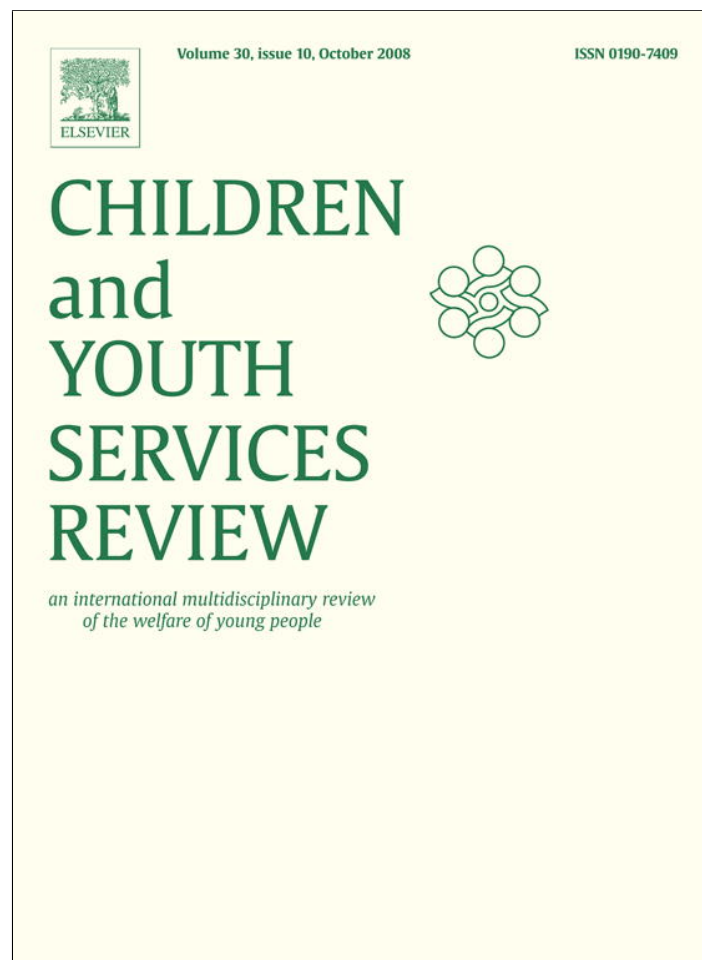


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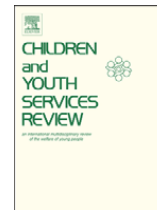
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Psychopathic personality features and risks for criminal justice system involvement among emancipating foster youth[☆]

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ABSTRACT

Although there has been a surge of interest in the study of psychopathy among juveniles, few investigations have been initiated on non-correctional samples thus reducing the potential generalizability of findings. The current objective was to examine the construct of psychopathy in a community sample of 404 foster care youths transitioning out of care. To our knowledge, this is the first study to explore psychopathic personality traits among a foster care sample. In total, the models indicated that psychopathic personality traits measured by the PPI-SF Narcissism, PPI-SF Extraversion, PPI-SF Unemotionality, and PPI-SF Fearless-Nonconformity were significant yet inconsistent risk factors for diverse forms of criminal behavior and subsequent involvement with the criminal justice system.

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1. Introduction

Heightened interest in risk assessment by researchers and practitioners has partly fueled interest in the study of psychopathy, a specific personality construct with a long history in the psychological and biomedical sciences (Vaughn & Howard, 2005a,b). Psychopathy is considered a syndrome of traits comprised of aggression, self-centeredness, callousness, impulsivity, conning, sensation-seeking, interpersonal exploitation, deception, low fear and guilt, and an inability to learn socially approved ways of satisfying immediate needs (Cleckley, 1976; Hare, 1996; Lynam, 2002; McCord & McCord, 1964). The factor structure underlying psychopathy that has been extracted from various measures generally corresponds to the behavioral (i.e., impulsivity and fearlessness), interpersonal (i.e., narcissism and manipulation), and affective (i.e., callous and carefree unemotionality) domains (Cooke & Michie, 2001; Farrington, 2005; Lee, Vincent, Hart, & Corrado, 2003; Skeem & Cauffman, 2003).

As a specific form of antisocial personality, psychopathy as a subject of research has experienced a resurgence in recent years, particularly in its application to children and adolescents (e.g., Falkenbach, Poythress, & Heide, 2003; Farrington, 2005; Frick, Kimonis, Dandreaux, & Farell, 2003; Gretton, Hare, & Catchpole, 2004; Salekin & Frick, 2005). Among adolescents, studies have found that psychopathic traits are predictive of future recidivism (Corrado, Vincent, Hart, & Cohen, 2004), institutional violence (Murrie, Cornell, Kaplan, McConville, & Levy-Elkon, 2004), career criminality (Vaughn & DeLisi, 2008), and substance abuse (Mailloux, Forth, & Kroner, 1997). In a review article of violence and adolescent psychopathy, Edens, Skeem, Cruise, & Cauffman (2001); Edens, Buffington, Tomicic, & Riley (2001) found consistent correlations between measures of violence and psychopathy in 11 studies involving juveniles. In an important study of the risk for violence across a 10-year follow-up period, Gretton and associates (2004) found that high psychopathy scores increased risk for violence after controlling for the relevant covariates of

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conduct disorder, violence history, and criminal onset. Farrington (2006) used data from the Cambridge Study in Delinquent Development, a 40-year prospective longitudinal survey of the criminal careers and social histories of 411 London males and found that high psychopathy scores were retrospectively associated with risk outcomes commonly inhibiting successful adulthood adaptation including more convictions and greater involvement in the criminal justice system (also see DeLisi & Vaughn, 2008).

To date, there is a lack of consensus on diagnostic cutoff scores for psychopathy measures among juveniles and whether psychopathy should be conceptualized as a discrete disorder or as continuously distributed trait (Farrington, 2005; Lilienfeld, 1994). However, recent taxometric research by Murrie et al. (2007) provides strong evidence that psychopathy in juveniles is indeed a continuous trait. For instance, the relationship between the DSM-IV Conduct Disorder diagnosis and psychopathy is asymmetrical. Conduct disorder diagnoses are far more prevalent than psychopathy diagnoses using high score cut-points at least in juvenile justice settings (Forth, 1995). In addition, few studies have compared psychopathy scores with Antisocial Personality Disorder, and in particular Conduct Disorder, in predicting outcomes such as illegally making money, drug selling, co-morbid substance use, and mental health disorders. Given the heterogeneity and emphasis of behavioral features consistent with delinquency that comprises DSM-IV Conduct Disorder, psychopathy traits may provide a more personality focused explanatory tool from which to better understand the development of violence and associated problem behaviors. Psychopathy has been generally viewed as impervious to treatment. Although there is pessimism regarding intervening with psychopathic individuals, a systematic review of 24 studies has shown that many beliefs about treatment resistance are unfounded and that design flaws do not allow the conclusion that treatment cannot work or will make psychopaths worse (D'Silva, Duggan, & McCarthy, 2004). In fact, there have been some assertions that antisocial personality, a behavioral disorder that overlaps with psychopathy, may be preventable (Farrington & Coid, 2003; Harrington & Bailey, 2003).

2. The current study

Although great strides have taken place with respect to psychopathy research in juveniles, investigations have largely relied on correctional samples thus reducing the generalizability of findings (cf., Frick & Marsee, 2006). The current objective was to examine the construct of psychopathy in a community sample of 404 foster care youth transitioning out of care (i.e., emancipation) particularly given the relatively high rates of abuse and trauma among this group (Weiler & Widom, 1996). Studying the psychopathy construct among foster care youth not only adds to the convergence of findings on the downward extension of psychopathic traits in another sample of youth with problem behavior, but also contributes to the risk literature for these youth aging out of care.

Foster care youths who score high on psychopathy may be at considerable risk for poor successful transitions out of care, therefore knowledge about these traits may lead to enhanced prevention and intervention efforts while in care. Although there has been federal legislation that has provided resources to states to expand services to foster youth leaving the system, youth aging out of the child welfare system face substantial challenges in making these transitions (Courtney & Heuring, 2005). Approximately 20,000 emancipated foster youths each year still face many similar problems including homelessness, unemployment, poverty, early pregnancy, higher rates of substance abuse, and juvenile justice system involvement (Massinga & Pecora, 2004; McMillen et al., 2005; Reilly, 2003). For instance, Courtney and Piliavin (1998) found that after leaving care, 37% of the foster care youths surveyed had been victimized or sexually assaulted and generally lacked the proper life skills and coping resources for independent living. Given the array of risks for negative outcomes faced by youths leaving child welfare, the study of psychopathic personality traits may shed light on problems faced by this population. To our knowledge, this is the first study to investigate psychopathic personality traits among youths from the foster care system.

3. Method

3.1. Participants and sampling frame

This study, funded by the National Institute of Mental Health (NIMH), was a three year longitudinal study of older adolescents in foster care. Between December 2001 and May 2003, all youth turning age 17 in the foster care system in eight Missouri counties were considered for this study. Missouri Division of Family Services (MDFS) case workers screened the youth for potential inclusion in the study; excluding youths with IQ scores below 70 ($N=31$), placements over 100 miles from any of the eight included counties ($N=31$), and youths who remained on runaway status up to 45 days past their 17th birthday ($N=49$). Four hundred and four of the 451 eligible youth were interviewed (90%). Nine percent ($N=39$) refused to participate, and the remaining 1% was not able to be interviewed due to problems contacting MDFS workers.

The youths were interviewed alone at their place of residence by trained professional interviewers on a number of different topics, including demographic, mental health diagnosis, history in foster care, illegal involvement, personality, religious involvement, alcohol, smoking and substance use. Interviews lasted one to two hours. There were three major waves of data collection occurring approximately one year apart. The participants were paid \$40 for their participation. Procedures were approved in advance by the university's Human Subjects Committee and a federal certificate of confidentiality was obtained. The youth's caseworker provided informed consent and the youth provided informed assent. Youth were assured before the interview that answers would not be shared with representative of the child welfare system and were reminded of this at the outset of the interview.

Table 1
Sample characteristics (N=404)

	N	%
Gender		
Female	228	57
Race by self-report		
Caucasian	178	43
Youth of color ^a	228	57
Mixed race	15	4
American Indian	3	1
Asian	2	<1
Latino	1	<1
Middle Eastern	1	<1
Living situation (initial interview)		
Non-kin family foster care	115	28
Biological parent	33	8
Kinship care	75	18
Congregate care	169	42
Semi independent	14	3
Maltreatment history ^b		
Physically abused	187	46
Physically neglected	186	46

^a Comprised of African-Americans (N=206), Mixed Race (N=15), American Indian (N=3), Asian (N=2), Latino (N=1), and Middle Eastern (N=1).

^b Derived from the Childhood Trauma Questionnaire (CTQ).

This sample of youth has resulted in several prior publications focusing on rates of psychiatric disorders (McMillen et al., 2005), mental health service histories (McMillen et al., 2004), religious involvement (Scott et al., 2006), substance use (Vaughn, Shook, & McMillen, in press), and quality of care (Lee et al., 2006). Additional description pertaining to study design and procedures can be found in these publications. None of these prior investigations contained any analysis about psychopathy variables and associated risk. As shown in Table 1, the study sample is 57% female, 43% male and ethnically comprised of predominately African-Americans (51%) and Whites (43%).

3.2. Dependent variables

3.2.1. Arrests

At final interviews, participants were queried on their number of arrests between the ages of 17 and 19 using a life calendar in a structured interview assessment (Caspi et al., 1996). This count variable ranged from 0 to 19. Participants were also asked if they had been arrested since discharge from care and age 19 (0=no, 1=yes). These items were strongly correlated ($r_{pb}=0.62$, $p<0.001$).

3.2.2. Illegally making money, illicit drug sales, and assaults on others

These variables were also collected at the final interviews and assessed antisocial behaviors that increase the risk for arrest and subsequent criminal justice involvement. Participants were asked if they have illegally made money (0=no, 1=yes), sold drugs (0=no, 1=yes), and if they had assaulted anyone with a weapon (0=no, 1=yes) in the past 12 months.

3.2.3. Demographics

Gender, age entering MDFS custody, and race were self-reported. As Missouri has small numbers of Asians, Native Americans, and Hispanics, race was collapsed into a dichotomous variable for Whites and youths of color (Black, Asian, Native American, Hispanic, or Bi/multiracial). During final interviews study participants were also queried about their current employment status resulting in the creation of a dichotomous variable (0=no job, 1=job).

3.2.4. Psychopathic traits

At the final interviews adolescents were administered the Psychopathic Personality Inventory-Short Form which is based directly upon the 187-item PPI and correlates strongly ($r=0.90$, $p<0.001$) with the full PPI (Lilienfeld & Andrews, 1996; Cale & Lilienfeld, 2006). Both measures have shown good reliability and usefulness as a self-report measure assessing psychopathic personality (Vaughn & Howard, 2005a,b). The PPI-SF is considered a "pure" personality inventory of psychopathy because it contains no items directly assessing antisocial behaviors. This avoids the tautological processes inherent in measures of psychopathy that include components of antisocial behavior. Thus, this measure of psychopathic features focuses on interpersonal, affective, and behavioral components related to theoretical aspects of psychopathic personality and not criminal or overt antisocial behavior. We subjected the PPI-SF to principal axis, principal components, and maximum likelihood factor analyses considering two to four factors consistent with prior research (Benning et al., 2003). Results from these analyses pointed to a four factor model comprised of fearless-nonconformity (12 items, $\alpha=0.76$), carefree unemotionality (deficient affect) (13 items, $\alpha=0.84$), social potency (extraversion) (10 items, $\alpha=0.68$), and narcissism (10 items, $\alpha=0.78$) featuring Machiavellian traits and the tendency to

Table 2

Descriptive statistics for PPI-SF total and factor scores

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
PPI-SF total score	104.6	14.1	73.0	150.0
Fearless-nonconformity	23.9	7.3	12.0	45.0
Carefree unemotionality	26.3	8.3	12.0	46.0
Narcissism	22.0	6.7	10.0	40.0
Extraversion	30.0	5.7	11.0	40.0

externalize blame. Items that did not sufficiently load (<0.35) on any factor were deleted. The final PPI-SF consisted of 45 items with adequate reliability ($\alpha=0.72$). Factor domains were moderately correlated with the PPI-SF total score for the fearless-nonconformity factor ($r=0.63$, $p<0.001$), deficient affect ($r=0.60$, $p<0.001$), and narcissism ($r=0.46$, $p<0.001$). Social potency (extraversion), however significant, was not as strongly correlated with the total score measure ($r=0.22$, $p<0.001$). Sample summary scores for psychopathy factors are revealed in Table 2.

3.2.5. Substance abuse

In order to control for the relations between substance abuse and legal involvement, we employed substance abuse derived from youth who had reported substance use in the past six months at the initial interviews (i.e., wave 1). DSM-IV substance abuse criteria were assessed with items from the Comprehensive Addiction and Severity Index for Adolescents (CASI-A; Myers, 1994). These questions probed for history of substance abuse related behaviors. Lifetime abuse and dependence disorder was determined by applying DSM-IV abuse and dependence criteria for youths with self-reported substance use in the past six months. Since DSM-IV criteria do not allow a person to meet the abuse disorder criteria if he or she meets dependence criteria, we used the variable that indicated whether the youth met criteria for lifetime substance abuse.

3.2.6. Family support

This seven item measure (range=0–7) comprised of a dichotomous format (yes/no) was adapted from the National Survey of Child and Adolescent Well-Being (NSCAW) and asks such questions as “Is there any family members that can give you advice about important things in life?” and “Is there any family members that would lend you money in an emergency?” Summed scores were used with higher scores reflecting increased family support. These questions were administered during final interviews.

3.2.7. Neighborhood disorder

This 8-item index ($\alpha=0.84$, range=8–24) was adapted from one used in the National Youth Survey (Elliott, Huizinga, & Menard, 1989) and has been used in other studies (e.g., Jang & Johnson, 2001) and assesses the extent of residing in social disorganized areas characterized by structural degradation (e.g., run down and poorly kept buildings and abandoned homes) and presence of risky behaviors (e.g., assaults and muggings). This index was administered at the final interview.

3.2.8. Deviant peer affiliations

This index was based on ten items (range=0–33, $\alpha=0.71$) that posed such questions as “How many of your friends have been in trouble with the police?” in a Likert-type response pattern ranging from none (0), a few (1), about half (2), most (3), and all (4). This index was administered during year two of data collection.

3.2.9. Childhood trauma

Administered at wave one, physical abuse and neglect history was measured utilizing the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998). Internal consistency reliability in the present sample was adequate ($\alpha=0.84$).

3.2.10. Mental health diagnosis

During wave one interviews lifetime and current (past year) diagnosis of mental health disorders were assessed from self-report information from the Diagnostic Interview Schedule for the DSM-IV (DIS-IV, Robins et al., 1995). The DIS scoring algorithms determine whether respondents meet criteria for psychiatric diagnoses using DSM criteria. Diagnostic variables for ADHD and APD were utilized in this study.

3.3. Analytic plan

325 youth (80%) of the initial sample of 406 completed the age 19 interview. Most participants not retained were lost due to our inability to locate them ($N=63$ participants, 16%). Seven young people (2%) chose to leave the study. Seven (2%) young adults were known to be incarcerated at age 19 and we were unable to gather required protections or permissions to conduct an interview. Two participants were not interviewed due to overseas military service. One youth died before age 19. Multivariate logistic regression analyses to predict retention revealed that the following characteristics were associated with decreased odds of being retained in the study to final interview (being male, O.R.=0.34, $p<0.001$), having past year PTSD at

Table 3
Negative binomial model regressing number of arrests on psychopathy factors and other predictors (N=404)

	Coef.	S.E. ^a	z	p-value	[95% C.I.]
Age	-0.159	0.184	-0.86	0.389	[-0.521–0.202]
Gender (Male)	1.123	0.234	4.80	<0.001	[0.664–1.582]
Job	-0.005	0.003	-1.75	0.080	[-0.012–0.001]
Youth of color	-0.352	0.259	-1.36	0.175	[-0.862–0.156]
ADHD	0.438	0.396	1.11	0.269	[-0.339–1.216]
DSM abuse disorder	0.330	0.203	1.62	0.104	[-0.068–0.728]
Family support	0.089	0.059	1.51	0.132	[-0.026–0.206]
Childhood trauma	0.015	0.014	1.09	0.276	[-0.012–0.042]
Neighborhood disorder	0.063	0.023	2.66	0.008	[0.016–0.109]
Deviant peers	0.044	0.015	2.85	0.004	[0.013–0.074]
PPI-SF Narcissism	0.046	0.017	2.58	0.010	[0.011–0.081]
PPI-SF Extraversion	-0.040	0.022	-1.84	0.066	[-0.083–0.002]
PPI-SF Unemotionality	0.058	0.010	5.43	<0.001	[0.037–0.078]
PPI-SF Fearless-Nonconformity	0.023	0.019	1.26	0.209	[-0.013–0.061]
Constant	-4.86	1.28	-3.78	<0.001	[-7.382–2.344]
Log likelihood=-433.26009					
Likelihood-ratio test of alpha=0: 230.74 p<0.001					
Chi-square=153.35, p<0.0001					

^a Bootstrap standard errors (50 replications).

initial interview (O.R.=0.36, p=0.025), having a history of juvenile detention by first interview (O.R.=0.26, p=0.016), and being released from the state's custody prior to age 19 (O.R.=0.26, p<0.0001).

Because youth with criminal histories were harder to retain in the study, multiple imputation methods were used to predict missing values for youth who missed interviews. The data was imputed using IVEware (Raghunathan, Solenberger, & Van Hoewyk, 2002) an SAS callable multiple imputation program that uses a sequence of regression models varying the types of regression model by the type of variable being imputed. Covariates include other variables observed or imputed on that individual across the different waves, maximizing the amount of information available to impute missing data. Although IVEware is touted as being able to use all existing data, we found the program did not operate well when using more than 30 covariates. So, we screened potential covariates for the strongest predictors of the variable being imputed and used these in our regression calculations. The IVEware program is different from the SAS proc MI, the built in imputation procedure in SAS. The multiple datasets created by IVEware can be analyzed using proc MIANALYZE in SAS, which uses a variety of techniques to combine results across datasets, depending on the statistical procedure in use. We used the proportion of missing values in our calculations. Five imputed datasets were created using different seeds. Rubin (1987), using a formula created to estimate the efficiency of estimates based on the number of implicate datasets used, noted that 3–10 implicates typically achieved sufficient efficiency in estimated missing values. The greater the proportion of missing values, the more implicates needed for reliable estimates. With 20% missing values for final interview data, 5 implicates create an efficiency value of 96, whereas increasing the number of implicates to 10 increases the efficiency only to 98. Five seemed to be a fair compromise number balancing relative precision in point estimates and variances and the extra work required for creating additional implicates and analyzing multiple datasets. One implicate was used for current study analyses.

Table 4
Logistic regression results predicting illegally making money (N=404)

	Coef.	S.E.	z	p-value	[95% C.I.]
Age	-0.380	0.272	-1.40	0.162	[-0.914–0.152]
Gender (Male)	0.641	0.257	2.50	0.013	[0.137–1.145]
Youth of color	-0.211	0.271	-0.78	0.436	[-0.743–0.320]
Job	-0.007	0.004	-1.63	0.103	[-0.016–0.001]
Family support	-0.074	0.058	-1.27	0.204	[-0.189–0.040]
DSM abuse disorder	-0.667	0.308	-2.16	0.031	[-1.272–-0.062]
Childhood trauma	0.002	0.016	0.11	0.913	[-0.030–0.034]
ADHD	-0.074	0.388	-0.19	0.849	[-0.835–0.687]
Neighborhood disorder	0.100	0.032	3.05	0.002	[0.035–0.164]
Deviant peers	0.019	0.019	1.01	0.314	[-0.018–0.057]
PPI-SF Narcissism	0.038	0.021	1.79	0.073	[-0.003–0.081]
PPI-SF Extraversion	-0.015	0.023	-0.68	0.497	[-0.061–0.030]
PPI-SF Unemotionality	0.015	0.015	1.01	0.314	[-0.014–0.045]
PPI-SF Fearless-Nonconformity	0.073	0.019	3.79	<0.001	[0.035–0.111]
Constant	-2.949	1.492	-1.98	0.048	[-5.876–-0.024]
Likelihood Ratio Chi-square, 74.14 (df=14) p<0.0001					
Log likelihood=-201.710					
Pseudo R ² =0.1553					

Table 5
Logistic regression results predicting drug selling (N=404)

	Coef.	S.E.	z	p-value	[95% C.I.]
Age	0.073	0.474	0.16	0.877	[-0.857–1.004]
Gender (Male)	0.450	0.461	0.97	0.330	[-0.454–1.355]
Youth of color	-0.470	0.512	-0.92	0.359	[-1.474–0.534]
Job	0.003	0.006	0.45	0.652	[-0.010–0.016]
Family support	-0.062	0.101	-0.62	0.537	[-0.260–0.135]
DSM abuse disorder	0.383	0.617	0.62	0.535	[-0.826–1.592]
Childhood trauma	-0.0166	0.031	-0.53	0.595	[-0.078–0.044]
ADHD	0.309	0.619	0.50	0.618	[-0.905–1.523]
Neighborhood disorder	0.155	0.054	2.88	0.004	[0.049–0.262]
Deviant peers	0.071	0.032	2.18	0.029	[0.007–0.134]
PPI-SF Narcissism	-0.005	0.040	-0.15	0.884	[-0.085–0.073]
PPI-SF Extraversion	0.023	0.042	0.55	0.580	[-0.060–0.107]
PPI-SF Unemotionality	0.041	0.027	1.53	0.126	[-0.011–0.094]
PPI-SF Fearless-Nonconformity	0.107	0.034	3.07	0.002	[0.038–0.175]
Constant	-10.278	2.920	-3.52	<0.001	[-16.002–-4.553]
Likelihood Ratio Chi-square, 41.68 (df= 14) p<0.0001					
Log likelihood=-80.830					
Pseudo R ² =0.205					

The overall analyses proceeded by examining the relations between psychopathy factors and legal involvement variables while controlling for the effects of demographic factors, employment, family support, substance abuse, childhood trauma, deviant peers, and neighborhood disorder. We choose to include these variables not only because of their association with a range of risk outcomes among youths, but also to provide as stringent of a test for psychopathy personality features. If psychopathy features were significantly associated with criminal justice system involvement while competing with these other variables, then we could be as confident as possible with respect to their importance. For the dependent variable, number of arrests, we conducted a negative binomial regression model. 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). Next, we executed a series of logistic regression models with illegally making money, illicit drug selling, and assault with a weapon serving as dependent variables. Finally, we examined the relations between psychopathy features and diagnosis of antisocial personality disorder using logistic regression and how well psychopathy factors perform in correctly classifying APD. Analyses were conducted using STATA 9.2. Checks of collinearity among predictor variables were assessed with standard tests of tolerance and results indicated no problems.

4. Results

4.1. Number of arrests

As revealed in Table 3, results from the negative binomial regression indicate a significant overall model ($\chi^2=153.35$, $df=14$, $p<0.0001$). Along with male gender ($z=4.80$, $p<0.001$), deviant peer affiliations ($z=2.85$, $p=0.004$), neighborhood disorder

Table 6
Logistic regression results predicting assault with a weapon (N=404)

	Coef.	S.E.	z	p-value	[95% C.I.]
Age	0.263	0.262	1.00	0.315	[-0.250–0.778]
Gender (Male)	0.241	0.260	0.93	0.353	[-0.268–0.752]
Youth of color	0.460	0.283	1.63	0.104	[-0.094–1.016]
Job	0.006	0.004	1.51	0.132	[-0.001–0.014]
Family support	-0.029	0.057	-0.50	0.615	[-0.142–0.084]
DSM abuse disorder	0.406	0.351	1.16	0.247	[-0.282–1.095]
Childhood trauma	-0.001	0.016	-0.06	0.953	[-0.034–0.032]
ADHD	0.331	0.387	0.86	0.393	[-0.428–1.092]
Neighborhood disorder	0.011	0.032	0.36	0.719	[-0.052–0.076]
Deviant peers	0.058	0.019	3.02	0.002	[0.020–0.096]
PPI-SF Narcissism	0.061	0.021	2.87	0.004	[0.019–0.102]
PPI-SF Extraversion	0.066	0.023	2.84	0.004	[0.020–0.112]
PPI-SF Unemotionality	-0.049	0.016	-3.04	0.002	[-0.081–-0.017]
PPI-SF Fearless-Nonconformity	0.040	0.019	2.07	0.038	[0.002–0.077]
Constant	-6.375	1.583	-4.03	<0.001	[-9.479–-3.272]
Likelihood Ratio Chi-square, 52.57 (df= 14) p<0.0001					
Log likelihood=-202.775					
Pseudo R ² =0.115					

Table 7
Logistic regression results predicting diagnosis of antisocial personality disorder ($N=404$)

	Coef.	S.E.	z	p-value	[95% C.I.]
Age	0.341	0.290	1.17	0.240	[-0.228–0.911]
Gender (Male)	0.477	0.287	1.66	0.096	[-0.085–1.04]
Youth of color	-0.478	0.306	-1.56	0.119	[-1.07–0.123]
Job	-0.012	0.006	-1.98	0.048	[-0.025–-0.000]
Family support	-0.059	0.061	-0.96	0.338	[-0.180–0.062]
DSM abuse disorder	0.565	0.341	1.66	0.097	[-0.101–1.231]
Childhood trauma	0.007	0.018	0.39	0.969	[-0.028–0.042]
ADHD	0.991	0.391	2.53	0.011	[0.224–1.758]
Neighborhood disorder	0.063	0.036	1.73	0.084	[-0.008–0.135]
Deviant peers	0.055	0.021	2.58	0.010	[0.013–0.097]
PPI-SF Narcissism	0.087	0.024	3.64	0.000	[0.040–0.134]
PPI-SF Extraversion	0.005	0.025	0.21	0.837	[-0.044–0.055]
PPI-SF Unemotionality	-0.040	0.017	-2.31	0.021	[-0.075–-0.006]
PPI-SF Fearless-Nonconformity	0.053	0.020	2.58	0.010	[0.012–0.093]
Constant	-5.52	1.484	-3.72	0.000	[-8.429–-2.611]
Likelihood Ratio Chi-square, 89.18 ($df=14$) $p<0.0001$					
Log likelihood=-168.182					
Pseudo $R^2=0.115$					

($z=2.66$, $p=0.008$) PPI-SF narcissism ($z=2.58$, $p=0.01$) and deficient affect (carefree unemotionality) ($z=5.43$, $p<0.001$) factors were significant predictors of number of arrests.

4.2. Illegally making money, drug selling, and assault with a weapon

For these dependent variables binary logistic regression models (Tables 4, 5, and 6), the psychopathy personality feature of fearless nonconformity was a significant predictor in all three models. With respect to illegally making money, male gender ($z=2.50$, $p=0.01$), neighborhood disorder ($z=3.05$, $p<0.001$), and fearless nonconformity ($z=3.79$, $p<0.001$) were significant positive predictors. Possessing a DSM-IV substance abuse disorder ($z=-2.16$, $p=0.03$) was inversely predictive of illegally making money. For drug selling, neighborhood disorder ($z=2.88$, $p=0.004$), deviant peer affiliations ($z=2.18$, $p=0.029$), and again fearless nonconformity ($z=3.07$, $p=0.002$) were significant predictors. Male gender was not significant in this model.

Results for the dependent variable assault with a weapon indicated that along with deviant peer affiliations ($z=3.02$, $p=0.002$), all four psychopathy factors significantly increased the likelihood of reporting assaulting someone with a weapon. These included narcissism ($z=2.87$, $p=0.004$), extraversion (social influence) ($z=2.84$, $p=0.004$), and fearless nonconformity ($z=2.07$, $p<0.038$). Conversely, carefree unemotionality ($z=-3.04$, $p<0.002$) decreased the likelihood of reporting assault with a weapon. No other independent variables were significant.

4.3. Antisocial personality disorder (APD)

Given that the criteria for APD are comprised of explicit behavioral indicators of norm and law violations, we assessed relations between the “purer” psychopathy personality features and diagnosis of APD. Results displayed in Table 7 show that ADHD ($z=2.53$, $p=0.011$), deviant peer affiliations ($z=2.58$, $p=0.01$) narcissism ($z=3.64$, $p<0.001$), and fearless nonconformity ($z=2.58$, $p=0.01$) are predictive of APD. Like the previous model (see Table 6) carefree unemotionality was inversely predictive ($z=-2.31$, $p=0.021$). No other independent variables were significant.

Next, we individually tested the ability of fearless nonconformity and narcissism to correctly classify APD diagnosis (not shown but available upon request). Results indicated that fearless nonconformity correctly classified 78.5% of cases with an Area under the Curve (AUC) of 0.685. The specificity was high (98.1%) thus yielding a high false negative rate but with low sensitivity (10.0%). The positive predictive value was 60.0% while the negative predictive value was 79.2%. The narcissism factor performed similarly overall correctly classifying APD cases at a rate of 75.7% (AUC=0.707). The false negative rate was again high (95.5%). By comparison, the overall model with all the independent variables including the psychopathy factors correctly classified 80.4% of APD cases thus indicating the importance of narcissism and fearless nonconformity in relation to APD.

5. Discussion

Although there has been a surge of interest in the study of psychopathy among juveniles, investigations have been hampered by an over-reliance on correctional samples. The current objective was to examine the construct of psychopathy in a community sample of 404 foster care youths transitioning out of care. To our knowledge, this is the first study to explore psychopathic traits among a foster care sample. In total, the models indicated that psychopathic personality traits measured by the PPI-SF Narcissism, PPI-SF Extraversion, PPI-SF Unemotionality, and PPI-SF Fearless-Nonconformity were a significant yet inconsistent risk factor for diverse forms of criminal behavior and subsequent involvement with the criminal justice system. Youths who scored highly on the PPI-SF Narcissism and PPI-SF Unemotionality factors were more likely than non-psychopathic youths to be arrested for delinquent

conduct after release from foster care. However, psychopathic traits relating to extraversion and fearless-nonconformity were not significantly related to arrests. The PPI-SF Fearless-Nonconformity score was the only psychopathy measure that was predictive of illegally making money and drug selling. In this sense, psychopathic traits appeared less important in predicting moderate types of delinquency.

An entirely different picture emerged for the logistic regression model predicting assault with a deadly weapon—the most violent offense in the current study. Each of the psychopathic traits, narcissism, extraversion, unemotionality (negative relationship), and fearless-nonconformity predicted assault with a weapon. Other than the psychopathic traits, only association with deviant peers was significantly related to the outcome. None of the remaining covariates, including age, gender, race, employment status, family support, DSM-IV abuse disorder, ADHD, or neighborhood disorder, all of which are robust criminological correlates of serious delinquency, were significantly related to assault with a weapon. The notion that individual-level psychological factors, such as psychopathic traits, provide the strongest explanation for serious delinquency that leads to sustained criminal justice involvement is supportive of prior criminal careers literature (DeLisi, 2001, 2005; Piquero, Farrington, & Blumstein, 2007; Vaughn & DeLisi, 2008). As expected, three of the four psychopathic traits were significantly related to a diagnosis of antisocial personality disorder (APD), a problematic but less pernicious form of psychopathology than psychopathy.

Taken together, the influence of psychopathic traits among youths formerly in foster care portends a troubling and difficult transition to community living particularly when the social history of the former foster care clients is considered. Prior to foster care placement, nearly half of the youths had been physically abused and nearly half had been physically neglected. Upon release from care, a behavioral repertoire of drug selling, weapon carrying and assault, arrests, and antisocial personality diagnosis is not uncommon (Vaughn et al., in press). This profile is similar to that of youths selected from community samples albeit without prior foster care history. For instance, three notable longitudinal studies, the Denver Youth Survey, Pittsburgh Youth Study, and Rochester Youth Development Study have shown that between 14 and 17% of the youths in these samples are habitual offenders who account for 75 to 82% of the incidence of criminal violence. These adolescents in Denver, Pittsburgh, and Rochester tended to be “multiple problem youth” who experienced an assortment of antisocial risk factors, such as mental health problems, alcoholism and substance abuse histories, and sustained criminal involvement. Recent studies have continued to corroborate the nexus of these factors among juvenile offenders (Vaughn, Freedenthal, Jenson, & Howard, 2007; Vaughn, Ollie, McMillen, Scott, & Munson, 2007). Within this violent group, a small minority of youths were the most frequent, severe, aggressive, and temporally stable delinquent offenders. These youths were also noticeable by their impulsivity, emotional and moral insouciance, and lack of guilt with which they committed crime. In other words, these studies indicate that the most violent young offenders display many of the characteristics of psychopathy (Loeber et al., 2002).

There was considerable variation in psychopathic traits among the respondents in the current study (PPI-SF total score range 73–150) suggesting that some of the youths herein presented moderately severe psychopathic personality features. It is likely that these youths are most at-risk for antisociality and criminal justice intervention upon release which is consistent with prior research. For instance, Campbell, Porter, and Santor (2004) studied 226 incarcerated adolescent offenders and found that about 9% exhibited high levels of psychopathic traits; however these youths had the most violent and versatile criminal histories.

A number of policy and practice relevant implications emerge from the present study findings. In terms of policy, extensions of services are warranted for youth in general but in particular for those with legal involvement risk (many of whom present with psychopathic features). Further, based on knowledge of the age-crime curve that shows that criminal involvement decreases rapidly in the adult years in conjunction with neuroscience research that shows that the adolescent brain is not fully formed until approximately age 25 suggests longer service support policy proposal are on firm scientific grounds. This also of course has implications for conceptualizations of adolescence and adulthood, at least in western contexts. Practitioners who work with individual foster youth may need to find innovative ways to treat youth who demonstrate pronounced psychopathic features in order to blunt any negative post-care trajectories. There is limited experimental treatment evidence on persons with psychopathic features yet preliminary evidence shows that the historical skepticism regarding treatment success is unfounded. For example, Salekin (2002) found that intensive treatment did produce modest reductions in psychopathic features and recidivism outcomes. In addition, a recent study by Caldwell et al. (2006) involving 141 juvenile offenders found that intensive treatment reduced recidivism among youth scoring high on the Psychopathy Checklist–Youth Version (PCL-YV).

Several study limitations should be noted. First, the measurement of psychopathic traits was based on a short form version of the full version PPI and there is little published psychometric data on this measure. Second, the PPI-SF was administered once and thus the stability of factor scores is unknown. Third, although a well-conceived study design, the findings may not be generalizable to other samples of youth in the child welfare systems that are transitioning out of care. Fourth, information on arrests and other indicators of legal involvement were based on self reports and were not corroborated by official records. Future studies should attempt to use multiple measures of both psychopathy and risk indicators for criminal justice system involvement. Despite these limitations, findings are important for advancing the generalizability of the construct of psychopathy and its downward extension among adolescents and demonstrating its importance in relation to risks for criminal justice system involvement in large sample of older adolescents outside of a correctional setting.

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