J Psychopathol Behav Assess
DOI 10.1007/s10862-016-9535-0

Psychopathic Traits Mediate the Relationship Between Exposure to Violence and Violent Juvenile Offending

Arielle R. Baskin-Sommers[1] · **Deborah Baskin**[2]

Abstract Exposure to violence (ETV) has emerged as a key and stable predictor of violent offending. However, not all youth offenders who experience ETV go on to chronic violent offending. Consequently, it is possible that individual differences, such as psychopathic traits, may be an important factor in the link between ETV and violent offending. These traits are associated with exposure to violence and, separately, to violent offending. The present study used data from Pathways to Desistance, a multisite, longitudinal study of serious juvenile offenders ($N = 1170$, $Mean_{age} = 16.05$, $SD = 1.16$) to explore these relationships, simultaneously. First, autoregressive cross-lagged path models were used to examine the longitudinal bivariate relations among violent offending, ETV, and psychopathic traits. Second, latent class growth analysis was used to determine trajectories ETV. And third, the mediating influence of psychopathic traits was examined. Results indicated that ETV predicted later engagement in violence, but there was some degree of reciprocity between ETV and violence over time. Additionally, respondents with stable high or increasing trajectories of ETV reported more instances of violent offending. Finally, psychopathic traits mediated the relationship between ETV and violent offending. Together these findings support the notion that individuals with psychopathic traits perceive and internalize their environment differently than others and that this difference guides their own violent offending. Given the importance of psychopathic traits for understanding the influence of ETV on violent offending, prevention and intervention strategies must be developed that take into account both individual differences and environmental factors.

Keywords Psychopathic traits · Exposure to violence · Violent offending · Juvenile · Trajectories

The last number of years has seen an increase in research on violent juvenile criminality. Studies often point to community disadvantage, that is the spatial concentration of poverty, residential segregation, and social disorder, as creating conditions conducive for the development of such a serious form of offending (Sampson 2012). However, research also suggests that these conditions do not affect all youth, similarly. Therefore, other mechanisms must be in effect, such that only some youth become involved in violence. One mechanism that is identified in the literature is exposure to community violence (ETV; Baskin and Sommers 2013; Cuevas et al. 2007). But, even among those who experience ETV, there appears to be significant variation in terms of the quantity and quality of exposure, the impact of risk and protective factors, and how these factors relate to outcomes, particularly violent juvenile crime (Baskin and Sommers 2013; Haynie et al. 2009; Kimonis et al. 2008; Patchin et al. 2006). A possible explanation may be that individual differences color how community disadvantage and ETV are perceived and internalized, resulting in individual variability in behaviors, including violent offending.

Psychopathy is an individual difference strongly associated with negative life experiences and later violent offending (Blair and Lee 2013; Skeem et al. 2011). Therefore, it may be important for understanding the connection between ETV

✉ Arielle R. Baskin-Sommers
arielle.baskin-sommers@yale.edu

[1] Department of Psychology, Yale University, P.O. Box 208205, New Haven, CT 06520, USA

[2] Department of Criminal Justice and Criminology and Department of Sociology, Loyola University, Chicago, IL, USA

Published online: 29 January 2016

and violence. Psychopathy is a distinct subtype of disinhibitory psychopathology characterized by a variety of interpersonal and affective symptoms, such as callousness, shallow affect, lying, superficial charm, and manipulativeness, as well as impulsive and antisocial behaviors (Hare 2003). Individuals with psychopathic traits (and callous-unemotional traits, a potential component of psychopathic traits) are likely to experience negative life events, including exposure to violence (Baskin-Sommers et al. 2016; Caputo et al. 1999; Kimonis et al. 2008; Marshall and Cooke 1999). These experiences may shape processes related to empathy, morality, and guilt, which are generally deficient in youth who develop psychopathic traits (Mead et al. 2010). Moreover, psychopathic traits are also one of the strongest predictors of chronic violent offending (Blair et al. 2006; Hare 2003; Raine 2002). Given the strong associations between ETV and psychopathic traits, as well as, between psychopathic traits and violent offending, it may be that ETV provides opportunities for youth with psychopathic traits, who have deficits in particular forms of emotional functioning and information processing (Baskin-Sommers and Newman 2012; Blair 2010), to learn that violent strategies often produce sought after results. And, due to these deficits, any conflict around imposing harm on others is superseded by a strong desire to attain their goal. Thus, youth with psychopathic traits may focus on the outcome that s/he believes will be obtained by using violence and does not consider alternative strategies, victim distress cues, or repercussions that might mitigate violence (Baskin-Sommers and Newman 2012; Glenn and Raine 2009). This suggests that psychopathic traits may mediate the relationship between ETV and serious violent offending careers, as youth with these traits process their environment in a way that is different than youth without them.

The present study explored whether psychopathic traits, in fact, mediate this relationship within a sample of serious youth offenders. The use of this sample offered a few advantages. First, juvenile offenders have a greater likelihood of ETV than their non-justice system involved peers (Cuevas et al. 2007). Second, they share more risk factors (Halliday-Boykins and Graham 2001) thereby making it easier to parse out the role that psychopathic traits play in the relationship between ETV and violent offending. Third, juvenile offenders are more likely to present with psychopathic traits than found in community samples (Campbell et al. 2004; Dolan 2004), thereby permitting more robust statistical analyses. While both life experiences and individual differences in personality traits are important predictors of violent offending, it is possible that personality traits influence *how* life experiences are internalized and elaborated on by the individual, ultimately resulting in violent behavior.

Methods

The present study is a secondary analysis of data from Pathways to Desistance, a multisite, longitudinal study of serious juvenile offenders. A full description of the methods can be found in Mulvey et al. (2004). Briefly, though, Pathways researchers conducted a 4-h baseline interview with each adolescent (ages 14–18) shortly after they enrolled in the project. The interviews covered a wide range of individual and social background factors. Each of the follow-up interviews was completed in one 2-h session. Participants were re-interviewed every 6 months for the 3 years following the baseline interview; after 36 months, participants were interviewed annually for the remaining 4 years of the study. To create uniform time measurement for the purposes of the present analyses, we combined data from the 6 to 36 month annual follow-up interviews into yearlong intervals by averaging exposure to violence and violent offending across the 6 and 12 month assessments, the 18 and 24 month assessments, and the 30 and 36 month assessments, respectively. The Youth Psychopathic Inventory (YPI) was administered starting the second year of data collection (ages 15–19) and then annually across five subsequent waves. The present analyses therefore included a total of 6 time points, each one year apart. Control variables for the present analyses were drawn from the baseline interview. Finally, the current study was restricted to male adolescent offenders (N = 1170; see Table 1 for descriptive statistics), as the dataset did not have a sufficient number of females (N = 184) to adequately conduct analyses and used data from baseline through five years of follow-up.

Measures

Dependent Variable

Self-Reported Violent Offending A version of the Self-Report of Offending (SRO; Elliott 1990; Huizinga et al. 1991) scale was used at each interview to measure involvement in eight different violent crimes (gang related fights, assault, carjacking, robbery with and without weapon, shooting someone, shooting at someone, carrying a gun) over the past 12 months. Each of the items was coded to reflect whether the respondent did or did not report engaging in each act at least once. A sum of the number of types of violent offenses committed ("general versatility or variety" score) was calculated. A variety scale was used in the analyses in light of research indicating that variety scales are more internally consistent and stable (Bendixen et al. 2003). The intra-class correlation for violence across time was 0.75.

Table 1 Descriptive statistics at baseline ($N = 1170$)

	Minimum	Maximum	% of Sample	Mean	Std. Deviation
Age	14	18		16.05	1.16
Sex (Male)	–	–	100	–	–
Race					
White	–	–	19.2	–	–
Black	–	–	42.1	–	–
Latino	–	–	34.0	–	–
Other	–	–	4.6	–	–
School Dropout	0	1	15.9	–	–
Single Parent	0	1	44.6	–	–
Proportion Family Arrested	0	1		.312	.399
Proportion Friends Arrested	0	1		.446	.380
Neighborhood conditions	1	4		2.35	.741
# Early Onset Problems	0	5		1.51	1.19
IQ	55	128		84.5	12.84
Anxiety	1	28		9.79	5.94
Emotion control	1	4		2.77	.656
Impulse control	1	5		2.96	.945
ETV	0	13		5.46	2.79
YPI	59	191		107.24	22.54
# Types of Violent Crimes					
No history of Violent Crimes	0	0	75.9	–	–
History of Violent Crimes	1	8		2.08	1.46

Independent Variable

Exposure to Violence (ETV) The Exposure to Violence Inventory (Selner-O'Hagan et al. 1998) assessed the frequency of exposure to violent events. Items documented the types of both experienced and observed violence. Higher count scores indicated greater exposure to violence. Latent class growth analysis was used to identify groups that followed distinctive patterns of ETV (see *Analytic Strategy* below). The intra-class correlation for exposure to violence across time was .80.

Mediating Variable

Psychopathic Traits Psychopathy was assessed with the Youth Psychopathic Traits Inventory (YPI; Andershed et al. 2002), which included 50 items, rated on four-point Likert scales. This scale consisted of three different subscales, Callous/Unemotional Traits, Impulsivity/Irresponsibility, and Grandiosity/Manipulativeness. Of note, for the cross-lagged analysis, psychopathic traits were measured as a continuous total score on the YPI, and for the mediation analysis, psychopathic traits were measured as a time averaged continuous variable.[1] Psychopathy scores showed good internal consistency ($\alpha = .93$).

[1] We performed a group based trajectory analysis that demonstrated the linear stability of this measure over time, yielding three trajectory groups of psychopathic traits: low, moderate, and high.

Risk Factor Covariates (Baseline Measures) The present study considered a number of individual, familial, peer, and neighborhood risk factors that are linked to violence as covariates in the regression models. These risk factors included: (i) *School dropout* (yes/no); (ii) *Early onset problems before age 11* (total count of five early onset problems: getting into trouble for cheating, disturbing class, getting drunk/stoned, stealing, or fighting); (iii) *Intelligence* (Wechsler Abbreviated Scale of Intelligence; Wechsler 1999); (iv) *Emotion regulation* (Children's Emotion Regulation scale; Walden et al. 1995) ($\alpha = .81$); (v) *Impulse control* (Weinberger Adjustment Inventory; Weinberger and Schwartz 1990) ($\alpha = .88$). (vi) *Anxiety* (Revised Children's Manifest Anxiety; Reynolds and Richmond 1985) ($\alpha = .87$); (vii) *Family arrests* (proportion of family members who resided with the subject and who had been arrested); (viii) *Peer deviance* (proportion of four closest friends ever arrested); and, (ix) *Neighborhood conditions* (physical/social disorder; Sampson and Raudenbush 1999) ($\alpha = .94$). Details about each measure can be found in the Pathways codebook.

Analytic Strategy

Analysis occurred in three stages. First, we constructed several autoregressive cross-lagged path models (Bollen and Curran 2006) within Stata 13 and examined the longitudinal bivariate relations among violent offending, ETV, and

psychopathic traits across the study period (i.e., time point 1 to 6). In each model, change in the variables was accounted for by regressing each repeatedly assessed variable on its immediate prior value (i.e. one-year stability paths). The stability paths signified continuity within variables. The cross-lagged, across-time, paths represented associations between the repeated assessments. All forward and backward paths (e.g. from ETV to violence at all time points and from violence to ETV at all time points) were tested. The models also allowed for cross-sectional correlations between variables to be assessed in parallel. To determine model fit, the root mean square error of approximation (RMSEA) (less than .05 is considered a good fit), the comparative fit index (CFI) and the Tucker-Lewis index (TLI) (values greater than .9 and close to 1 suggest good fit) were used (Bollen and Curran 2006).

Second, latent class growth analysis (Latent Gold 4.5) was run to determine groups of participants demonstrating within-group homogeneity in terms of patterns of ETV throughout time and then to model a developmental trajectory for each group. Because the ETV measure was based on count data (number of exposures to violence endorsed), we used negative binominal regression to account for the clustering at zero (Lambert 1992). We estimated the probability that each individual belonged to a given group on the basis of the data and simultaneously derived maximum-likelihood parameter estimates associated with membership in each of the defined trajectories (i.e., posterior probabilities of group membership). On the basis of posterior probabilities, individuals were assigned to their most likely group trajectory.

ETV was examined across six measurement points (i.e., baseline and 5 follow-up annual interviews). Data were tested for various numbers of latent classes, and the fit of different models was compared with Bayesian information criterion (BIC; Jones et al. 2001). Mixtures of up to six latent classes were considered. The best trajectory solution was determined by three criteria: the lowest BIC value across models, a conceptually clear model, and a model in which each group included at least 5 % of the sample. Based on these criteria, the four-group trajectory solution was chosen as the overall best fitting model. Exposure time or the amount of time the subject was free to be exposed to violence in the community was used as a time-varying covariate in the analyses.

Third, the mediating influences of psychopathic traits were investigated. To test the direct and indirect effects of the mediational models, this study used a bias-corrected bootstrapping method (Preacher and Hayes 2004). This technique uses sampling with replacement (5000 samples were used in the present study) to estimate the indirect effect and produce a 95 % confidence interval (CI) for the indirect effect. If the confidence interval does not include 0, then the conclusion is that the indirect effect is significant at $p < .05$. For this study, the negative binomial mediation analysis macro by Hayes (2013) was used to examine violent offending versatility (King 1989). We conducted negative binomial regression analyses because the deviance statistic for a Poisson model indicated overdispersion (when the true variance is bigger than the mean). Finally, the mediation models controlled for the baseline level of the dependent variable (SRO) in examining the temporal relationship between ETV and violent offending.

Results

Cross-Lagged Models

The first model tested all paths linking ETV and violence versatility (Fig. 1). Four of the five paths from ETV at time x to violent offending at time x + 1 were significant (ETV at time point 1 to time point 4). Two of the reverse paths from violence to ETV were significant (violence at time point 3 and time point 5). Although some reciprocity between ETV and violence was present, paths were most robust for ETV predicting violence (e.g., forward prediction paths). The second model tested all paths linking psychopathic traits and violence (Fig. 2). The results showed that all paths from psychopathic traits to violent offending were significant. Only one reverse path (violence at time point 4 – psychopathic traits at time point 5) was significant, indicating psychopathic traits were a possible cause of violent offending. The third model tested all paths linking ETV, psychopathic traits, and violence (Fig. 3). Three paths from ETV at time x to psychopathic traits at time x + 1 were significant (ETV at time point 2- psychopathic traits at time point 3, ETV at time point 4- psychopathic traits at time point 5, and ETV at time point 5- psychopathic traits at time point 6). All paths from YPI to violent offending were significant. Only one reverse path was significant (violence at time point 1 – psychopathic traits at time point 2). Results demonstrated excellent model-fit (CFI = 0.98, RMSEA = .055, TLI = .95). To further assess the mediating process suggested by the cross-lagged panel model, formal tests of mediation proposed by Preacher and Hayes (2004) were conducted (see below).

Trajectories of ETV

The trajectories of ETV (Fig. 4) revealed a variety of patterns among the youth. Approximately 39 % of the sample was on a "stable low" trajectory (38.5 %), which had consistently low levels of ETV throughout the time period of the study. In Group 2, the "moderate-declining" (22.6 %) trajectory began with moderate levels of exposure but then declined across time. The "low-increasing" (Group 3, 28.5 %) trajectory began with low levels of exposure but then showed a rather consistent increase throughout time. The final group had high levels of exposure at baseline and over the 5 year follow-up period.

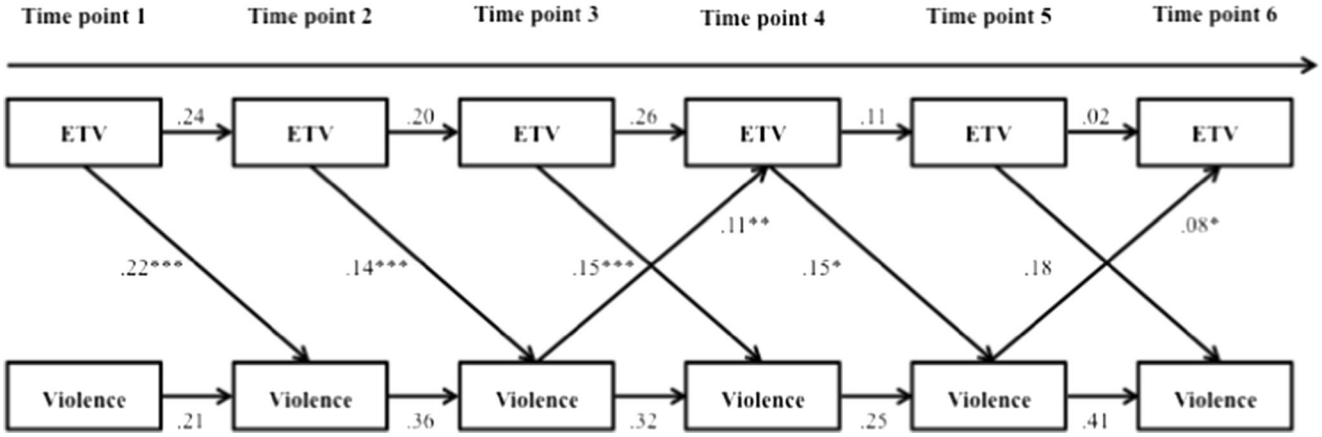

Fig. 1 Exposure to violence and violent offending path model. *Note*: ETV = Exposure to Violence; Violence = Violence versatility score; * $p < .05$, ** $p < .01$, *** $p < .001$

5-Year Follow-up Mediation Analysis

Table 2 displays results from the mediation analysis comparing the stable high ETV trajectory to all other ETV groups. ETV was positively related to violent offending versatility, indicating that respondents with stable high levels of ETV were 3.73 times more likely to engage in various types of violent crimes. Additionally, the low but increasing exposure youth were 6 times more likely than the low exposure group to have high levels of violent offending at the end of the study and 2.5 times more likely than their counterparts in the moderate exposure group. Further, psychopathic traits mediated the relationship between ETV and violent offending: (a) ETV predicted psychopathic traits ($\beta = 37.95$, $p < .001$), (b) psychopathic traits predicted violent offending behaviors after controlling for ETV ($\beta = .0014$, $p < .001$), and (c) the relationship between ETV and violence was significantly reduced when psychopathic traits was included in the model ($\beta = .529$, $p < .001$). An examination of the specific indirect effects (see Table 3) indicated that psychopathic traits [$a_1b_1 = .053$, 95 % CI (.0259, .0975)] was a significant mediator of the relationship between ETV and violent offending.[2] Finally, examination of the YPI subscales revealed that none of the subscales mediated the relationship between ETV and violent offending (indirect effects for Callous-Unemotional 95 % CI lower = − .002, 95 % CI upper = .006; Grandiosity/Manipulativeness 95 % CI lower = − .013, 95 % CI upper = .052; Impulsivity/Irresponsibility95% CI lower = − .013, 95 % CI upper = .005), indicating that the unitary measure of psychopathic traits was important for understanding the relationship between ETV and violence.

[2] Examination of the mediation model using time-averaged ETV, rather than trajectories, yielded similar results: (a) ETV predicted psychopathic traits ($\beta = 3.60$, $p < .001$), (b) psychopathic traits predicted violent offending behaviors after controlling for ETV ($\beta = .001$, $p < .050$), and (c) the relationship between ETV and violence was significantly reduced when psychopathic traits was included in the model ($\beta = .055$, $p = .001$). Additionally, using ETV at time point 1 to predict violent crimes at time point 5 yielded the same results as the primary mediation. Finally, separate mediation analyses were conducted with the respective ETV subscales (i.e., direct victimization and witnessing violence). Psychopathic traits mediated both direct victimization (95 % CI lower = .004, 95 % CI upper = .020) and witnessing community violence (95 % CI lower = .002, 95 % CI upper = .0072). The consistency across models, suggests that even when using the strictest definition of time-order related to mediation, ETV and violent offending were robustly related and that psychopathic traits mediated that relationship.

Discussion

The present study found that among serious juvenile offenders, ETV predicted involvement in violent offending, above and beyond other known risk factors (e.g., community disadvantage). This held true whether exposure was direct (victimization) or indirect (witnessing others' victimization) and whether ETV was high at baseline or increased over the course of the study. Moreover, results also indicated that psychopathic traits mediated this relationship. This suggests that ETV is a powerful force that broadly and gravely impacts youth who become involved in serious violent offending but that, to some degree, this effect is dependent on whether the youth has psychopathic traits.

The overlap between ETV and offending has long been established in research. Studies demonstrate that offenders are at a high risk for becoming victims of crime (Zhang et al. 2001) and that victimization increases involvement in offending (Fagan 2005). There is also evidence that offending and victimization have reciprocal effects over time (Shaffer and Ruback 2002). Consistent with previous work, results from the cross lag analyses, supported some degree of reciprocity between ETV and violence over time. However, across path models, ETV emerged as a stronger predictor of violent offending than the reverse.

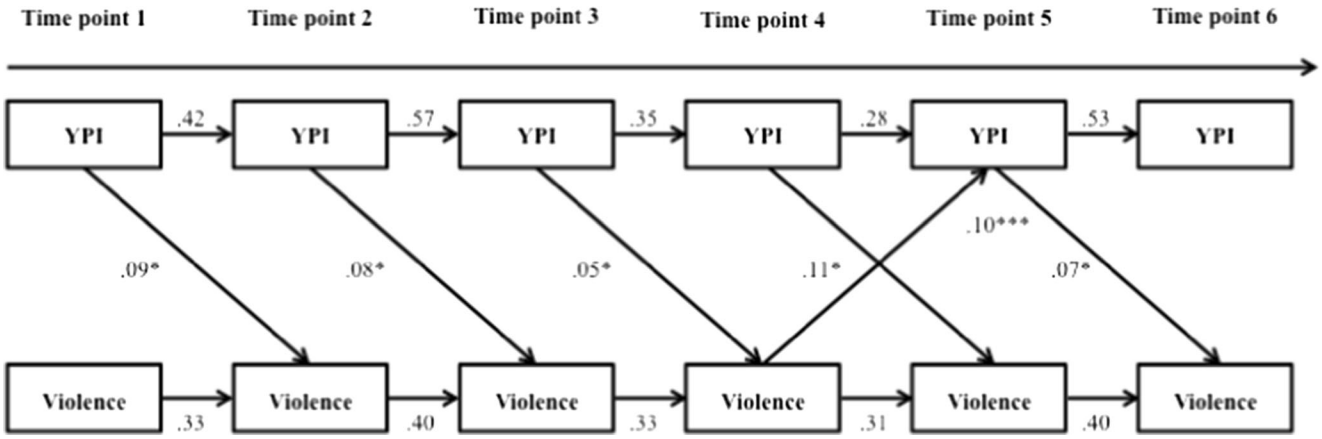

Fig. 2 Psychopathic traits and violent offending path model. *Note*: YPI = Youth Psychopathic Traits Inventory Total Score; Violence = Violence versatility score; * $p < .05$, ** $p < .01$, *** $p < .001$

Despite the strong relationship between ETV and violent offending, there remains variability in who advances from having these types of life experiences to those who fall into a pattern of engaging in violence, themselves. Indeed, the current study found that the presence of psychopathic traits, specifically the unitary measure, mediated the link between ETV and violent offending. The specificity of the results to the unitary measure suggests that the types of deficits purportedly associated with the construct of psychopathy, rather than component traits, may influence how these individuals engage with the world around them. Although there are many pathways to serious violent offending among juveniles, the presence of psychopathic traits among youth who are exposed to community violence may be the result of a fundamental link between psychobiological deficits that interact with certain environmental factors (i.e. exposure to violence), in a way that is synergistic and acts as a pathway to violent criminal careers. That is, the emotional and information processing deficits found in psychopathy, particularly those that impact the perception and internalization of life experiences such as ETV, may be constrained, limiting ongoing evaluations of one's own and other's behavior, thoughts, and emotions (Baskin-Sommers et al. 2013; Blair & Blair and Mitchell 2009). Youth with psychopathic traits who have high or ascending ETV may interpret the use of violence as normative and useful for goal attainment and dispute resolution. As a result, they are more likely to engage in a variety of violent offenses, without considering the impact on others and/or alternative means to

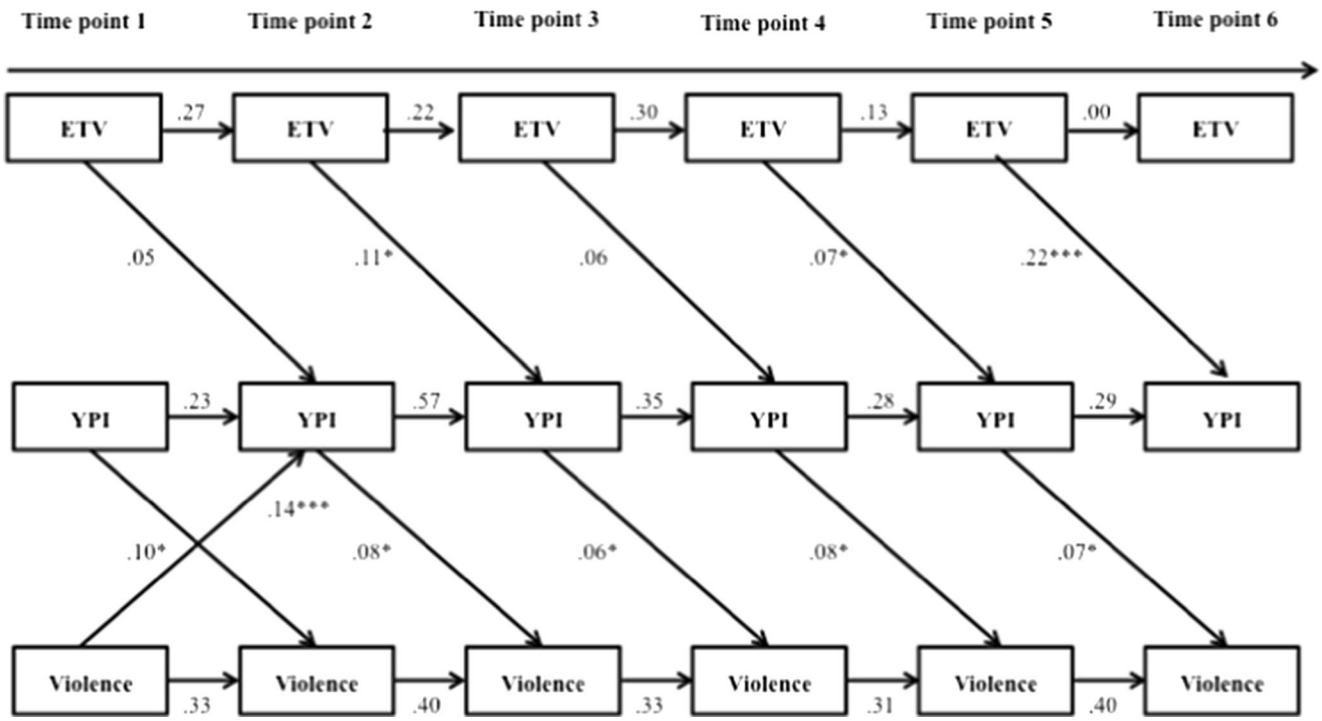

Fig. 3 Exposure to violence, psychopathic traits, and violent offending path model

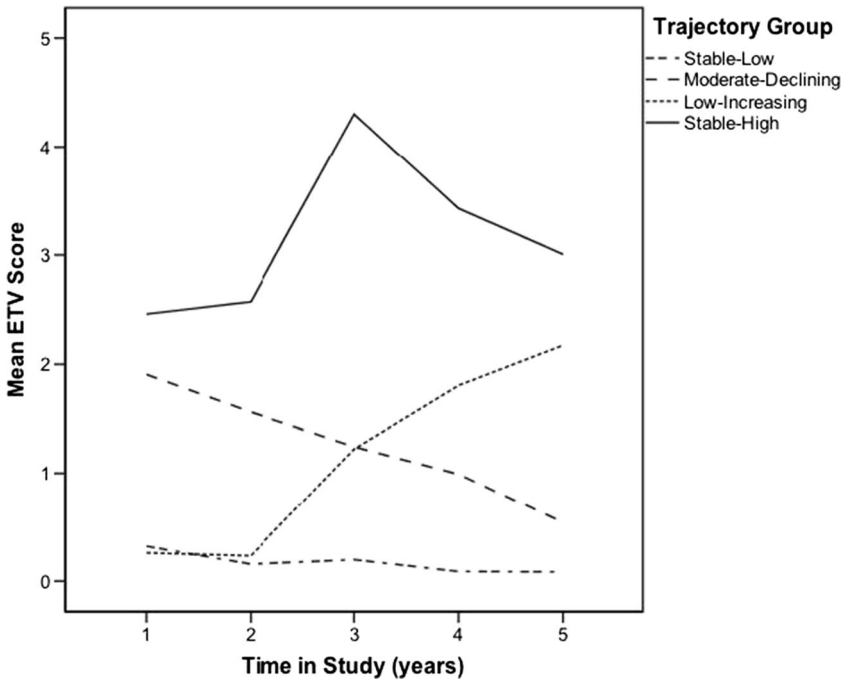

Fig. 4 Trajectories of exposure to violence

achieve objectives. Regardless of the roots of psychopathic traits, the results of the present study suggest that juvenile offenders with stable high psychopathic traits may be a subgroup of offenders who are especially violent and whose chronicity may be linked to specific community conditions.

Given these findings, prevention and intervention strategies should take into account *both* the individual difference and environmental factors that bring these youth to and potentially keep them on violent offending trajectories. Youth who are chronically exposed to community violence and who demonstrate psychopathic traits may benefit from prompt intervention so as to reduce their initiation into violent criminal careers. Case management decisions for youth already involved in the justice system who present with psychopathic traits should include strategies related to violence exposure reduction and to treatments involving cognitive remediation. Importantly, this study provides empirically derived information that can be useful for the efficacious classification and treatment of serious adolescent offenders and for the design of more rational juvenile justice policies.

Table 2 Regression results for the mediation of the effect of stable high ETV on violent offending versatility by psychopathic traits

	Estimate	SE	*p*-value	CI lower	CI upper
Model without Mediator					
Intercept	1.06	.490	.031	.098	2.02
High ETV → Violence (c)	.584	.079	.000	.429	.738
$R^2_{y,x}$	.093				
Model with Mediator					
Intercept	.183	.552	.741	−.901	1.27
High ETV → Psychopathic traits (a)	37.95	9.36	.000	.19.57	56.32
Psychopathic traits → Violence (b)	.001	.000	.000	.001	.002
High ETV → Violence (c')	.529	.085	.000	.362	.695
Indirect Effect (a x b)	.053			.026	.098
$R^2_{m,x}$	.099				
$R^2_{y,mx}$	.117				

$R^2_{y,x}$ is the proportion of variance in Y explained by X, $R^2_{m,x}$ is the proportion of variance in M explained by X, and $R^2_{y,mx}$ is the proportion of variance in Y explained by X and M. The 95 % CI for a x b is obtained by the bias-corrected bootstrap with 5,000 resamples. The CIs for R^2 indices are obtained analytically

With the exception of baseline violent offending, all of the covariates in the direct effects model were statistically non-significant

Table 3 Indirect effect of stable high ETV on violent offending versatility by psychopathic traits

Direct effect of High ETV on Violent Offending Versatility						
	Effect	SE	t	*p*-value	LLCI	ULCI
	.529	.085	6.23	<.01	.362	.695
Indirect effect of High ETV on Violent Offending Versatility						
	Effect	Boot SE			LLCI	ULCI
YPI	.053	.017	–	–	.026	.098

That said, there are those who raise important issues concerning the appropriateness of identifying youth as having psychopathic traits (Edens et al. 2001). Most critical is the concern that this will result in harsher punishments (Skeem and Cauffman 2003; Vincent and Hart 2002) and stigmatize young offenders with such traits, preventing their maturation out of crime (Edens et al. 2001; Jones et al. 2006). Yet, others argue that it is precisely this reticence to identify youth with psychopathic traits that results in offending stability (Frick 2002). By avoiding their special needs, youth with psychopathic traits do not receive early intervention. This is particularly unfortunate as research suggests that younger juveniles are more treatable than their older counterparts (Forth and Burke 1998).

The current study is not without limitations. First, the nature of the dataset precluded establishment of temporal order between ETV and violent offending at baseline. Therefore, it was not possible to know whether chronic exposure produced violent offending, whether violent offending placed youth in settings where there was greater ETV, or whether they co-occurred in close enough time to work synergistically. However, we did have some clues in the finding that youth in the increasing exposure trajectory also had greater violent versatility at study's end (see Footnote 2 and cross lag analysis), suggesting that ETV was the motor force. Second, the present sample was limited to males, making it unclear whether gender impacted the relationship among ETV, psychopathic traits, and violent behavior. Finally, though youth may be the best reporters of some of these behaviors (i.e., violence) and the use of autoregressive effects can somewhat mitigate shared-method bias, our approach of using only self-report methods may have overestimated effects through shared method biases. Future studies examining prospective links among ETV trajectories, individual differences, and violence should include official records to avoid potential limitations associated with single reporter data collection.

In conclusion, the present study contributes to a growing literature on serious juvenile offenders that examines the relationship between community conditions and individual differences. Strong support was found for integrating psychological and social factors so as to enhance the understanding of how individual differences, such as psychopathic traits, combine with factors and processes at the community level to promote violent offending careers. Such an integrative approach also works to better identify both youth who are most in need of early and intensive intervention and the community factors that impact them.

Compliance with Ethical Standards

Conflict of Interest Arielle R. Baskin-Sommers and Deborah Baskin declare that they have no conflict of interest.

Experiment Participants The present study is a secondary analysis of data from Pathways to Desistance, a multisite, longitudinal study of serious juvenile offenders. Consent was obtained for all participants by the original research team.

References

Andershed, H. A., Kerr, M., Stattin, H., & Levander, S. (2002). Psychopathic traits in non-referred youths: a new assessment tool. In E. Blauw, & L. Sheridan (Eds.), *Psychopaths: current international perspectives* (pp. 131–158). The Hague: Elsevier.

Baskin, D., & Sommers, I. (2013). Exposure to community violence and trajectories of violent offending. *Youth Violence and Juvenile Justice*, *1-19*.

Baskin-Sommers, A., Baskin, D. Sommers, I. Casados, A. Crossman, M. & Javdani, S. (2016). The impact of psychopathology, race, and environmental context on violent offending in a male adolescent sample. *Personality Disorders: Theory, Research, and Treatment*. doi:10.1037/per0000168.

Baskin-Sommers, A. R., Curtin, J. J., & Newman, J. P. (2013). Emotion-modulated startle in psychopathy: clarifying familiar effects. *Journal of Abnormal Psychology*, *122*, 458–468.

Baskin-Sommers, A. R., & Newman, J. P. (2012). Cognition–emotion interactions in psychopathy: implications for theory and practice. In H. Hakkanen-Nyholm & Nyholm (Eds.) *Psychopathy and Law* (pp. 79–98). Wiley: New York.

Bendixen, M., Endresen, I. M., & Olweus, D. (2003). Variety and frequency scales of antisocial involvement: which one is better? *Legal and Criminological Psychology*, *8*, 135–150.

Blair, R. J. R. (2010). Neuroimaging of psychopathy and antisocial behavior: a targeted review. *Current Psychiatry Reports*, *12*(1), 76–82.

Blair, R. J. R., & Mitchell, D. G. V. (2009). Psychopathy, attention and emotion. *Psychological Medicine*, *39*, 543–555.

Blair, R. J. R., & Lee, T. M. (2013). The social cognitive neuroscience of aggression, violence, and psychopathy. *Social Neuroscience*, *8*, 108–111.

Blair, R. J. R., Peschardt, K. S., Budhani, S., Mitchell, D. G. V., & Pine, D. S. (2006). The development of psychopathy. *Journal of Child Psychology and Psychiatry*, *47*, 262–276.

Bollen, K., & Curran, P. (2006). *Latent curve models: A structural equation perspective*. New York, NY: Wiley.

Campbell, M. A., Porter, S., & Santor, D. (2004). Psychopathic traits in adolescent offenders: an evaluation of criminal history, clinical, and psychosocial correlates. *Behavioral Sciences & the Law*, *22*, 23–47.

Caputo, A. A., Frick, P. J., & Brodsky, S. L. (1999). Family violence and juvenile sex offending the potential mediating role of psychopathic traits and negative attitudes toward women. Criminal Justice and Behavior, *26*(*3*), 338–356.

Cuevas, C., Finkelhor, D., Turner, H., & Omrod, R. (2007). Juvenile delinquency and victimization: a theoretical typology. *Journal of Interpersonal Violence*, *22*, 1581–1602.

Dolan, M. (2004). Psychopathic personality in young people. *Journal of Continuing Professional Development*, *10*, 466–473.

Edens, J. F., Skeem, J. L., Cruise, K. R., & Cauffman, E. (2001). Assessment of "juvenile psychopathy" and its association with violence: a critical review*. *Behavioral Sciences & the Law, 19*(1), 53–80.

Elliott, D. (1990). *National youth survey*. Denver, CO: University of Colorado, Institute of Behavioral Science.

Fagan, A. (2005). The relationship between adolescent physical abuse and criminal offending:support for an enduring and generalized cycle of violence. *Journal of Family Violence*, *20*, 279–290.

Forth, A. E., & Burke, H. C. (1998). Psychopathy in adolescence: assessment, violence, and developmental precursors. In D. Cooke, A. Forth, & R. Hare (Eds.), *Psychopathy: theory, research and implications for society* (pp. 205–229). Netherlands: Springer.

Frick, P. J. (2002). Juvenile psychopathy from a developmental perspective. *Law and Human Behavior*, *26*, 247–253.

Glenn, A. L., & Raine, A. (2009). Psychopathy and instrumental aggression: evolutionary, neurobiological, and legal perspectives. *International Journal of Law and Psychiatry*, *32*, 253–258.

Halliday-Boykins, C., & Graham, S. (2001). At both ends of the gun: testing the relationship between community violence exposure and youth violent behavior. *Journal of Abnormal Child Psychology*, *29*, 383–402.

Hare, R. D. (2003). Manual for the revised psychopathy checklist *multi*-health systems. Toronto, *ON*, *Canada*.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.

Haynie, D., Petts, R., Maimon, D., & Piquero, A. (2009). Exposure to violence in adolescence and precocious role exits. *Journal of Youth and Adolescence*, *38*, 269–286.

Huizinga, D., Esbensen, F., & Weihar, A. (1991). Are there multiple paths to delinquency? *Journal of Criminal Law and Criminology*, *82*, 83–118.

Jones, S., Cauffman, E., Miller, J. D., & Mulvey, E. (2006). Investigating different factor structures of the psychopathy checklist: youth version: confirmatory factor analytic findings. *Psychological Assessment*, *18*, 33.

Jones, B., Nagin, D., & Roeder, K. (2001). A SAS procedure based on mixed models for estimating develop- mental trajectories. *Sociological Methods and Research*, *29*, 374–393.

Kimonis, E. R., Frick, P. J., Munoz, L. C., & Aucoin, K. J. (2008). Callous-unemotional traits and the emotional processing of distress cues in detained boys: testing the moderating role of aggression, exposure to community violence, and histories of abuse. *Development and Psychopathology*, *20*, 569–589.

King, G. (1989). Variance specification in event count models: from restrictive assumptions to a generalized estimator. *American Journal of Political Science, 33*, 762–784.

Lambert, D. (1992). Zero inflated Poisson regression with an application to defects in manufacturing. *Technometrics*, *34*, 1–13.

Marshall, L. A., & Cooke, D. J. (1999). The childhood experiences of psychopaths: a retrospective study of familial and societal factors. *Journal of Personality Disorders*, *13*(*3*), 211–225.

Mead, H. K., Beauchaine, T. P., & Shannon, K. E. (2010). Neurobiological adaptations to violence across development. *Development and psychopathology, 22*(01), 1–22

Mulvey, E., Steinberg, L., Fagan, J., Cauffman, E., Piquero, A., Chassin, L., et al. (2004). Theory and research on desistance from antisocial activity among serious adolescent offenders. *Youth Violence and Juvenile Justice*, *2*, 213–236.

Patchin, J., Huebner, B., McCluskey, J., Varano, S., & Bynum, T. (2006). Exposure to community violence and childhood delinquency. *Crime and Delinquency*, *52*, 307–332.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, *36*, 717–731.

Raine, A. (2002). Biosocial studies of antisocial and violent behavior in children and adults: a review. *Journal of Abnormal Child Psychology*, *30*, 311–326.

Reynolds, C., & Richmond, B. (1985). *Revised children's manifest anxiety scale*. Western Psychological Services: RCMAS Manual. Los Angeles.

Sampson, R. J. (2012). *Great American city: Chicago and enduring neighborhood effect*. Chicago, IL: The University of Chicago Press.

Sampson, R. J., & Raudenbush, S. (1999). Systematic social observation of public spaces: a new look at disorder in urban neighborhoods. *American Journal of Sociology*, *105*, 603–651.

Selner-O'Hagan, M., Kindlon, D., Buka, S., Raudenbush, S., & Earls, F. (1998). Assessing exposure to violence in urban youth. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, *39*, 215–224.

Shaffer, J., & Ruback, R. (2002). *Violent victimization as a risk factor for violent offending among juveniles*. Washington, DC: Office of Juvenile Justice and Delinquency Prevention.

Skeem, J. L., & Cauffman, E. (2003). Views of the downward extension: comparing the youth version of the psychopathy checklist with the youth psychopathic traits inventory. *Behavioral Sciences & the Law*, *21*, 737–770.

Skeem, J. L., Polaschek, D. L., Patrick, C. J., & Lilienfeld, S. O. (2011). Psychopathic personality bridging the gap between scientific evidence and public policy. *Psychological Science in the Public Interest*, *12*, 95–162.

Vincent, G. M., & Hart, S. D. (2002). Psychopathy in childhood and adolescence: implications for the assessment and management of multi-problem youths. *NATO Science Subseries I Life and Behavioural Sciences*, *324*, 150–163.

Walden, T., Harris, V., Weiss, B., & Catron, T. (1995). *Telling what we feel: self-reports of emotion regulation and control among grade school children*. Indianapolis, IN: Paper presented at the Biennial Meeting of the Society for Research in Child Development.

Wechsler, D. (1999). *Wechsler abbreviated scale of intelligence*. San Antonio: Psychological Corporation.

Weinberger, D., & Schwartz, G. (1990). Distress and restraint as superordinate dimensions of self-reported adjustment: a typological perspective. *Journal of Personality*, *58*, 381–417.

Zhang, L., Welte, J., & Wieczorek, W. (2001). Deviant lifestyle and crime victimization. *Journal of Criminal Justice*, *29*, 133–143.