychopathy factor scores (e.g., Callous-Unemotional traits) were evaluated. Also, moderator variable analysis of potential interaction variables such as substance use, blackout (head injury) and victimization were undertaken.

Binary logistic regression analyses served to test the likelihood of high psychopathy groups (1 SD above the mean combined score) versus low psychopathy groups (1 SD below the mean combined score) having an earlier versus later age of onset for offending. For illustrative purposes, Figs. 1 and 2 display the mean scores on violent and non-violent delinquency across these groups. Results across the four psychopathy groups indicate a linear score response such that increases in psychopathy are associated with increases in delinquency. High psychopathy group members had approximately 260% greater self-reported delinquency levels compared to the low psychopathy group ($M=37.3$, $SD=22.6$ versus $M=14.2$, $SD=12.8$). The effect size difference was large ($d=1.26$). This pattern continued with respect to age of onset for offending (see Fig. 2) with earlier onset for the high

Table 1

Characteristics of 723 youth incarcerated in State of Missouri DYS facilities

	N (%)	M (SD)
Gender		
Male	629 (87.0)	
Female	94 (13.0)	
Ethnicity		
African-American	238 (32.9)	
White	400 (55.3)	
Hispanic	28 (3.9)	
Multiethnic/other	56 (7.7)	
Age		15.5 (12)
Family receipt of public assistance		
Yes	288 (40.4)	
No	425 (59.6)	
APSD total score		18.6 (5.3)
Male		18.5 (5.3)
Female		19.0 (5.5)
Modified PPI-SV total score		75.6 (12.4)
Male		75.4 (12.5)
Female		77.0 (11.5)

Table 2

Negative binomial model regressing violent and non-violent delinquency on psychopathy factors and other predictors

Dependent variable: violent and non-violent delinquency	Coefficient	SE	z
Female	.955	.086	1.11
Age	.010	.024	0.42
African-American	.351	.074	4.72***
Latino/Latina	.521	.143	2.24*
Multiethnic/other	.139	.103	1.34
Public assistance	-.037	.056	-0.65
Blackout (head injury)	.265	.073	3.62***
ADHD	.004	.074	0.06
Mental illness	-.039	.076	-0.52
Hostile aggression	.016	.007	2.49*
APSD Impulsivity	.044	.014	3.24**
APSD Unemotional	.055	.024	2.25*
APSD Narcissism	.040	.010	3.88***
mPPI-SV Narcissism	.013	.005	2.66**
mPPI-SV Unemotional	.001	.007	1.19
mPPI-SV Fearlessness	.005	.005	0.91
LR test of $\alpha=0$	4554.43***		
Chi-square	210.99***		

* $p < .05$, ** $p < .01$, *** $p < .001$.

psychopathy group and later onset for the low psychopathy group. Multivariate tests reported later will test the simultaneous influence of a number of variables.

Prior to interpretation of multivariate statistics, regression diagnostics were examined to identify potential multicollinearity problems across models. Examination of Variance Inflation Factors (VIF) shows that no values exceeded 4, which is a conservative cut-off point indicating multicollinearity (Fox, 1991). Further inspection of tolerance values showed that all were well above

Table 3

Multiple regression model results predicting hostile aggression

Dependent variable: hostile aggression	R ²	F	b	SE	Beta
Model 1	.008	1.002			
Female			.042	.129	.012
Age			.001	.035	.001
African-American			.053	.096	.022
Latino/Latina			.423	.223	.072
Multiethnic/other			.199	.163	.047
Public assistance			.103	.088	.044
Model 2	.110	9.572***			
Female			.121	.124	.036
Age			-.052	.035	-.055
African-American			.346	.099	.143
Latino/Latina			.335	.213	.057
Multiethnic/other			.132	.155	.031
Public assistance			.142	.084	.061
Blackout (head injury)			.341	.109	.115
ADHD			.332	.090	.141
Lifetime polysubstance use			.029	.004	.266
Model 3	.301	19.942***			
Female			-.008	.113	-.002
Age			-.016	.032	-.017
African-American			.337	.097	.139
Latino/Latina			.296	.190	.050
Multiethnic/other			.033	.139	.008
Public assistance			.052	.075	.022
Blackout (head injury)			.226	.099	.076
ADHD			.169	.081	.071
Lifetime polysubstance use			.014	.004	.129
APSD Impulsivity			.075	.018	.180
APSD Unemotional			-.009	.032	-.012
APSD Narcissism			.045	.013	.139
mPPI-SV Narcissism			.040	.006	.259
mPPI-SV Unemotional			-.003	.009	-.016
mPPI-SV Fearlessness			-.002	.007	-.013

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 4

Binary logistic regression results predicting likelihood of early versus late age of offending initiation

Dependent variable: age of offending onset	OR	95% CI	p-value	SE
Model 1 ($\chi^2=50.03, p<.001$)				
Female	.426*	(.265–.685)	<.001	.242
African-American	.960	(.666–1.383)	.826	.186
Latino/Latina	1.43	(.629–3.230)	.395	.417
Multiethnic/other	2.02*	(1.060–3.844)	.033	.329
Public assistance	1.06	(.770–1.448)	.734	.161
ADHD	1.55*	(1.102–2.178)	.012	.174
Blackout (head injury)	1.03	(.681–1.553)	.894	.210
High psychopathy	2.93*	(1.625–5.288)	<.001	.301
Mid-high psychopathy	2.17*	(1.313–3.600)	.003	.257
Mid-low psychopathy	1.78*	(1.074–2.947)	.025	.257

*Statistically significant.

standard problem levels. Departures from normality in the dependent variables were transformed using logarithmic and square root procedures to improve linearity.

3. Results

3.1. Participant characteristics

Characteristics of study participants are presented in Table 1. Not unexpectedly, most youth were male (87%). In terms of ethnicity, the population was predominately White (55.3%) and African-American (32.9%), followed by Hispanic (3.9%), Multiethnic/other (7.7%). The mean age was 15.5 (SD=1.2, range=11–20). Mean grade completed was 9.3 (SD=1.3). Forty percent of youths reported coming from a home that received public assistance (i.e., food stamps, AFDC). Mean scores for the APSD and the mPPI-SV was 18.6 (5.3) and 75.6 (12.4) respectively. There were no significant differences between girls and boys. The mean time spent in the custody was 7.5 months and the majority of youth (84%) reported being in detention prior to adjudication to their current DYS residence.

3.2. General (including violent and non-violent) delinquency

Results of the negative binomial regression presented in Table 2 indicate a significant overall model ($\chi^2=210.99, df=16, p<.0001$). In addition to significant influence of ethnicity (African-Americans and Latino/Latina youth had higher levels of delinquent behavior), having a head injury ($z=3.62, p<.001$) and hostile aggression ($z=2.49, p=.01$) were also significant variables. With respect to psychopathy factors, both the mPPI-SV ($z=2.66, p=.008$) and APSD ($z=3.88, p<.001$) narcissism were significant influences as well as the APSD impulsivity ($z=3.24, p=.001$) and unemotional ($z=2.25, p=.02$) factors. We tested two-way interaction terms between psychopathy factors and blackout (head injury). Two-way interaction effects were also tested between the APSD and mPPI-SV unemotional factors and the APSD Impulsivity and Narcissism factors. The results were not statistically significant. Therefore, the notion that head injury was moderating the effect of psychopathy by increasing violent and non-violent delinquency is not supported. Further, unemotional factors are not moderating the effects of impulsivity and narcissism.

3.3. Hostile aggression

Results presented in Table 3 indicate that the first model, comprised of demographic variables, was non-significant. The second model, which included theoretically relevant risk factors for predicting hostile aggression, showed a significant R^2 change ($F=9.57$,

Table 5

Binary logistic regression results predicting likelihood of early versus late police contact

Dependent variable: age of first police contact	OR	95% CI	p-value	SE
Model 1 ($\chi^2=36.001, p<.001$)				
Female	.460*	(.286–.742)	.001	.244
African-American	.957	(.665–1.377)	.814	.186
Latino/Latina	.644	(.289–1.436)	.282	.409
Multiethnic/other	1.329	(.742–2.381)	.338	.917
Public assistance	.947	(.694–1.291)	.730	.158
ADHD	1.700*	(1.219–2.369)	.002	.169
Blackout (head injury)	1.020	(.684–1.521)	.922	.204
High psychopathy	1.835*	(1.043–3.229)	.035	.288
Mid-high psychopathy	1.020	(.637–1.632)	.934	.240
Mid-low psychopathy	1.140	(.715–1.818)	.582	.238

*Statistically significant.

Table 6

Binary logistic regression results predicting likelihood of early versus late juvenile court referral

Dependent variable: age of first juvenile court referral	OR	95% CI	p-value	SE
Model 1 ($\chi^2=47.274$, $p<.001$)				
Female	.218*	(.092–.517)	.001	.439
African-American	1.063	(.678–1.668)	.790	.230
Latino/Latina	.750	(.269–2.089)	.582	.523
Multiethnic/other	1.383	(.729–2.623)	.321	.327
Public assistance	.755	(.515–1.106)	.149	.195
ADHD	1.926*	(1.307–2.839)	.001	.227
Blackout (head injury)	1.342	(.860–2.093)	.195	.227
High psychopathy	2.142*	(1.063–4.315)	.033	.367
Mid-high psychopathy	1.229	(.722–2.093)	.447	.272
Mid-low psychopathy	1.364	(.804–2.314)	.250	.270

*Statistically significant.

$df=9$, $p<.001$) accounting for 10.1% of variance. The final model including the psychopathy factors showed a significant incremental R^2 change ($F=19.94$, $df=15$, $p<.001$) of 19.2%. At this point, the final model explained 30.1% of the variance in hostile aggression. With respect to the psychopathy factors, the APSD Impulsivity factor ($b=.08$, $t=4.13$, $p<.001$), APSD Narcissism factor ($b=.05$, $t=3.43$, $p=.001$), and mPPI-SV Rebellious Narcissism factor ($b=.04$, $t=5.10$, $p<.001$) were positive predictors above and beyond the other significant covariates in the model: African-American (significant higher mean symptoms of hostility scores compared to Whites), blackout (head injury), ADHD and lifetime substance use. Both unemotional factors and mPPI-SV Fearlessness were non-significant. Overall, the three psychopathy factors, blackout (head injury), ADHD and lifetime substance use were the strongest positive predictors of hostile aggression. Again, we tested two-way interaction terms between psychopathy factors and blackout (head injury) and APSD and mPPI-SV unemotional factors and the APSD Impulsivity and Narcissism factors. The results were not statistically significant.

3.4. Onset

Binary logistic regression results displayed in Table 4 show a significant model ($\chi^2=50.03$, $df=10$, $p<.001$) with youth in the high psychopathy group (1 SD above the mean) were approximately three times more likely (OR=2.93, $p<.001$) to be early starters compared to the low psychopathy group for the initiation of offending. Females were approximately one-half less likely (OR=.43, $p<.001$) to be early starters compared to males. Youth diagnosed with ADHD were 55% more likely (OR=1.55, $p<.05$) to be early starters compared to youth reporting an ADHD diagnosis. This pattern continued with respect to age of first contact with the police (Table 5) and age of first juvenile court referral (Table 6) whereby youth high in psychopathy were significantly more likely to have an earlier contact with law enforcement (OR=1.84, $p<.05$) and be referred to juvenile court (OR=2.14, $p<.05$).

4. Discussion

The models furnished strong empirical support for the hypotheses that psychopathic personality traits were predictive of various dimensions of the delinquent career, such as general delinquency, hostile aggression, and three kinds of early criminal onset. The psychopathy factors possessed validity in predicting these criterion variables while controlling for demographic and available risk variables. Youths who were most psychopathic, evidenced by scoring one standard deviation above the mean on combined psychopathy measures, were approximately 300% more likely to begin offending earlier compared to youths scoring one standard deviation below the mean. Those in the mid-high and low-mid psychopathy score group were also significantly more likely to be early initiators compared to the low group. That psychopathic traits are related to assorted dimensions of serious delinquency is consonant with prior research (Campbell, Porter, & Santor, 2004; Forth & Burke, 1998; Forth et al., 1990; Frick et al., 2003; Loper et al., 2001; Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003; Vaughn & Howard, 2005).

With respect to each predictive measure, neither exclusively captures the psychopathy construct. Based on the performance of the measures in this study, psychopathy among incarcerated juvenile offenders would be defined as a syndrome with strong behavioral features of impulsivity and fearlessness and a strong interpersonal domain comprised of aggressive social relations, manipulation, rebelliousness, self-centeredness, and a tendency to externalize blame. There are also unemotional features that are less salient as the behavioral and interpersonal dimensions, but do reflect a defective affective experience. It should be noted that the mPPI-SV carefree unemotional factor was not predictive of any of the dependent variable in multiple regression tests.

The distribution of psychopathy scores with respect to demographic variables showed no significant differences by gender. In general, previous studies of adolescents have found that females tended to have lower scores compared to males (e.g., Gretton et al., 2004). However, the results were statistically insignificant, perhaps owing to the comparatively small number of participants in these studies. The generalizability of these findings relevant to gender differences in psychopathy should bear in mind that the present study involved incarcerated juvenile offenders that are in a “deep-end” system adjudicated to state care beyond local level detention. Thus, the females in the study population are likely more deviant compared to females in community settings. Future studies need to be able to examine the nature, prevalence, and developmental processes of juvenile psychopathic traits and co-occurring mental health disorders among girls and women (Lynam, 1996a,b, 1998).

There was a significant ethnic difference between African-Americans and other groups with the former scoring lower on post hoc testing on some particular factors compared to Whites, Hispanics, and the Multiethnic/other groupings. The difference between the largest ethnic groups, Whites and African-Americans, was just one point on the APSD total score (range 0–38), which is insignificant. However, the difference was nine points on the total score mPPI-SV (range 33–132). Upon closer inspection much of this difference was on the fearlessness factor. Examination of items on this factor suggest that some may not be as culturally relevant for African-Americans as Whites with such questions related to traveling with bikers, parachute jumping and hitch-hiking. These items will need to be amended as to not be considered culturally biased in future uses of this measure. With respect to ethnic differences in psychopathic traits, most studies have found negligible differences. Indeed, a recent meta-analysis of psychopathic traits in adults produced negligible average differences between African-Americans and Whites (Skeem, Edens, Camp, & Colwell, 2004).

Although this study bolsters the notion that psychopathic traits are useful for understanding antisocial behavior, this does not mean that exclusive attentions to these traits are the only ingredient necessary for advancing the understanding of problem behavior among adolescents. Indeed, the following limitations should be considered to not only understand the findings in their proper context but also bear in mind for future research. The findings should be interpreted cautiously given the lack of environmental variables such as family measures and neighborhood circumstances that may have important effects on the dependent variables examined. Another obvious limitation of this cross-sectional study is the lack of temporal ordering necessary to help reveal causal relationships (see Lilienfeld, 1994). For instance, it could be argued that psychopathy trait score durability and changes in psychiatric symptoms could be induced based on the incarceration experience. In order to examine this notion, equal percentile groupings of youth based on time (months) spent in custody (i.e., <2 month versus 3–4 months, 5–6 months etc.) were compared across psychopathy factor scores, global symptom severity, anxiety, depression, hostile aggression and paranoid ideation scales. Results using multiple cut-point variations including one month intervals showed no statistically significant mean score differences between these various groupings. Although inconclusive, this does suggest that the incarceration experience is not confounding study results.

In terms of policy and its application, the juvenile justice system should recognize that juvenile offenders are a heterogeneous population. Applying uniform decision models and treatments across the range of adolescent offenders may prove less effective than tailoring treatment and management interventions to specific subpopulations of antisocial youth. Also, because youth possessing high psychopathic traits tend to be fearless, impulsive, self-centered and involved in multiple problem behaviors, punitive and deterrence-based models are unlikely to succeed. There may be innovative strategies that can be tailored specifically to the needs of youth possessing high levels of psychopathic traits (e.g., Spain et al., 2004). These strategies would involve caregiver efficacy training, a high level of adult supervision, the promotion of positive risk taking opportunities, and treatment of comorbid conditions. Although none of these directly treat psychopathic traits *per se*, they could modify the deleterious expression of these traits. Efficacy training for parents and caregivers has shown the ability to an effective treatment for youth with a wide variety of conduct problems (Hartman, Stage, & Webster-Stratton, 2003). Adult supervision and support are necessary in order to maintain informal control and reduce the idle time and subsequent opportunities for deviance (Wright & Cullen, 2001). This is critical because as the current models can attest, the construct of psychopathy has impressive empirical utility in explaining various dimensions of antisocial behavior and delinquent careers.

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