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Responding to the Trauma That Is Endemic to the Criminal Legal System: Many Opportunities for Juvenile Prevention, Intervention, and Rehabilitation

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Abstract

There is increasing pressure for the juvenile criminal legal system to address trauma; this is in response to advances in the science of trauma and adversity, evidence from interventions showing promising outcomes for juveniles coping with trauma, and development of systemic frameworks for providing trauma-informed care. This review details how exposure to potentially traumatic events can create primary, secondary, and tertiary effects that are relevant to how the criminal legal system engages with juveniles coping with trauma. Associations that could be dismissed on methodological challenges can no longer be ignored as an increasingly sophisticated body of prospective studies replicate previous cross-sectional and retrospective studies, which found a higher prevalence of trauma among system-involved juveniles and show that exposure to potentially traumatic events and trauma symptoms play causal roles in engaging in behaviors that can be classified as criminal offending. Additionally, several examples are used to illustrate how racialized exposure to systemic trauma across generations underlies racialized disparities in persistent criminal offending—overexposure to

potentially traumatic events and underexposure to coping resources. A broad range of developmental and criminological research is drawn upon to provide frameworks for implementing trauma-informed care as a systemic intervention aimed at minimizing retraumatization and using every interaction that juveniles have with the criminal legal system to contribute to recovery and prevent recidivism.

INTRODUCTION

The fields of psychology, psychiatry, and human development have a long history of adding nuance to criminological theories of offending, particularly violent offending (Polaschek 2019). One strand of this work examines trauma and its sequelae of effects, including several systematic reviews of the “canonical body of knowledge” that demonstrate how adversity and trauma are experienced as stress, much of it a subconscious experience, and how this intense and/or chronic activation of the hypothalamic pituitary adrenal axis can impair neurobiological development in ways that have lasting psychological, cognitive, emotional, behavioral, and social consequences (Berger & Sarnyai 2015, Perry et al. 1995, Solomon & Heide 2005).

On the basic foundational association, there is compelling and consistent evidence that trauma has negative effects on all life outcomes, including criminal offending (Tost et al. 2015). It does not matter whether the source of trauma is societal oppression like racism, acute life-threatening events like being stabbed or sexually assaulted, natural disasters like hurricanes and earthquakes, or chronic adversity like food and housing insecurity, traumatic levels of stress that overwhelm one’s ability to cope set off an internal cascade that when left untreated increases the risk of engaging in behaviors that can be categorized as criminal offending (Sapolsky 2004). Malvaso et al. (2022) conducted a systematic review of the associations between trauma and criminal offending across 13 countries. The 124 studies spanned a range of Western cultures such as the United States, Australia, and the Netherlands, with approximately 10% of the studies representing non-Western countries such as Japan, Nigeria, and South Korea. They found that the odds of having experienced at least one adverse or traumatic event were more than 12 times greater for criminal legal system (CLS)-involved youth versus non-system-involved youth.

I focus much of this review on violent offending because that is where there is concentrated research and knowledge that can aid in disrupting the association between trauma and violent offending, which has innumerable benefits for the individual and society. Juveniles—individuals under age 18—are centered because it enables me to emphasize a preventative and rehabilitative lens. This does not imply that adults are not capable of change, but juveniles are much more malleable and can be more easily diverted from one trajectory to another. Additionally, juveniles are mandated to engage with government institutions that have the mission of contributing to their healthy development, and the earlier in the life course interventions occur the higher the return is on investment.

I begin by providing a working definition of trauma and its sequelae of effects and then review the research on the associations between trauma, offending, and the CLS. Because race, and especially antiblackness, is a core organizing factor of the US CLS, the racialized nature of trauma and its association with the CLS are discussed. Racialized Black–White disparities are highlighted not because this is the only comparison that matters but because there is much less evidence regarding the associations between trauma and offending for other racial and ethnic minority groups.

I end this article by discussing the potential for advancing trauma-informed care (TIC) in the juvenile CLS, which is a systemic approach to addressing the fact that the overwhelming majority

of juveniles, more than 90% by some estimates, enter the CLS with histories of trauma exposure (Baglivio et al. 2014). TIC refers to both an evidence-based framework for organizing the routine daily practices that staff members use to engage with juveniles and the implementation of trauma-specific therapeutic interventions based on individual symptom presentation (Ko et al. 2008). I use an inclusive definition for the staff and agencies that make up the juvenile CLS, from police and other law enforcement officers inside and outside of schools, prosecuting and court personnel, staff in community and residential detention centers, and probation and parole officers.

POTENTIALLY TRAUMATIC EVENTS AND THE SUBJECTIVITY OF TRAUMA

To avert misunderstandings, I begin by highlighting that stress itself is not bad; stress that is mild, short-lived, and occurring in the context of a primarily safe developmental context is a core motivating factor in most developmental processes (Folkman 2008). Moderate stress is difficult to define because what is energizing for some can cause trauma in others; moderate stress tends to be intense but time-limited and infrequent. Fear-based stress, such as abuse and assault, that is associated with a loss of physical, psychological, or emotional safety is traumatic and developmentally harmful for every human being (Nemeroff 2004, Sapolsky 2015, Solomon & Heide 2005).

Adverse childhood experiences (ACEs) are defined as events and experiences occurring before age 18 that are capable of causing trauma. The original list of ACEs included seven categories of childhood exposures that centered on child-caregiver maltreatment, such as emotional abuse, physical abuse, and neglect, and household dysfunction such as caregiver substance abuse and incarceration (Felitti et al. 1998). This initial list was based on the experiences of a primarily White middle-class sample and has been expanded to include ACEs experienced by minority and urban samples, such as peer victimization, community violence, and societal oppression (Cronholm et al. 2015).

Witnessing violence can be as traumatic as directly experiencing it (Off. Juv. Justice Delinquency Prev. 2012). Juveniles who witness intimate partner and community violence, without direct victimization, often display symptoms of trauma, including somatic complaints, sleep disturbance, hypervigilance, depression, anxiety, and even PTSD. Therefore, although many may want to limit the definition of victimization to only those who have been directly abused, juveniles growing up witnessing violence in their homes, at school, and in their neighborhoods may be just as traumatized as those who were directly victimized (Webb 2016).

Much of the early work on maltreatment and trauma focused on single incidents of abuse and maltreatment that were severe enough to cause long-term psychological harm (Widom 1989), whereas research on ACEs and adversity focused on harms associated with the accumulation of risk and repeated activation of the stress response system (Felitti et al. 1998). ACEs and maltreatment frameworks come together under an umbrella understanding of trauma that separates potentially traumatic events (PTEs) from trauma: Trauma is not the event itself but the physiological, cognitive, psychological, emotional, behavioral, and social wounds that remain after exposure to a PTE has passed. In this article, ACEs are included under the umbrella term of PTEs.

All this means that it is only when exposure to PTEs is considered along with whether the PTE was experienced as threatening or overwhelming and whether the individual received rehabilitative support is it possible to say whether trauma occurred. Because trauma is subjective, individuals with similar histories of exposure to PTEs evidence different levels of traumatization. However, there is a growing body of evidence around meaningfully predictive patterns and associations between exposure to PTEs, traumatization, offending, and CLS involvement (Malvaso et al. 2022).

PRIMARY, SECONDARY, AND TERTIARY EFFECTS

The primary effects of trauma are first neurobiological dysregulation and then cognitive, psychological, emotional, and behavioral dysregulation (Perry et al. 1995, Solomon & Heide 2005). Numerous studies confirm traces of the physical manifestation of trauma on brain scans and altered activation of the nervous system, such as reduced size and activity of the hippocampus and prefrontal cortex, increased size and activation of the amygdala, and increased dopamine and decreased serotonin secretion (Cross et al. 2017, Danese & Baldwin 2017, Dannlowski et al. 2012, Nemeroff 2004, Perry et al. 1995). Because trauma and prolonged traumatization change one's neurobiology, legal scholars must consider how the CLS is positioned relative to issues of cognitive functioning and assumptions about criminal decision-making (Randall & Haskell 2013, Sapolsky 2004, Soltis et al. 2014).

Research regarding the negative effects of trauma on the prefrontal cortex helps us understand how faulty assumptions about offenders can undermine the effectiveness of deterrence interventions based on rational choice models of offending (Sapolsky 2004). These interventions assume moderate to strong self-regulation and deliberative decision-making capacities and coping skills (Matsueda et al. 2006). Capacities refer to what could be possible given an individual's neurobiological functioning, and coping skills refer to learned behaviors that maximize or undermine latent capacities. People's capacities for self-regulation and deliberative decision-making are reduced by neurobiological dysregulation (Perry et al. 1995, Solomon & Heide 2005). Additionally, growing up in a traumatizing developmental context means a lack of opportunities to learn self-regulation and impulse-regulation skills that facilitate deliberative decision-making. Therefore, unless deterrence interventions also target healing neurobiological harm and/or teaching coping skills, juveniles placed-at-risk will struggle to make the deliberative choices needed to manage engaging in violent behaviors.

The secondary effects of trauma are maladaptive coping behaviors used to manage, distract, and/or suppress untreated primary effects (Littleton et al. 2007, Perry et al. 1995). Many of the primary effects of trauma are psychologically and emotionally painful and cannot be managed without engaging in maladaptive or adaptive coping behaviors (Perry & Dobson 2013, Solomon & Heide 2005). Maladaptive coping can include engagement in risk/stimulation seeking and aggressive behaviors, engagement with antisocial peers, disengagement from school, emotional numbing, and self-medication with nonprescribed substances. Avoidance, suppression, and substance use are ineffective coping strategies; without informal or professional coping supports that enable processing of the traumatic event and associated dysregulated thoughts and feelings, distress often escalates (Littleton et al. 2007, Solomon & Heide 2005). The individual remains highly vulnerable to stimuli that trigger sensory imprinted traumatic memories that make them emotionally and behaviorally volatile.

Prevalence estimates suggest that 50–70% of CLS-involved juveniles have a diagnosable mental health condition (Skowrya & Coccozza 2007), compared to the significantly lower prevalence of approximately 40% of the general juvenile population who meet diagnostic criteria at some point before age 18 (Merikangas et al. 2011). The wide variation in mental health prevalence estimates for system-involved juveniles is due to sampling factors and variations in diagnostic instruments (Malvaso et al. 2022). Sampling factors are, in part, due to how deeply penetrated into the system the sample of juveniles represents (Ford et al. 2007). Many psychologically harmful standard practices, abusive practices, and overall lack of safety associated with the CLS mean that engagement with the system can induce or exacerbate hypervigilance, interpersonal distrust, suspicion, alienation, exploitation, diminished self-worth, PTSD, and other symptoms of mental illness (Haney 2001). One systematic review estimated the pooled prevalence of PTSD among juvenile offenders

as 11.2% (pooled sample = 16,532) (Malvaso et al. 2022), compared to 4.7% among a nationally representative sample of juveniles (McLaughlin et al. 2013).

As internal distress and dysregulation escalate, so too do the behavioral manifestations of trauma, including behaviors that can be categorized as criminal offending. It is the behavioral manifestations of trauma that create opportunities for arrest, leading to tertiary system-induced effects of trauma (DeHart & Moran 2015). Tertiary effects are institutionally mediated and can include direct victimization by CLS staff at all stages of the system and peer victimization associated with being placed in unsafe institutional contexts (Mendel 2011). As noted by Abram et al. (2004), the behavioral manifestations of trauma are often responded to with restraint, confinement, and isolation, which only serve to intensify any existing trauma and other mental health distress. The high level of interpersonal victimization increases exposure to experiencing, witnessing, and perpetrating violence with other juveniles and staff while involved with the CLS (Gaylord-Harden 2020). As juveniles penetrate deeper into the system, tertiary effects include indirect social cohesion harms associated with rupturing caregiver–juvenile and community–juvenile bonds that often do not get repaired upon release. Indirect harms also include impaired ability to transition to successful adult roles because of factors like lack of school credit accumulation while detained (Cavendish 2014, Neely-Barnes & Whitted 2011).

Because the tertiary effects escalate dramatically with sentencing that removes juveniles from their homes and communities and also intensifies their contact with antisocial peers, the juvenile CLS should operate on a principle of anything but residential detention and utilize every form of diversion, home, and community intervention (Keels 2022). After conducting a review of longitudinal studies across a range of Western countries, McAra & McVie (2007, p. 318) concluded that “contact with the [juvenile CLS] and experience of more severe forms of sanctioning, in particular, are as likely to result in enhanced as in diminished offending risk.” They went so far as to state that “contact with the [juvenile CLS] is inherently criminogenic [and traumatogenic]; . . . the deeper a child penetrates the formal system, the less likely he or she is to desist from offending.”

CAUSAL ASSOCIATIONS ON THE PATHWAY TO VIOLENT OFFENDING

Much of the foundational research in this field of study focused on establishing the strength of the association between childhood exposure to PTEs and violent offending (Falshaw et al. 1996, Haapasalo & Pokela 1999, Widom 1989). Additionally, disconnected strands of research that were not in conversation with each other examined associations between various steps in the pathway. Some utilized general population samples to examine the extent to which traumatization and violent behaviors are associated with exposure to PTEs (Polaschek 2019), whereas others used samples of juvenile CLS-involved youth to examine the extent to which trauma symptoms and violent offending are associated with exposure to PTEs (Perez et al. 2018).

Researchers using prospective longitudinal studies, including birth cohort studies, are now examining the factors that mediate and moderate the pathways from exposure to PTEs to violent offending (Braga et al. 2017, Craig et al. 2017b, Malvaso et al. 2016). Methodologically rigorous validation of the association between exhibiting symptoms of trauma and later violent offending comes from a Finnish birth cohort study that enables analysis of sibling fixed effects models (Peltonen et al. 2020). They provide a conservative estimate of the associations because trauma symptoms are measured using hospital discharge records indicating adjustment disorder, PTSD, and acute stress disorder. Additionally, juveniles residing in child welfare system homes are excluded. Temporal order was established by using trauma diagnosis between ages 12 and 14 and violent offending between ages 15 and 17. In the fully adjusted model, having a trauma diagnosis more than tripled the relative risk of being reported to the police for a suspected violent offense,

excluding sexual violence. These results held across sibling models and population-averaged models, “suggesting that the association between trauma and later violence is robust to controls for unobserved familial confounding” (Peltonen et al. 2020, p. 848).

Although experiencing a single PTE can be severe enough to create lasting traumatization, much of the evidence aligns with a dose-response association between the accumulation of PTEs and poor life outcomes (Felitti et al. 1998). People experiencing chronic adversity or repeated exposure to violence do not become resilient or resistant to the trauma it creates, they become increasingly reactive and easily triggered (Gaylord-Harden et al. 2011, McLaughlin et al. 2010). Graf et al.’s (2021, p. 4) review of 11 studies found “compelling and consistent epidemiological evidence for a graded relationship between [PTEs] and [CLS] contact across several outcomes including juvenile arrest, sexual offending, juvenile reoffending, early adult felony charges, and adult incarceration.” This dose-response association was also found in a study of a nationally representative sample of Black people in the United States that examined exposure to PTEs, PTSD, and incarceration (Jäggi et al. 2016). They found that those with exposure to two or three PTEs had 1.73 higher odds of juvenile incarceration, and those with four or more PTEs had 4.86 higher odds. Additionally, among those with exposure to at least one PTE, meeting the diagnostic criteria for PTSD placed them at further risk (3.74 higher odds) for juvenile incarceration.

The salient role of trauma in increasing risk of contact with the CLS is illustrated in the outcomes for homeless juveniles (Keeshin & Campbell 2011). Homeless juveniles have high rates of engaging in delinquency and substance use behaviors that place them at risk for CLS contact (Kaufman & Widom 1999). However, even among this high-risk group, trauma, specifically childhood physical abuse, stands out as a significant predictor of incarceration even after accounting for level of substance use, interactions with deviant peer groups, and engagement in survival behaviors on the streets (Yoder et al. 2014). Homeless juveniles with a history of physical abuse were nearly twice as likely to be arrested and jailed compared to their nonabused counterparts.

A growing body of research highlights disruptions in emotion regulation, emotional numbing, anger, and impulse control as important primary effects of trauma that may mediate the association between trauma and violent offending (Maschi et al. 2008). For some juveniles coping with trauma, their violent behaviors result from neurobiologically triggered impulsive reactions to emotional agitation that are engaged before the rational decision-making areas of the brain can process the experience and inhibit action (Dannowski et al. 2012). Each individual’s neurobiological, including temperamental, vulnerabilities figure prominently in determining the effects of exposure to PTEs (Solomon & Heide 2005). The effects of neurobiological sensitivity to one’s ecological context can occur through two stress vulnerability pathways: genetic neurobiological sensitivity to ecological context and compromised neurobiological functioning as a result of chronic trauma.

In the first pathway, genetic neurobiological sensitivity to ecological context is based on evidence showing that some juveniles are born with higher levels of responsivity to both the promotive and deleterious aspects of the contexts in which they live (Boyce et al. 2012). In developmentally adverse environments, sensitive juveniles’ overreactive neurobiological stress arousal systems result in maladaptive cognitive, emotional, and behavioral functioning that over time solidifies into anxious, impulsive, and externalizing patterns of behavior. These juveniles are also sensitive to positive developmental input and respond well to intervention (Ellis et al. 2011).

In the second pathway, compromised neurobiological functioning of the stress response system begins after birth, initiated by chronic exposure to traumatic stressors that become biologically embedded as changed neurobiological sensitivity to one’s environment (Dannowski et al. 2013). These neurobiological changes include hypervigilance and bias to threat and compromised ability to experience, tolerate, and manage emotional arousal (Perry 2009). Juveniles who have been

neurobiologically changed can be supported in resetting their neurobiological stress response systems to enable more adaptive coping (Perry & Dobson 2013).

Agnew's cumulative strain theory of violent offending may be particularly relevant for understanding these stress-mediated pathways (Agnew 1992, 2001). He argues that growing up in a chronically stressful environment (strain) compromises self-regulation and frustration tolerance, which is exacerbated by intense stressors, adversity, or exposure to violence that creates emotional dysregulation that is behaviorally expressed through engagement in violence. Prospective longitudinal research that collects information about ongoing life experiences, trauma symptoms, and details of events and perceptions surrounding incidents of violent offending is needed to better understand the mediating mechanisms and targets for intervention. This type of data also enables researchers to examine the extent to which cumulative strain and other developmental life-course models of criminology each explain a subset of what are likely multiple pathways from exposure to PTEs to criminal offending (McGee & Farrington 2016).

At first glance there is a clear temporal order in which childhood exposure to PTEs precedes trauma and traumatization; the behavioral manifestations of delinquency and offending then emerge before escalating to arrest and engagement with the CLS. However, this temporal order is quickly complicated by the possibility that CLS involvement in the parent generation may be the causal agent of trauma among juveniles (Craig et al. 2021). Additionally, for some juveniles, especially Black juveniles, indirect and direct policing trauma, such as stop-and-frisk aggressive policing, may occur before offending (Brunson & Miller 2006). Research is needed to understand the ways that the CLS may be the instigating source of trauma that initiates the pathway to offending and penetration into the CLS, especially for low-income, racial, and ethnic minority juveniles (cummings et al. 2022).

UNHEALED TRAUMA AND RECIDIVISM

For research on trauma to have the greatest influence on policy and practice it must also aid in understanding recidivism—approximately 76% of juveniles are arrested again within three years and 84% within five years (Counc. State Gov. Justice Cent. 2014). Research provides evidence for a dose-response association between the accumulation of childhood exposure to PTEs and recidivism (Craig et al. 2017a) and between serious incidents of child maltreatment and recidivism (van der Put & de Ruiter 2016). Wolff et al. (2017) found that juveniles with higher levels of exposure to PTEs had shorter times between instances of recidivism, for the full sample and demographic subgroups. Similarly, Cho & Lee (2022) tracked first-time adjudicated juvenile offenders for 3 years and found that approximately 33% of those with a history of maltreatment had more than three new adjudicated offenses compared with 25% of their matched sample without maltreatment.

Theories regarding the association between trauma and recidivism can be integrated into the Risk–Need–Responsivity framework that is widely used for identifying criminogenic needs that are predictive of recidivism (Andrews et al. 1990, Bonta & Andrews 2007). Trauma researchers point to the specific responsivity principle of the Risk–Need–Responsivity framework, which states that interventions must consider individual characteristics and circumstances that could enhance the efficacy of interventions treating criminogenic needs (Vitopoulos et al. 2019). Trauma researchers view most criminogenic recidivism risk factors as secondary effects of trauma and believe that interventions targeting these risk factors may be undermined because the primary effects of trauma are left untreated (Fritzson et al. 2021). Vitopoulos et al. (2019) examined juvenile recidivism and found that child maltreatment emerges as a stronger predictor of recidivism than any of the domains in an established measure of juvenile criminogenic needs. They argue that interventions that do not screen for and attend to the emotional and mental health effects of

trauma “may miss the mark by addressing an outcome rather than a core disturbance” (Vitopoulos et al. 2019, p. 361).

Fox et al. (2015) suggest that because of the consistently higher likelihood of violent (re)offending among juveniles who were abused and neglected, exposure to PTEs and trauma symptoms could be used to identify those placed-at-risk for becoming the 10% of juvenile offenders who commit more than 50% of all serious violent offenses. Their examination of 22,575 CLS-involved youth found that each additional childhood PTE was associated with an increased likelihood of exhibiting aggressive and severe criminal behavior, controlling for demographic and criminological risk factors. However, because more than two-thirds of juveniles exposed to PTEs and victimization never commit a violent offense (Keels 2022) and more than a third of incarcerated juveniles with trauma histories do not reoffend (Fox et al. 2015), trauma screenings should only be used for the preventative provision of community-based supports.

Preventative provision of mental health and coping supports are cost-effective and beneficial to the individual and society. This can include social and emotional skills training programs delivered during or after school that aim to reach a broad range of juveniles residing in communities with high-risk characteristics (Kingston et al. 2021) or mental health services occurring in community settings that prioritize reaching individuals placed-at-risk for offending such as those in the child welfare system, especially those residing in out-of-home care (Eddy et al. 2004). Nationally, the direct cost of incarcerating juveniles is estimated at approximately \$401 per day; a cost that pales in comparison to the additional short- and long-term individual and societal costs that result from victimization and criminal learning experienced during confinement (Petteruti et al. 2014). Even though evaluations routinely show positive financial returns from investing in preventative interventions, the current system of family, community, and school interventions repeatedly fails most juveniles placed-at-risk during the years when prevention and intervention would be most effective (Greenwood 2008).

TRAUMA AND DEVELOPMENTAL LIFE-COURSE CRIMINOLOGY

Theories regarding the causal role that trauma plays in the pathways to violent offending align with developmental life-course theories of criminology, which argue that an individual's life history of experiences before any given incident of criminal offending matters in addition to the contextual factors surrounding the incident (McGee & Farrington 2016). Developmental life-course theories can be made trauma-informed by attending to the ways that intense and/or chronic activation of the stress response system, especially fear-based stress, contributes to the development and maintenance of engagement in violent behaviors.

Regarding the various developmental life-course theories of criminology, Loeber and colleagues (2008) argue for a developmental pathways model that highlights the accumulation of risk and promotive factors over the life course. They propose that the type and timing of exposure to risk and promotive factors set juveniles down different pathways in which persistent problem behaviors escalate to criminal offending. Hawkins and Catalano and colleagues argue for a social development model in which juveniles grow up in environments that teach a dominance of prosocial or antisocial behaviors (Catalano & Hawkins 1996, Hawkins & Weis 2015). They integrate social control, social learning, and differential association theories and argue that the content and context of socialization place juveniles at risk on pathways to criminal offending. Sampson & Laub (1990, 1992) argue for an age-graded social control model that incorporates agency and criminogenic environments along with supervision and social support. They believe that these factors create turning points in juveniles' lives that determine desisting versus persisting in offending.

Trauma frameworks are consistent with developmental life-course criminology theories because they emphasize that criminal offending is determined by the combination of individual characteristics, accumulation of risk and protective experiences, and immediate situational factors (Fox et al. 2015; Malvaso et al. 2016, 2022). The associations between trauma and offending are believed to be mediated through complex pathways that begin with exposure to PTEs interacting with individual vulnerabilities that are then intensified or ameliorated through contextual risk and protective factors (Braga et al. 2017, Malvaso et al. 2022). Contextual factors, such as buffering social supports or therapeutic interventions, mediate the development and persistence of traumatization, which affects engagement in maladaptive coping behaviors that create opportunities for engagement in violent offending (Day et al. 2013, Herrenkohl et al. 2003, Voisin & Elsaesser 2013).

Trauma frameworks are also consistent with the age-graded aspects of developmental life-course criminology theories, such as Thornberry and colleagues' interactional model. They highlight reciprocal causation pathways where antisocial behavior is responded to with negative responses from parents, peers, and other adults, which creates social isolation and fosters school disengagement that then increases the likelihood of future antisocial behavior (Thornberry 1987, Thornberry et al. 1994). It is age-graded in that antisocial behavior beginning before age 6 is believed to be caused by neuropsychological deficit and challenging temperament, parenting deficits, and the stressors of structural adversity; onset between ages 6 and 12 is primarily due to lack of parental control, adversity, and neighborhood challenges; and onset after age 12 is primarily caused by lack of parental control coupled with membership in deviant social and gang networks.

All trauma frameworks are age-graded in that they argue that when trauma, especially chronic trauma, occurs at earlier ages the symptoms of trauma and mental illness are more severe and there is a higher likelihood of meeting the diagnostic criteria for mental disorders (Finkelhor et al. 2011). Widom's (1989) pioneering study of 900 individuals who experienced abuse before age 11 illustrates this in the association between early trauma and antisocial behavior and increased risk of arrest. Consistent with this, research shows that the younger juveniles are when they commit a violent offense, the more likely they are to report early life exposure to PTEs (Baglivio et al. 2015).

The developmental life-course criminology theories listed above are not mutually exclusive, and I opt for a developmental and ecological model of offending (Keels 2022). This integrates core elements of several developmental life-course criminology theories, considers exposure to PTEs as an important ecological factor, prioritizes the effects of unhealed trauma as a mediating factor in the pathways to criminal offending, and includes a critical understanding of racial disparities in overexposure to PTEs and underexposure to coping supports. Additionally, I highlight racial disparities in tertiary CLS trauma as an important factor that can increase the likelihood that racial and ethnic minority juveniles shift from an adolescent limited to a persistent criminal career (Moffitt 2017).

THE STEPS IN THE PATHWAYS TO OFFENDING ARE RACIALIZED

The US Department of Justice's Office of Juvenile Justice and Delinquency Prevention requires that all states and territories track processing at nine decision points: arrest, referral to court, secure detention, diversion, petition, adjudication, probation, secure confinement, and transfer to adult court. Analysis of this data provides evidence of racial disparities at each decision point, for Black, Indigenous, and Latinx juveniles in comparison to White juveniles (Off. Juv. Justice Delinquency Prev. 2022). This is not an exhaustive list of decision points and reviews of the literature find that racial disparities accumulate and become more pronounced as juveniles penetrate deeper into the system (Engen et al. 2002, Spinney et al. 2018).

A full understanding of racial disproportionality in the pathways to offending is incomplete without attending to the fact that racism is traumatogenic (Carter 2007, Sullaway 2004). Berger & Sarnyai (2015) provide a review of the research on the neurobiological pathways by which racial discrimination—experienced as chronic activation of the stress system—affects mental health. Furthermore, the intersection of racism and the CLS is such that the CLS is especially traumatogenic for members of marginalized racial groups in the United States, irrespective of whether they have committed crimes (Bryant-Davis et al. 2017, Domínguez et al. 2022).

The tragic murder of Tyre Nichols by five Black police officers that occurred as I wrote this article was highlighted by many scholars as one of the clearest illustrations of the fact that it is not race but antiblack racism, including internalized racism, in the CLS that matters. Incidents of police killings of Black people are particularly traumatizing because they spread generalized fear-based stress and chronic loss of feelings of safety (Bor et al. 2018, Sewell et al. 2021, Smith Lee & Robinson 2019, Yang et al. 2021). Black people in the United States are three times more likely to be killed by police than similarly situated White people, and those killed are twice as likely to be unarmed as White people (GBD 2019 Police Violence US Subnatl. Collab. 2021, Schwartz & Jahn 2020). As cummings et al. (2022, p. 902) detail through compelling case studies, “These are not numbers or abstractions; these are real people whose trauma generates unimaginable suffering.”

cummings and colleagues (2022) detail many PTEs that fall under the umbrella of “the trauma of growing up Black in America,” which includes the trauma of experiencing, witnessing, and learning about racialized police brutality. This is a significant societal source of trauma that can play a causal role in the pathways to offending because of the resulting psychological and behavioral dysregulation that creates opportunities for CLS contact—quickly becoming a recursive cycle (Abt 2019, Lanius et al. 2010). The broader practice of aggressive policing, such as stop-and-frisk and home raids, that is concentrated in minority communities has been shown to spread trauma throughout the community and elevate their risk for future juvenile CLS contact (Domínguez et al. 2022, Geller et al. 2014, Lopez et al. 2018, Sewell et al. 2016). The traumatic effects of CLS abuse are widely propagated because bias, brutality, and injustice perpetrated against a given social identity affect members of the population “for whom this identity is salient by evoking feelings of fear, helplessness, and shock as well as anger and a desire for retaliation” (Lannert 2015, p. 291).

Despite being placed at disproportionate risk for engaging in violent offending, research suggests that Black–White disparities in arrest for violent offenses are not driven by the fraction of each racial group that ever offends but are instead due to (a) a higher fraction of highly vulnerable Black juveniles who engage in persistent offending (Piquero 2015) and (b) higher arrest of Black versus White juveniles despite similar rates of self-reported offending (Hawkins et al. 2000). Regarding the racial disproportionality in juveniles who engage in persistent violent offending, there is an associated disproportionality in overexposure to PTEs and underexposure to coping resources (Hawkins et al. 2000). The racial disproportionality in exposure to PTEs is staggering: Approximately 1 in 5 Black juveniles experience confirmed maltreatment compared to 1 in 10 White juveniles (Wildeman et al. 2014). Additionally, the sequelae of primary, secondary, and tertiary effects disproportionately accrue to Black juveniles, making it harder for them to mature out of offending by obtaining the educational and professional credentials that are predictive of desistance (Haynie et al. 2008).

Regarding the significantly larger fraction of Black juveniles ever arrested for a violent offense, Sohoni et al.’s (2021) meta-analysis of studies from 1980 to 2018 that estimated the association between self-reported measures of racial identification and self-reported offending found that nearly all correlations were below 0.10, across a broad range of violent and nonviolent crimes. What is

significantly different across race is differential policing coupled with disproportionate prosecution (cummings et al. 2022, Hinton & Cook 2021). Focusing on differential policing as the first point of contact that initiates a system that ends with large disparities in the decision to incarcerate, research shows higher levels of police surveillance and patrol, stopping and searching, and use of aggressive policing in neighborhoods with higher percentages of Black residents (Bishop & Leiber 2011, Poe-Yamagata 2009).

In a previous article, I highlighted the role of racialized historical trauma in the intergenerational transmission of violence among Black people in the United States (Keels 2022); here, I highlight the role of racialized CLS-induced trauma in intergenerational transmission (Alexander 2012, Hinton & Cook 2021, Thompson 2010). This intergenerational understanding places disproportionate CLS surveillance in minority communities, which, along with mass incarceration and aggressive policing such as the War on Drugs occurring among the adult generation, is the initiating disproportionality that places Black juveniles at risk. One example of historical incarceration disparities that disproportionately transmit trauma to the next generation is that in mid-1970s Pennsylvania, Black people constituted more than 62% of prisoners in the state's jails but were less than 10% of the population (Hinton & Cook 2021).

From this intergenerational perspective, minimizing CLS-induced traumas in the current generation is an upstream intervention that can reduce exposure to PTEs in the next generation (Am. Public Health Assoc. 2018, Boyd et al. 2016, Craig et al. 2021). This intergenerational perspective places the CLS “at the epicenter of the current childhood trauma crisis” (cummings et al. 2022, p. 859), especially when considered along with the harms of the child welfare system that juveniles are thrust into when their parents and caregivers experience incarceration for drug and other nonviolent offenses (Arditti 2012).

The harmful effects of child welfare systems are detailed by McAra & McVie (2022) using data from their 20-year longitudinal study of a cohort of Edinburgh high school students. They describe a common pathway to offending that begins with juveniles being referred to child welfare systems on care and protection grounds, spending years in different forms of foster and residential care, experiencing adversity and victimization in that system, and over time transitioning from “being viewed as a victim of neglect or abuse into being viewed as an offender” (McAra & McVie 2022, p. 30).

This issue of system crossover juveniles figures prominently in racial disparities in both trauma and violent offending, particularly the ways that the child welfare system, which centers “care” in its mission, places juveniles at risk for contact with the CLS. Juveniles harmed by the failures of one government system are punished by another (Skowrya & Cocozza 2007). Approximately 40% of CLS-involved juveniles are simultaneously in the child welfare system (Herz et al. 2010). Black juveniles in the United States are overrepresented in foster care—one of the most trauma-inducing aspects of child welfare system involvement (Greeson et al. 2011). In 2021, Black juveniles constituted 23% of the foster care population but only 14% of the total child population; Latinx and White juveniles were underrepresented by 3 percentage points and 5 percentage points, respectively (Kids Count Data Cent. 2023).

Johnson (2018) argues that juveniles' social location is highly predictive of (a) the quality of their developmental environments and therefore their level of exposure to PTEs, (b) how their behavioral symptoms of distress are interpreted and managed, and (c) whether they receive supports and resources that foster healthy adaptation and coping. His analysis of the associations between race, trauma, and arrest for violent offending among a cohort of 3,284 CLS-involved juveniles ages 12–16 found a strong main effect: Those who experienced polyvictimization (three or more types of traumas) were 1.7–3 times more likely to have a violent felony arrest than those who experienced only one traumatic event. Several researchers have found polyvictimization to

be particularly important for increasing the likelihood of arrest for violent offending (Fox et al. 2015, Piquero et al. 2003).

In addition to the main effect of polyvictimization, Johnson's findings were racialized in that Black juveniles were 1.5 times more likely than White juveniles to have experienced 3 types of PTEs and as the number of PTEs accumulated, the Black–White disparity in risk for violent felony arrest widened. He argues for a critical and racialized trauma and offending model by placing trauma and its developmental sequelae as “a mechanism by which ascriptive inequality occurs and social positions remain relatively consistent across generations” (Johnson 2018, p. 1439). He lists race and poverty and especially the intersection of the two as key determinants of juveniles' social location that intensifies both exposure to and the negative effects of PTEs.

Gang membership is an illustrative example of the nexus of systemic racism, trauma, and CLS harms because it both mediates the pathway from exposure to PTEs to violent offending and moderates the strength of the association between exposure to PTEs and likelihood of CLS engagement (Pyrooz et al. 2014, Quinn et al. 2017). Black and Latinx juveniles are disproportionately exposed to precursor traumatic experiences that increase the likelihood of gang involvement and are more likely to live in contexts that reinforce gang membership; gang membership then increases the likelihood of experiencing, perpetrating, and being arrested for violent offenses and then being prosecuted with enhanced charges (Fowler et al. 2009, Howell & Egley 2005).

For many juveniles, gang membership begins as a maladaptive coping strategy aimed at self-protection against victimization—ways of thinking and being that are effective in the short-term but ineffective and often harmful in the long-term (Berg & Loeber 2011, Rich & Grey 2005, Stewart et al. 2006). Despite clear recognition of the high level of community violence in high-poverty urban neighborhoods, the CLS considers gang membership as an opportunistic choice rather than as a constrained “choice” coping strategy. Developmental psychologist Patricia Kerig and colleagues (2013, p. 786) provide a different perspective: “For [American] youth growing up in violent and gun-ridden inner-city environments, giving up gang life might seem to be the equivalent of being individually disarmed in a still heavily militarized zone.”

Many of the violent behaviors associated with gang membership are particularly traumatizing because they fall under the umbrella of compelled/forced violence, which creates perpetration-induced trauma (Kerig et al. 2016). Gang members display post-traumatic stress symptoms associated with being compelled to perpetrate violence that goes against one's personal moral code as part of initiation rights and ongoing gang-related activities (Kerig et al. 2016, MacNair 2002, Pyrooz et al. 2014). This leads some to conceptualize gang violence as simultaneous perpetration and victimization (Kerig & Wainryb 2013).

Consistent with this, gang membership stands out as a significant predictor of symptoms of trauma and post-traumatic stress among male and female youth in juvenile detention (Kerig et al. 2016). Several studies show that gang membership increases the likelihood of meeting the diagnostic criteria for PTSD and other mental health disorders (Beresford & Wood 2016). Kerig et al. (2016) also found that gang members reported significantly higher levels of post-traumatic emotional numbing and dissociating compared to detained juveniles without gang membership. These two trauma symptoms are strong predictors of violent offending (Maschi et al. 2008, Mozley et al. 2018).

COMPLEX/DEVELOPMENTAL TRAUMA AND EMOTIONAL (DYS)REGULATION

In the case of juveniles struggling to cope with trauma, is their engagement in violent offending an act of willful defiance of laws or calculated instrumental gain, or has their neurohormonal

development been disrupted in ways that constrain emotion regulation and deliberative decision-making? The answer to these questions informs whether their path to rehabilitation lies in increasing their awareness and experience of being caught and the severity of punishment (Matsueda et al. 2006) or in providing social and therapeutic supports that can strengthen the aspects of their neurobiological system harmed by trauma and their compensatory coping strategies (Perry & Dobson 2013). Failing to assess, recognize, and appropriately respond to trauma-related behaviors creates misattributions about the cause, meaning, and motivation of behavior and consequent misguided CLS responses that can intensify rather than ameliorate maladaptive behaviors (Thordarson & Rector 2020).

Consider juveniles plagued by hypervigilance who are easily triggered by trauma cues that activate the amygdala, initiating an array of subcortical brain activity that stimulates breathing, cardiovascular, and hormonal systems that ready the body for instinctive and learned defensive behaviors (Moreland & Ressler 2021). Because these reactive behaviors are not the result of deliberative decision-making, they are resistant to deterrence-based interventions. This resistance is most evident among those suffering complex/developmental trauma, which is defined as the foundational disruption of one's ability to form interpersonal attachments and modulate one's thoughts, feelings, and behaviors (Ford et al. 2012, 2013; van der Kolk 2009). Consistent with this, analysis of national data revealed that more than 60% of juveniles with recent system involvement reported that their first exposure to PTEs occurred before age 5, and more than 30% reported chronic exposure to PTEs (Dierkhising et al. 2013).

Complex/developmental trauma is highest among juveniles exposed to polyvictimization, including victimization such as assault, family and community violence, and physical or sexual abuse, and toxic stressors such as chronic poverty and housing instability (Finkelhor et al. 2011, Voisin & Elsaesser 2013). Because they experienced several forms of victimization, often from different categories of people and in different spaces, they develop generalized distrust, anger, and aggressive behaviors that dramatically elevate their risk for contact with the CLS.

Juveniles attempting to cope with complex/developmental trauma tend to have a high level of emotional dysregulation (Perry et al. 1995, van der Kolk & Fisler 1995), which is the capacity to tolerate and self-regulate strong (especially negative) affect, without resorting to avoidance strategies such as dissociation, substance abuse, or other maladaptive anxiety-reducing behaviors (Briere et al. 2010). This mediated pathway through emotion dysregulation is believed to be one of the most direct pathways from trauma to violent offending (Ford et al. 2012, Rasche et al. 2016). Brown et al. (2021) describe this pathway as being mediated by diminished arousal modulation coupled with hyperarousal that results in reactive episodes of anger and assaultive behaviors that are criminalized. Reactive aggression occurs in response to a perceived provocation or threat and is highly correlated with impulse control; in comparison, proactive aggression is unprovoked and used for instrumental gain (Vitaro et al. 1998). Reactive aggression appears to be higher among juveniles who have experienced traumatic stressors (Marsee 2008).

The extent to which system-involved juveniles are suffering from complex/developmental trauma is an important consideration because higher-order thinking builds on the healthy development of lower-order emotion processing, and early trauma, especially chronic trauma, impairs both lower- and higher-order systems and reduces the individual's capacity to regulate subcortically driven fear-based reactions (Solomon & Heide 2005, van der Kolk & Fisler 1995). The source of fear does not need to be in the immediate situation, it may be a triggered fear memory, which is experienced with just as much fear as if it were happening in the moment. This includes fight that can manifest as emotional and behavioral outbursts, freeze that can manifest as self-medicating with substances, or flee that can manifest as running away from police; all are actions that increase the likelihood of CLS engagement (Moreland & Ressler 2021).

TRAUMA-INFORMED CARE

TIC is a systemic and systematic intervention in which the aim is first to minimize retraumatization and then use interactions that juveniles have with the CLS to contribute to recovery and prevent recidivism (Yoder et al. 2017). TIC in the CLS aligns with the principles of the sequential intercept model for reducing the criminalization of mental illness (Heilbrun et al. 2017). Advocates for the sequential intercept model argue that even though mentally ill individuals are more likely to display behaviors that increase their likelihood of police contact, they should not experience disproportionately higher rates of arrest, prosecution, and incarceration—they should experience care (Munetz & Griffin 2006). Not all mentally ill individuals have trauma as the root cause, but trauma quickly becomes part of the escalation of mental health distress. Reducing CLS penetration is important because traumatized and mentally ill juveniles in detention are often subject to trauma-inducing control practices that escalate their symptoms of distress (Webb 2016).

The sequential intercept model identifies six points of interception where CLS staff can change policies, practices, and interventions to prevent mentally ill individuals from penetrating deeper into the system: (a) preventative community resources, (b) law enforcement and emergency services, (c) initial detention and hearings, (d) jails, courts, and forensic evaluations, (e) reentry from jails, prisons, and forensic hospitals, and (f) community corrections (Comartin et al. 2021, Heilbrun et al. 2017, Munetz & Griffin 2006). This model includes a range of implementation strategies for repeated screening and response to screening that can be taken at each stage to catch and divert mentally ill individuals who were missed at earlier stages.

Branson et al.'s (2017) systematic review of published articles that attempt to detail what constitutes TIC in the juvenile CLS revealed that there is consensus around 10 core domains of practice, with the caveat that research is needed to identify evidence-based policies and practices that would enable implementation of each domain. There are three system-level domains: policies and procedures, cross-system collaboration, and quality assurance and evaluation. There are four agency context domains: policies, procedures, and leadership; workforce development and support; promoting a safe agency environment; and youth and family engagement. And there are three clinical services domains: screening and assessment, services and interventions, and cultural competence.

TIC must happen at every level of the system, including interactions with police officers, especially given the deadly consequences of a trauma-induced fight or flight response resulting from fear of the police (Pickett et al. 2022, Smith Lee & Robinson 2019). Police officers have broad discretion regarding how they engage with citizens, and research shows that race and neighborhood characteristics matter in determining which laws they enforce and how they are enforced (Crosby 2016). Once juveniles are arrested, prosecutors and the court system have huge impacts in determining the trajectories of their lives (Howard & Tener 2008). This discretion is most significant for first-time offenders and can place them on either a rehabilitative pathway by prioritizing diversion, community placement, and mental health treatment or a criminal career pathway by prioritizing residential detention and transfer to adult courts (Redding 2008).

When applying TIC and the sequential intercept model to juveniles, special attention must be given to schools and how they can maximize prevention and diversion. Regarding preventative provision of mental health supports, schools are the primary place where mental illness among juveniles is detected and reported. Only about 25% of American juveniles with diagnosed mental health illness receive services, and approximately 75% of them receive those services through their schools (Masia-Warner et al. 2006). Regarding prearrest diversion, the school-to-prison pipeline can be constricted by ensuring that there are identified alternatives to arrest when officers are called to respond to incidents at school. For example, the Philadelphia Police School Diversion

Program initiated in 2014 is often cited as a successful example. School-based arrests dropped by 54% in the first year and dropped by 84% by the end of year 5; only about 27% of diverted juveniles experienced a recidivism arrest within 2 years of their initiating incident (Goldstein et al. 2021).

There is a growing body of research demonstrating that the juvenile CLS can become less traumatogenic and that mental health care delivered in various settings associated with the juvenile CLS can reduce mental health symptoms, diagnosed disorders, and recidivism (Underwood & Washington 2016). There is also promising evidence that early screening and identification of symptoms of mental health distress, coupled with the provision of services when juveniles experience their first contact with courts, are associated with a significant decline in mental health distress (Burke et al. 2015). Burke and colleagues found that although 74% of their sample of juveniles (average 13.6 years of age) awaiting a juvenile court hearing met the criteria for at least one psychiatric disorder and 50% met the criteria for two disorders, none had received any previous mental health services. The provision of mental health services was associated with a significant decline in the percentage that met the criteria for at least one disorder.

Several systematic reviews and meta-analyses have examined the effectiveness of trauma-specific interventions for juveniles without CLS involvement (Cohen & Mannarino 2015, de Arellano et al. 2014) and for those with CLS involvement (Ford et al. 2016, Han et al. 2021, Zettler 2021). The two most recent systematic reviews examined experimental and quasi-experimental studies targeting CLS-involved juveniles and found small to null effects regarding the reduction of mental health symptoms and null effects on engagement in delinquency (Olaghere et al. 2021, Rhoden et al. 2019). These reviews coalesce around the efficacy of eye movement desensitization and reprocessing therapy and cognitive behavior therapy (CBT) as promising categories of interventions, with the strongest evidence for trauma-focused CBT (Jensen et al. 2017). Olaghere and colleagues (2021, p. 1272) speculate that the small effect sizes may be due to the need for “sustained engagement [with treatment] and follow-up through a youth’s life-course within and beyond the [CLS].” These reviews find more promising effects among studies that examine the effectiveness of proactively intervening with juveniles placed-at-risk for CLS contact, which highlights the importance of intervening before tertiary system-induced traumas begin to accumulate.

To minimize the traumatogenic nature of CLS contact, particular attention must be paid to providing TIC for juveniles whose CLS contact results in residential detention (Mendel 2011). One study of TIC found that training all staff to utilize universal trauma precautions coupled with trauma-focused mental health interventions demonstrated effectiveness in both reducing staff use of traumatizing behavior management practices such as seclusion and restraint and decreasing symptoms of psychological distress among juveniles (Marrow et al. 2012). Similarly, Baetz et al. (2021) found that a TIC intervention implemented at a secure juvenile detention facility, which included coping skills training for youth and training for staff, was associated with a significant reduction in violent incidents.

Equity must be at the forefront of the implementation of TIC in the CLS, otherwise advancements in its use may only serve to widen racial inequities given that Black and other minority juveniles are currently less likely to receive existing rehabilitative services (Craig et al. 2017b, Fader et al. 2014). Spinney et al.’s (2016) systematic review of 26 studies examining racial disparities among referrals to mental health and substance misuse services found that the overwhelming majority of studies showed at least some race effects in the decision to refer for services. They concluded that factors other than the degree of mental health need often predict who gets services. Additionally, the most consistent pattern of racial disparities in referral for mental health or substance abuse services was found among studies that included statistical controls for mental health or substance use diagnosis or need (Baglivio et al. 2017). Spinney and colleagues (2016)

also note that racial disparities in service receipt continue after release based on studies that trace juveniles for up to 3 years after release from detention facilities.

PROTECTIVE FACTORS

I have focused on the ways that exposure to PTEs places juveniles at risk for experiencing trauma and the sequelae of primary, secondary, and tertiary effects that occur when trauma remains unhealed. However, because there is often an indirect association between describing a problem and identifying effective solutions, it is critical to focus more research on identifying protective factors and interventions that are associated with low probability of offending among those exposed to PTEs (Novak & Fagan 2022). Such research is likely to identify several intervention levers because violence is a learned behavior that is mediated and moderated (reinforced and maintained) by numerous ecological factors (Malvaso et al. 2016, McGee & Farrington 2016, Ttofi et al. 2016).

In a previous article, I highlighted the need to utilize “the wealth of research detailing the host of risk and protective factors that determine the likelihood that any given child growing up with traumatic levels of adversity will become an adolescent with violent patterns of behavior” (Keels 2022, p. 67). In that article, I listed evidence-based interventions for intervening at numerous points across the life course to interrupt the pathways from PTEs to violent offending. Juveniles’ school-going years provide an extended period of time during which societal institutions (schools) and government-funded socializing agents (educators) have unrestricted access to identify and be responsive to students struggling to cope with trauma.

School belonging, engagement, and achievement repeatedly emerge as protective factors that increase the likelihood of positive outcomes in addition to reducing the likelihood of negative outcomes among juveniles exposed to PTEs (Lösel & Farrington 2012, Ttofi et al. 2016, Voisin & Elsaesser 2013). For example, Sprott et al. (2005) found that among juveniles ages 10–11 who showed early signs of aggressive behaviors or had high levels of exposure to PTEs, those with strong school bonds were significantly less likely to engage in violent offending at ages 12–13, compared to those with weak school bonds. Essentially, for juveniles on a path to more serious offending, strong school bonds at Time 1 are associated with slowing and possibly diverting them away from greater escalation at Time 2.

The challenge is that juveniles coping with trauma are significantly less likely to have strong school bonds or experience academic success. Researchers believe that this is because the behavioral manifestations of trauma are responded to with disciplinary sanctioning rather than with developmental supports (Voisin & Elsaesser 2013). Blodgett & Lanigan (2018) found that students’ levels of adversity, based on teacher report of known exposure to a range of serious PTEs, were associated with a dose-response relationship with a range of behavioral and academic challenges at school. A critical finding was that most students with known exposure to PTEs were never referred to or received supportive services.

For juveniles who experience periods of residential detention, their mandated incarcerated schooling experiences often hamper the likelihood of desistance by stalling learning and the accumulation of school credits; although research shows that it can act as a turning point and increase the likelihood of desistance (Blomberg et al. 2012). Jäggi et al. (2020) used data from the multisite Pathways to Desistance study to examine the role of incarcerated schooling in decreasing delinquency. They found that, when accounting for both, attachment, and not grades, was a significant predictor of reengagement with schooling and with decreased delinquency, 12 months after release. These analyses accounted for numerous background and baseline factors. Essentially, juveniles’ schooling experiences represent a government-funded institutionally mediated factor that can either reinforce or disrupt the association between exposure to PTEs and offending.

CONCLUSION

The individual studies, systematic reviews, and meta-analyses discussed in this review article represent a substantial body of evidence supporting the understanding that trauma is causally linked to engaging in behaviors that can be categorized as violent offending. There is the caveat that much of the existing research does not include comparison groups of nonoffending juveniles, necessitating proceeding with caution as more evidence is gathered regarding mediating and moderating co-occurring risk factors and tertiary CLS trauma (Malvaso et al. 2022). That said, I believe that the pressing question is not whether but how trauma is relevant to the ways that all branches of the CLS engage with juveniles and hold them accountable (Neller & Fabian 2006).

To the extent that minimizing the escalation of offending behaviors and diverting juveniles away from persistent criminal careers are important aims of the juvenile CLS, there are numerous stages in the system where a trauma-informed decision-making framework can be used to make systemic and systematic changes in policies and protocols. Staff at all stages of the process can prioritize problem-solving courts and all other available opportunities to divert juveniles to rehabilitation-oriented programs (Summersett Williams et al. 2022). One review of studies of mental health treatment courts found that although the evidence is nascent, they appear to be a promising diversion option for reducing recidivism rates among individuals with mental illness (Lamade & Lee 2020). At the stage of determining charges, prosecutors can make decisions that go beyond maximizing charges and convictions and instead seek to minimize coercive charging that increases the likelihood that innocent juveniles accept plea bargains (Grossman & Katz 1983). At the adjudication and sentencing stages, judges can make decisions that emphasize accountability and rehabilitation over punishment (Pinals & Fuller 2020).

As Cummings and colleagues (2022, p. 885) note, the American CLS is a system of “laws that are mediated by a system of discretion.” Trauma and its associated mental health distress should be evidence-based discretionary factors, with the cautionary note that discretion must be accompanied by constant measurement of equity in implementation (Smith & Levinson 2011). At each stage of the pathway, information about juveniles’ exposure to PTEs and trauma symptoms can be gathered and used to make trauma-informed decisions about how to respond in ways that minimize inflicting new or intensifying existing traumas (Crosby 2016, Heilbrun et al. 2017).

There are now enough agencies and offices in the CLS that have demonstrated the feasibility of implementing trauma screening at various stages of the system and using that information to make trauma-informed decisions about diversion, whether and how to apply charges and prosecute, and the provision of mental health care (Branson et al. 2017, Zettler 2021). In situations where screening information cannot be gathered, principles of universal trauma precautions can be practiced, which asks that all CLS staff—from first contact with police officers to last contact with parole officers—resist all forms of physical, psychological, and emotional abuse and engage with juveniles in ways that are responsive to potential mental health distress (Racine et al. 2020).

Here, I indulge in a moment of reflection on a conversation with an officer during which I engaged in a set of what-if questions regarding his perception that aggressive tactics are justified in the moment to “get the bad guys off the street.” A perspective that reflects the belief that there are core dispositional differences between people who do versus do not engage in violent offending. The what-if questions centered around possible traumatic experiences that juveniles may have had that set them on a pathway that increased their likelihood of violent offending. The officer’s response was that “all I know is what I see in the moment.” Universal trauma precautions shift the provision of TIC away from being limited to only those who meet screening criteria or symptom thresholds.

No efforts at creating a trauma-informed CLS can succeed without addressing the primary, secondary, and vicarious trauma that exists among all members of its workforce (Page & Robertson

2022, Regehr et al. 2021). Research suggests that corrections officers, the CLS staff with the most intense level of contact with detained juveniles, have a high level of their own exposure to personal and professional PTEs (Ellison & Jaegers 2022). It is therefore likely that many of the symptoms of psychological and emotional distress that exist among CLS-involved juveniles also exist among staff and contribute to incidents of professional misconduct (Regehr et al. 2021).

One of the most important ways that the science of trauma and adversity can affect the CLS is for that knowledge to inform how the billions that are spent on the system can be directed toward policies and programs that heal the primary and secondary effects of trauma while also minimizing tertiary system-induced trauma (Chemers et al. 2013, Ferrer 2016). Kagi & Regala (2012) report that policymakers ask for research that enables them to identify whether there is “a predictable life-course for high ACE [and trauma exposed] individuals that can help funders plan for, preempt, or interrupt the need for future services.” The studies included in this article highlight some of the ways that existing research can be used to create systemic and systematic change.

I conclude by highlighting one of many limitations of this review and one limitation of this field of research. First, space constraints limit my ability to discuss sex and gender; however, research shows that they are important stratifying characteristics associated with type and severity of exposure to PTEs, symptom expression, and type and severity of CLS victimization and retraumatization (Espinosa et al. 2020, Zettler et al. 2018). Second, this field of research is limited by the lack of studies with samples that represent the current demographic diversity of the United States. Twenty-six percent of juveniles in the United States are now Latinx; consequently, new prospective longitudinal studies are needed to adequately sample Latinx and other non-Black racial and ethnic minority juveniles to better understand subpopulation differences in the pathways to offending. Such studies also need measurements that consider subgroup differences in exposure to PTEs, such as the role of traumatic migration experiences and fear of deportation as potential sources of trauma (Domínguez et al. 2022, Lopez et al. 2018).

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LITERATURE CITED

- Abram KM, Teplin LA, Charles DR, Longworth SL, McClelland GM, Dulcan MK. 2004. Posttraumatic stress disorder and trauma in youth in juvenile detention. *Arch. Gen. Psychiatry* 61(4):403–10
- Abt T. 2019. *Bleeding Out: The Devastating Consequences of Urban Violence—and a Bold New Plan for Peace in the Streets*. New York: Basic Books
- Agnew R. 1992. Foundation for a general strain theory of crime and delinquency. *Criminology* 30(1):47–88
- Agnew R. 2001. Building on the foundation of general strain theory: specifying the types of strain most likely to lead to crime and delinquency. *J. Res. Crime Delinquency* 38(4):319–61
- Alexander M. 2012. *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*. New York: New Press. Rev. ed.
- Am. Public Health Assoc. 2018. *Addressing law enforcement violence as a public health issue*. APHA Policy 201811, Am. Public Health Assoc., Washington, DC
- Andrews DA, Bonta J, Hoge RD. 1990. Classification for effective rehabilitation: rediscovering psychology. *Crim. Justice Behav.* 17:19–52

- Arditti JA. 2012. Child trauma within the context of parental incarceration: a family process perspective. *J. Fam. Theory Rev.* 4(3):181–219
- Baetz CL, Surko M, Moaveni M, McNair F, Bart A, et al. 2021. Impact of a trauma-informed intervention for youth and staff on rates of violence in juvenile detention settings. *J. Interpers. Violence* 36(17–18):NP9463–82
- Baglivio MT, Epps N, Swartz K, Sayedul Huq M, Sheer A, Hardt NS. 2014. The prevalence of adverse childhood experiences (ACE) in the lives of juvenile offenders. *J. Juv. Justice* 3(2):1–23
- Baglivio MT, Wolff KT, Piquero AR, Epps N. 2015. The relationship between Adverse Childhood Experiences (ACE) and juvenile offending trajectories in a juvenile offender sample. *J. Crim. Justice* 43(3):229–41
- Baglivio MT, Wolff KT, Piquero AR, Greenwald MA, Epps N. 2017. Racial/ethnic disproportionality in psychiatric diagnoses and treatment in a sample of serious juvenile offenders. *J. Youth Adolesc.* 46(7):1424–51
- Beresford H, Wood JL. 2016. Patients or perpetrators? The effects of trauma exposure on gang members' mental health: a review of the literature. *J. Criminol. Res. Policy Pract.* 2(2):148–59
- Berg MT, Loeber R. 2011. Examining the neighborhood context of the violent offending-victimization relationship: a prospective investigation. *J. Quant. Criminol.* 27(4):427–51
- Berger M, Sarnyai Z. 2015. "More than skin deep": stress neurobiology and mental health consequences of racial discrimination. *Stress* 18(1):1–10
- Bishop DM, Leiber MJ. 2011. Racial and ethnic differences in delinquency and justice system responses. In *The Oxford Handbook of Juvenile Crime and Juvenile Justice*, ed. DM Bishop, BC Feld, pp. 444–84. Oxford, UK: Oxford Univ. Press
- Blodgett C, Lanigan JD. 2018. The association between adverse childhood experience (ACE) and school success in elementary school children. *Sch. Psychol. Q.* 33(1):137–46
- Blomberg TG, Bales WD, Piquero AR. 2012. Is educational achievement a turning point for incarcerated delinquents across race and sex? *J. Youth Adolesc.* 41(2):202–16
- Bonta J, Andrews DA. 2007. Risk-need-responsivity model for offender assessment and rehabilitation. *Rehabilitation* 6(1):1–22
- Bor J, Venkataramani AS, Williams DR, Tsai AC. 2018. Police killings and their spillover effects on the mental health of black Americans: a population-based, quasi-experimental study. *Lancet N. Am. Ed.* 392(10144):302–10
- Boyce WT, Sokolowski MB, Robinson GE. 2012. Toward a new biology of social adversity. *PNAS* 109(Suppl. 2):17143–48
- Boyd RW, Ellison AM, Horn IB. 2016. Police, equity, and child health. *Pediatrics* 137(3):e20152711
- Braga T, Gonçalves LC, Basto-Pereira M, Maia Â. 2017. Unraveling the link between maltreatment and juvenile antisocial behavior: a meta-analysis of prospective longitudinal studies. *Aggress. Violent Behav.* 33:37–50
- Branson CE, Baetz CL, Horwitz SM, Hoagwood KE. 2017. Trauma-informed juvenile justice systems: a systematic review of definitions and core components. *Psychol. Trauma* 9(6):635–46
- Briere J, Hodges M, Godbout N. 2010. Traumatic stress, affect dysregulation, and dysfunctional avoidance: a structural equation model. *J. Trauma Stress* 23(6):767–74
- Brown SL, Wanamaker KA, Greiner L, Scott T, Skilling TA. 2021. Complex trauma and criminogenic needs in a youth justice sample: a gender-informed latent profile analysis. *Crim. Justice Behav.* 48(2):175–94
- Brunson RK, Miller J. 2006. Gender, race, and urban policing: the experience of African American youths. *Gender Soc.* 20(4):531–52
- Bryant-Davis T, Adams T, Alejandre A, Gray AA. 2017. The trauma lens of police violence against racial and ethnic minorities. *J. Soc. Issues* 73(4):852–71
- Burke JD, Mulvey EP, Schubert CA. 2015. Prevalence of mental health problems and service use among first-time juvenile offenders. *J. Child Fam. Stud.* 24(12):3774–81
- Carter RT. 2007. Racism and psychological and emotional injury: recognizing and assessing race-based traumatic stress. *Couns. Psychol.* 35(1):13–105
- Catalano RF, Hawkins JD. 1996. The social development model: a theory of antisocial behavior. In *Delinquency and Crime: Current Theories*, pp. 149–97. New York: Cambridge Univ. Press

- Cavendish W. 2014. Academic attainment during commitment and postrelease education-related outcomes of juvenile justice-involved youth with and without disabilities. *J. Emot. Behav. Disord.* 22(1):41–52
- Chemers BM, Schuck JA, Bonnie RJ, Johnson RL, eds. 2013. *Reforming Juvenile Justice: A Developmental Approach*. Washington, DC: Natl. Acad. Press
- Cho M, Lee CH. 2022. Childhood maltreatment and repeat offending in juvenile delinquents: a propensity score matched-control study. *Youth Soc.* 54(7):1178–99
- Cohen JA, Mannarino AP. 2015. Trauma-focused cognitive behavioral therapy for traumatized children and families. *Child Adolesc. Psychiatr. Clin. N. Am.* 24(3):557–70
- Comartin EB, Nelson V, Smith S, Kubiak S. 2021. The criminal/legal experiences of individuals with mental illness along the sequential intercept model: an eight-site study. *Crim. Justice Behav.* 48(1):76–95
- Counc. State Gov. Justice Cent. 2014. *Measuring and using juvenile recidivism data to inform policy, practice, and resource allocation*. Rep., Natl. Reentry Resour. Cent., Arlington, VA
- Craig JM, Baglivio MT, Wolff KT, Piquero AR, Epps N. 2017a. Do social bonds buffer the impact of adverse childhood experiences on reoffending? *Youth Violence Juv. Justice* 15(1):3–20
- Craig JM, Malvaso C, Farrington DP. 2021. All in the family? Exploring the intergenerational transmission of exposure to adverse childhood experiences and their effect on offending behavior. *Youth Violence Juv. Justice* 19(3):292–307
- Craig JM, Piquero AR, Farrington DP, Ttofi MM. 2017b. A little early risk goes a long bad way: adverse childhood experiences and life-course offending in the Cambridge study. *J. Crim. Justice* 53:34–45
- Cronholm PF, Forke CM, Wade R, Bair-Merritt MH, Davis M, et al. 2015. Adverse childhood experiences: expanding the concept of adversity. *Am. J. Prev. Med.* 49(3):354–61
- Crosby SD. 2016. Trauma-informed approaches to juvenile justice: a critical race perspective. *Juv. Fam. Court J.* 67(1):5–18
- Cross D, Fani N, Powers A, Bradley B. 2017. Neurobiological development in the context of childhood trauma. *Clin. Psychol.* 24(2):111–24
- cummings adp, Clark TJ, Conrad CG, Johnson AD. 2022. Trauma: community of color exposure to the criminal justice system as an adverse childhood experience. *Univ. Cincinnati Law Rev.* 90(3):857–922
- Danese A, Baldwin JR. 2017. Hidden wounds? Inflammatory links between childhood trauma and psychopathology. *Annu. Rev. Psychol.* 68:517–44
- Dannowski U, Kugel H, Huber F, Stuhmann A, Redlich R, et al. 2013. Childhood maltreatment is associated with an automatic negative emotion processing bias in the amygdala. *Hum. Brain Mapp.* 34(11):2899–909
- Dannowski U, Stuhmann A, Beutelmann V, Zwanzger P, Lenzen T, et al. 2012. Limbic scars: long-term consequences of childhood maltreatment revealed by functional and structural magnetic resonance imaging. *Biol. Psychiatry* 71(4):286–93
- Day DM, Hart TA, Wanklyn SG, McCay E, Macpherson A, Burnier N. 2013. Potential mediators between child abuse and both violence and victimization in juvenile offenders. *Psychol. Serv.* 10:1–11
- de Arellano M, Lyman DR, Jobe-Shields L, George P, Dougherty RH, et al. 2014. Trauma-focused cognitive-behavioral therapy for children and adolescents: assessing the evidence. *Psychiatr. Serv.* 65(5):591–602
- DeHart DD, Moran R. 2015. Poly-victimization among girls in the justice system: trajectories of risk and associations to juvenile offending. *Violence Against Women* 21(3):291–312
- Dierkhising CB, Ko SJ, Woods-Jaeger B, Briggs EC, Lee R, Pynoos RS. 2013. Trauma histories among justice-involved youth: findings from the National Child Traumatic Stress Network. *Eur. J. Psychotraumatol.* 4. <https://doi.org/10.3402/ejpt.v4i0.20274>
- Domínguez DG, Hernandez-Arriaga B, Noriega MA, García D, Martínez DA. 2022. “They treat us like we are not human”: asylum seekers and “la migras” violence. *Psychol. Violence* 12:241–51
- Eddy JM, Bridges Whaley R, Chamberlain P. 2004. The prevention of violent behavior by chronic and serious male juvenile offenders: a 2-year follow-up of a randomized clinical trial. *J. Emot. Behav. Disord.* 12(1):2–8
- Ellis BJ, Boyce WT, Belsky J, Bakermans-Kranenburg MJ, van Ijzendoorn MH. 2011. Differential susceptibility to the environment: an evolutionary–neurodevelopmental theory. *Dev. Psychopathol.* 23(1):7–28
- Ellison JM, Jaegers LA. 2022. Suffering in silence: violence exposure and post-traumatic stress disorder among jail correctional officers. *J. Occup. Environ. Med.* 64(1):e28–35

- Engen RL, Steen S, Bridges GS. 2002. Racial disparities in the punishment of youth: a theoretical and empirical assessment of the literature. *Soc. Probl.* 49(2):194–220
- Espinosa EM, Sorensen JR, Walfield S. 2020. Youth pathways: evaluating the influence of gender, involvement with the public mental health system, perceived mental health need, and traumatic experiences on juvenile justice system processing. *Youth Violence Juv. Justice* 18(3):215–34
- Fader JJ, Kurlychek MC, Morgan KA. 2014. The color of juvenile justice: racial disparities in dispositional decisions. *Soc. Sci. Res.* 44:126–40
- Falshaw L, Browne KD, Hollin CR. 1996. Victim to offender: a review. *Aggress. Violent Behav.* 1:389–404
- Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, et al. 1998. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the Adverse Childhood Experiences (ACE) study. *Am. J. Prev. Med.* 14(4):245–58
- Ferrer ER. 2016. Transformation through accommodation: reforming juvenile justice by recognizing and responding to trauma. *Am. Crim. Law Rev.* 53(3):549–94
- Finkelhor D, Turner H, Hamby S, Ormrod R. 2011. Polyvictimization: children's exposure to multiple types of violence, crime, and abuse. *Juv. Justice Bull. Rep.*, US Dep. Justice, Washington, DC. <https://www.ojp.gov/pdffiles1/ojdp/235504.pdf>
- Folkman S. 2008. The case for positive emotions in the stress process. *Anxiety Stress Coping.* 21(1):3–14
- Ford J, Chapman JF, Hawke J, Albert DB. 2007. *Trauma among youth in the juvenile justice system: critical issues and new directions*. Rep. NCJ 232138, Off. Justice Progr., Washington, DC
- Ford JD, Chapman J, Connor DF, Cruise KR. 2012. Complex trauma and aggression in secure juvenile justice settings. *Crim. Justice Behav.* 39(6):694–724
- Ford JD, Grasso DJ, Hawke J, Chapman JF. 2013. Poly-victimization among juvenile justice-involved youths. *Child Abuse Negl.* 37(10):788–800
- Ford JD, Kerig PK, Desai N, Feierman J. 2016. Psychosocial interventions for traumatized youth in the juvenile justice system: research, evidence base, and clinical/legal challenges—ProQuest. *J. Juv. Justice* 5(1):31–49
- Fowler PJ, Tompsett CJ, Braciszewski JM, Jacques-Tiura AJ, Baltes BB. 2009. Community violence: a meta-analysis on the effect of exposure and mental health outcomes of children and adolescents. *Dev. Psychopathol.* 21(1):227–59
- Fox BH, Perez N, Cass E, Baglivio MT, Epps N. 2015. Trauma changes everything: examining the relationship between adverse childhood experiences and serious, violent and chronic juvenile offenders. *Child Abuse Negl.* 46:163–73
- Fritzon K, Miller S, Bargh D, Hollows K, Osborne A, Howlett A. 2021. Understanding the relationships between trauma and criminogenic risk using the risk-need-responsivity model. *J. Aggress. Maltreat. Trauma* 30(3):294–323
- Gaylord-Harden N. 2020. *Violence exposure, continuous trauma, and repeat offending in female and male serious adolescent offenders*. Rep. NCJ 254493, Off. Juv. Justice Delinquency Prev., Washington, DC. <https://www.ojp.gov/pdffiles1/ojdp/grants/254493.pdf>
- Gaylord-Harden NK, Cunningham JA, Zelencik B. 2011. Effects of exposure to community violence on internalizing symptoms: Does desensitization to violence occur in African American youth? *J. Abnorm. Child Psychol.* 39(5):711–19
- GBD 2019 Police Violence US Subnatl. Collab. 2021. Fatal police violence by race and state in the USA, 1980–2019: a network meta-regression. *Lancet* 398(10307):1239–55
- Geller A, Fagan J, Tyler T, Link BG. 2014. Aggressive policing and the mental health of young urban men. *Am. J. Public Health* 104(12):2321–27
- Goldstein NES, Kreimer R, Guo S, Le T, Cole LM, et al. 2021. Preventing school-based arrest and recidivism through prearrest diversion: outcomes of the Philadelphia Police School Diversion Program. *Law Hum. Behav.* 45(2):165–78
- Graf GH-J, Chihuri S, Blow M, Li G. 2021. Adverse childhood experiences and justice system contact: a systematic review. *Pediatrics* 147(1):e2020021030
- Greenwood P. 2008. Prevention and intervention programs for juvenile offenders. *Future Child.* 18(2):185–210

- Greeson JKP, Briggs EC, Kisiel CL, Layne CM, Ake GS, et al. 2011. Complex trauma and mental health in children and adolescents placed in foster care: findings from the National Child Traumatic Stress Network. *Child Welf.* 90(6):91–108
- Grossman GM, Katz ML. 1983. Plea bargaining and social welfare. *Am. Econ. Rev.* 73(4):749–57
- Haapasalo J, Pokela E. 1999. Child-rearing and child abuse antecedents of criminality. *Aggress. Violent Behav.* 4:107–27
- Han H-R, Miller HN, Nkimbeng M, Budhathoki C, Mikhael T, et al. 2021. Trauma informed interventions: a systematic review. *PLOS ONE* 16(6):e0252747
- Haney C. 2001. *The psychological impact of incarceration: implications for post-prison adjustment*. Rep., US Dep. Health Hum. Serv., Washington, DC
- Hawkins DF, Laub JH, Lauritsen JL, Cothorn L. 2000. *Race, ethnicity, and serious and violent juvenile offending*. Rep., Off. Juv. Justice Delinquency Prev., Washington, DC. <https://www.ojp.gov/pdffiles1/ojjdp/181202.pdf>
- Hawkins JD, Weis JG. 2015. The social development model: an integrated approach to delinquency prevention. In *Developmental and Life-Course Criminological Theories*, ed. TR McGee, P Mazerolle, pp. 3–27. Abingdon, UK: Routledge
- Haynie DL, Weiss HE, Piquero A. 2008. Race, the economic maturity gap, and criminal offending in young adulthood. *Justice Q.* 25(4):595–622
- Heilbrun K, Goldstein NES, DeMatteo D, Newsham R, Gale-Bentz E, et al. 2017. The sequential intercept model and juvenile justice: review and prospectus. *Behav. Sci. Law* 35(4):319–36
- Herrenkohl TI, Huang B, Tajima EA, Whitney SD. 2003. Examining the link between child abuse and youth violence: an analysis of mediating mechanisms. *J. Interpers. Violence* 18(10):1189–208
- Herz DC, Ryan JP, Bilchik S. 2010. Challenges facing crossover youth: an examination of juvenile-justice decision making and recidivism. *Fam. Court Rev.* 48:305–21
- Hinton E, Cook D. 2021. The mass criminalization of Black Americans: a historical overview. *Annu. Rev. Criminol.* 4:261–86
- Howard JML, Tener RR. 2008. Children who have been traumatized: one court's response. *Juv. Fam. Court J.* 59(4):21–34
- Howell JC, Egley A. 2005. Moving risk factors into developmental theories of gang membership. *Youth Violence Juv. Justice* 3(4):334–54
- Jäggi L, Klierer W, Serpell Z. 2020. Schooling while incarcerated as a turning point for serious juvenile and young adult offenders. *J. Adolesc.* 78:9–23
- Jäggi LJ, Mezuk B, Watkins DC, Jackson JS. 2016. The relationship between trauma, arrest, and incarceration history among Black Americans: findings from the National Survey of American Life. *Soc. Ment. Health* 6(3):187–206
- Jensen TK, Holt T, Ormhaug SM. 2017. A follow-up study from a multisite, randomized controlled trial for traumatized children receiving TF-CBT. *J. Abnorm. Child Psychol.* 45(8):1587–97
- Johnson ME. 2018. Trauma, race, and risk for violent felony arrests among Florida juvenile offenders. *Crime Delinquency* 64(11):1437–57
- Kagi R, Regala D. 2012. Translating the Adverse Childhood Experiences (ACE) study into public policy: progress and possibility in Washington State. *J. Prev. Interv. Community* 40(4):271–77
- Kaufman JG, Widom CS. 1999. Childhood victimization, running away, and delinquency. *J. Res. Crime Delinquency* 36:347–70
- Keels M. 2022. Developmental & ecological perspective on the intergenerational transmission of trauma & violence. *Daedalus* 151(1):67–83
- Keeshin BR, Campbell K. 2011. Screening homeless youth for histories of abuse: prevalence, enduring effects, and interest in treatment. *Child Abuse Negl.* 35(6):401–7
- Kerig PK, Chaplo SD, Bennett DC, Modrowski CA. 2016. “Harm as harm”: gang membership, perpetration trauma, and posttraumatic stress symptoms among youth in the juvenile justice system. *Crim. Justice Behav.* 43(5):635–52
- Kerig PK, Wainryb C. 2013. Introduction to the special issue, part I: new research on trauma, psychopathology, and resilience among child soldiers around the world. *J. Aggress. Maltreat. Trauma* 22(7):685–97

- Kerig PK, Wainryb C, Twali MS, Chaplo SD. 2013. America's child soldiers: toward a research agenda for studying gang-involved youth in the United States. *J. Aggress. Maltreat. Trauma* 22(7):773–95
- Kids Count Data Cent. 2023. Children in foster care by race and Hispanic origin in the United States. *Annie E. Casey Foundation*. <https://datacenter.aecf.org/data/tables/6246-children-in-foster-care-by-race-and-hispanic-origin#detailed/1/any/false/2048,574,1729,37,871,870,573,869,36,868/2638,2601,2600,2598,2603,2597,2602,1353/12992,12993>
- Kingston BE, Zimmerman MA, Wendel ML, Gorman-Smith D, Wright-Kelly E, et al. 2021. Developing and implementing community-level strategies for preventing youth violence in the United States. *Am. J. Public Health*. 111(S1):S20–24
- Ko SJ, Ford JD, Kassam-Adams N, Berkowitz SJ, Wilson C, et al. 2008. Creating trauma-informed systems: child welfare, education, first responders, health care, juvenile justice. *Prof. Psychol. Res. Pract.* 39:396–404
- Lamade RV, Lee RM. 2020. Trauma in specialized treatment diversion: problem-solving court contexts (PSCs). In *Assessing Trauma in Forensic Contexts*, ed. RA Javier, EA Owen, JA Maddux, pp. 463–93. Cham, Switz.: Springer
- Lanius RA, Frewen PA, Vermetten E, Yehuda R. 2010. Fear conditioning and early life vulnerabilities: two distinct pathways of emotional dysregulation and brain dysfunction in PTSD. *Eur. J. Psychotraumatol.* 1(1):54–67
- Lannert BK. 2015. Traumatogenic processes and pathways to mental health outcomes for sexual minorities exposed to bias crime information. *Trauma Violence Abuse* 16(3):291–98
- Littleton H, Horsley S, John S, Nelson DV. 2007. Trauma coping strategies and psychological distress: a meta-analysis. *J. Trauma Stress* 20(6):977–88
- Loeber R, Slot W, Stouthamer-Loeber M. 2008. A cumulative developmental model of risk and promotive factors. In *Tomorrow's Criminals*, ed. R Loeber, W Slot, H Machteld, pp. 151–80. Abingdon, UK: Routledge
- Lopez WD, Novak NL, Harner M, Martinez R, Seng JS. 2018. The traumatogenic potential of law enforcement home raids: an exploratory report. *Traumatology* 24:193–99
- Lösel F, Farrington DP. 2012. Direct protective and buffering protective factors in the development of youth violence. *Am. J. Prev. Med.* 43(2, Suppl. 1):S8–23
- MacNair RM. 2002. *Perpetration-Induced Traumatic Stress: The Psychological Consequences of Killing*. Westport, CT: Praeger Publ.
- Malvaso CG, Cale J, Whitten T, Day A, Singh S, et al. 2022. Associations between adverse childhood experiences and trauma among young people who offend: a systematic literature review. *Trauma Violence Abuse* 23(5):1677–94
- Malvaso CG, Delfabbro PH, Day A. 2016. Risk factors that influence the maltreatment-offending association: a systematic review of prospective and longitudinal studies. *Aggress. Violent Behav.* 31:1–15
- Marrow MT, Knudsen KJ, Olafson E, Bucher SE. 2012. The value of implementing TARGET within a trauma-informed juvenile justice setting. *J. Child Adolesc. Trauma* 5:257–70
- Marsee MA. 2008. Reactive aggression and posttraumatic stress in adolescents affected by Hurricane Katrina. *J. Clin. Child Adolesc. Psychol.* 37(3):519–29
- Maschi T, Bradley CA, Morgen K. 2008. Unraveling the link between trauma and delinquency: the mediating role of negative affect and delinquent peer exposure. *Youth Violence Juv. Justice* 6(2):136–57
- Masia-Warner C, Nangle DW, Hansen DJ. 2006. Bringing evidence-based child mental health services to the schools: general issues and specific populations. *Educ. Treat. Child.* 29(2):165–72
- Matsueda RL, Kreager DA, Huizinga D. 2006. Deterring delinquents: a rational choice model of theft and violence. *Am. Sociol. Rev.* 71(1):95–122
- McAra L, McVie S. 2007. Youth justice?: the impact of system contact on patterns of desistance from offending. *Eur. J. Criminol.* 4(3):315–45
- McAra L, McVie S. 2022. *Causes and impact of offending and criminal justice pathways: follow-up of the Edinburgh Study Cohort at age 35*. Rep., Univ. Edinb. Law Sch., Edinburgh. <https://www.law.ed.ac.uk/sites/default/files/2022-03/ESYTC%20Report%20%28March%202022%29%20-%20Acc.pdf>
- McGee TR, Farrington DP. 2016. Developmental and life-course theories of crime. In *The Handbook of Criminological Theory*, ed. AR Piquero, pp. 336–53. Hoboken, NJ: Wiley & Sons

- McLaughlin KA, Koenen KC, Hill ED, Petukhova M, Sampson NA, et al. 2013. Trauma exposure and posttraumatic stress disorder in a national sample of adolescents. *J. Am. Acad. Child Adolesc. Psychiatry* 52(8):815–30.e14
- McLaughlin KA, Kubzansky LD, Dunn EC, Waldinger R, Vaillant G, Koenen KC. 2010. Childhood social environment, emotional reactivity to stress, and mood and anxiety disorders across the life course. *Depress. Anxiety* 27(12):1087–94
- Mendel RA. 2011. *No place for kids: the case for reducing juvenile incarceration*. Rep., Annie E. Casey Found., Baltimore, MD. <https://assets.aecf.org/m/resourcedoc/aecf-NoPlaceForKidsFullReport-2011.pdf>
- Merikangas KR, He J, Burstein ME, Swendsen J, Avenevoli S, et al. 2011. Service utilization for lifetime mental disorders in U.S. adolescents: results of the National Comorbidity Survey Adolescent Supplement (NCS-A). *J. Am. Acad. Child Adolesc. Psychiatry* 50(1):32–45
- Moffitt TE. 2017. *Adolescence-Limited and Life-Course-Persistent Antisocial Behavior: A Developmental Taxonomy*. Abingdon, UK: Routledge
- Moreland A, Ressler KJ. 2021. A perspective for understanding trauma and the criminal juvenile justice system: using a trauma-informed lens for meaningful and sustained change. *Harv. Rev. Psychiatry* 29(3):216–24
- Mozley MM, Lin B, Kerig PK. 2018. Posttraumatic overmodulation, callous-unemotional traits, and offending among justice-involved youth. *J. Aggress. Maltreat. Trauma* 27:744–58
- Munetz MR, Griffin PA. 2006. Use of the sequential intercept model as an approach to decriminalization of people with serious mental illness. *Psychiatr. Serv.* 57(4):544–49
- Neely-Barnes S, Whitted K. 2011. Examining the social, emotional and behavioral needs of youth involved in the child welfare and juvenile justice systems. *J. Health Hum. Serv. Adm.* 34(2):206–38
- Neller DJ, Fabian JM. 2006. Trauma and its contribution to violent behaviour. *Crim. Justice Matters* 66(1):6–7
- Nemeroff CB. 2004. Neurobiological consequences of childhood trauma. *J. Clin. Psychiatry* 65(Suppl. 1):18–28
- Novak A, Fagan AA. 2022. The conditioning effects of positive experiences on the ACEs-offending relationship in adolescence. *Child Abuse Negl.* 134:105915
- Off. Juv. Justice Delinquency Prev. 2012. *Report of the Attorney General's National Task Force on Children Exposed to Violence*. Rep. NCJ 241563, US Dep. Justice, Washington, DC. <https://www.justice.gov/defendingchildhood/cev-rpt-full.pdf>
- Off. Juv. Justice Delinquency Prev. 2022. *Racial and ethnic disparity in juvenile justice processing: literature review: a product of the Model Programs Guide*. Rep., Off. Justice Progr., Washington, DC. <https://ojjdp.ojp.gov/model-programs-guide/literature-reviews/racial-and-ethnic-disparity>
- Olaghere A, Wilson DB, Kimbrell CS. 2021. Trauma-informed interventions for at-risk and justice-involved youth: a meta-analysis. *Crim. Justice Behav.* 48(9):1261–77
- Page J, Robertson N. 2022. Extent and predictors of work-related distress in community correction officers: a systematic review. *Psychiatry Psychol. Law* 29(2):155–82
- Peltonen K, Ellonen N, Pitkänen J, Aaltonen M, Martikainen P. 2020. Trauma and violent offending among adolescents: a birth cohort study. *J. Epidemiol. Community Health* 74(10):845–50
- Perez NM, Jennings WG, Baglivio MT. 2018. A path to serious, violent, chronic delinquency: the harmful aftermath of adverse childhood experiences. *Crime Delinquency* 64(1):3–25
- Perry BD. 2009. Examining child maltreatment through a neurodevelopmental lens: clinical applications of the neurosequential model of therapeutics. *J. Loss Trauma* 14(4):240–55
- Perry BD, Dobson CL. 2013. The neurosequential model (NMT) in maltreated children. In *Treating Complex Traumatic Stress Disorders in Children and Adolescents: Scientific Foundations and Therapeutic Models*, ed. JD Ford, CA Courtois, pp. 249–60. New York: Guilford Press
- Perry BD, Pollard RA, Blakley TL, Baker WL, Vigilante D. 1995. Childhood trauma, the neurobiology of adaptation, and “use-dependent” development of the brain: how “states” become “traits.” *Infant Ment. Health J.* 16(4):271–91
- Petteruti A, Schindler M, Ziedenberg J. 2014. *Sticker shock: calculating the full price tag for youth incarceration*. Rep., Natl. Inst. Correct., Washington, DC
- Pickett JT, Graham A, Cullen FT. 2022. The American racial divide in fear of the police. *Criminology* 60(2):291–320

- Pinals DA, Fuller DA. 2020. *Trauma and its implication for justice systems*. Mental Health Facts Brief, Natl. Cent. State Courts, Williamsburg, VA. https://www.ncsc.org/_data/assets/pdf_file/0021/14493/mhf4-trauma-mar2020.pdf
- Piquero AR. 2015. Understanding race/ethnicity differences in offending across the life course: gaps and opportunities. *J. Dev. Life Course Criminol.* 1(1):21–32
- Piquero AR, Farrington DP, Blumstein A. 2003. The criminal career paradigm. *Crime Justice* 30:359–506
- Poe-Yamagata E. 2009. *And justice for some: differential treatment of minority youth in the justice system*. Rep. NCJ 217050, Natl. Counc. Crime Delinquency, Washington, DC
- Polaschek DLL. 2019. The psychology of violent offending. In *The Wiley International Handbook of Correctional Psychology*, ed. DLL Polaschek, A Day, CR Hollin, pp. 183–205. New York: Wiley
- Pyrooz DC, Moule RK, Decker SH. 2014. The contribution of gang membership to the victim-offender overlap. *J. Res. Crime Delinquency* 51(3):315–48
- Quinn K, Pacella ML, Dickson-Gomez J, Nydegger LA. 2017. Childhood adversity and the continued exposure to trauma and violence among adolescent gang members. *Am. J. Community Psychol.* 59(1–2):36–49
- Racine N, Killam T, Madigan S. 2020. Trauma-informed care as a universal precaution: beyond the adverse childhood experiences questionnaire. *JAMA Pediatr.* 174(1):5–6
- Randall M, Haskell L. 2013. Trauma-informed approaches to law: why restorative justice must understand trauma and psychological coping restorative justice. *Dalhousie Law J.* 36(2):501–34
- Rasche K, Dudeck M, Otte S, Klingner S, Vasic N, Streb J. 2016. Factors influencing the pathway from trauma to aggression: a current review of behavioral studies. *Neurol. Psychiatry Brain Res.* 22(2):75–80
- Redding R. 2008. *Juvenile transfer laws: an effective deterrent to delinquency?* Rep., Off. Juv. Justice Delinquency Progr., Washington, DC. <https://www.ojp.gov/pdffiles1/ojdp/220595.pdf>
- Regehr C, Carey M, Wagner S, Alden LE, Buys N, et al. 2021. Prevalence of PTSD, depression and anxiety disorders in correctional officers: a systematic review. *Corrections* 6(3):229–41
- Rhoden M-A, Macgowan MJ, Huang H. 2019. A systematic review of psychological trauma interventions for juvenile offenders. *Res. Soc. Work Pract.* 29:892–909
- Rich JA, Grey CM. 2005. Pathways to recurrent trauma among young black men: traumatic stress, substance use, and the “code of the street.” *Am. J. Public Health* 95(5):816–24
- Sampson RJ, Laub JH. 1990. Crime and deviance over the life course: the salience of adult social bonds. *Am. Sociol. Rev.* 55(5):609–27
- Sampson RJ, Laub JH. 1992. Crime and deviance in the life course. *Annu. Rev. Sociol.* 18:63–84
- Sapolsky RM. 2004. The frontal cortex and the criminal justice system. *Philos. Trans. R. Soc. Lond. B* 359(1451):1787–96
- Sapolsky RM. 2015. Stress and the brain: individual variability and the inverted-U. *Nat. Neurosci.* 18(10):1344–46
- Schwartz GL, Jahn JL. 2020. Mapping fatal police violence across U.S. metropolitan areas: overall rates and racial/ethnic inequities, 2013–2017. *PLOS ONE* 15(6):e0229686
- Sewell AA, Feldman JM, Ray R, Gilbert KL, Jefferson KA, Lee H. 2021. Illness spillovers of lethal police violence: the significance of gendered marginalization. *Etn. Racial Stud.* 44(7):1089–114
- Sewell AA, Jefferson KA, Lee H. 2016. Living under surveillance: gender, psychological distress, and stop-question-and-frisk policing in New York City. *Soc. Sci. Med.* 159:1–13
- Skowrya KR, Coccozza JJ. 2007. *Blueprint for change: a comprehensive model for the identification and treatment of youth with mental health needs in contact with the juvenile justice system*. Rep., Natl. Cent. Ment. Health Juv. Justice, Delmar, NY
- Smith RJ, Levinson JD. 2011. The impact of implicit racial bias on the exercise of prosecutorial discretion. *Seattle Univ. Law Rev.* 35(3):795–826
- Smith Lee JR, Robinson MA. 2019. “That’s my number one fear in life. It’s the police”: examining young black men’s exposures to trauma and loss resulting from police violence and police killings. *J. Black Psychol.* 45(3):143–84
- Sohoni TW, Ousey GC, Bower E, Mehdi A. 2021. Understanding the gap in self-reported offending by race: a meta-analysis. *Am. J. Crim. Justice* 46(5):770–92

- Solomon EP, Heide KM. 2005. The biology of trauma: implications for treatment. *J. Interpers. Violence* 20(1):51–60
- Soltis K, Acierno R, Gros DF, Yoder M, Tuerk PW. 2014. Post-traumatic stress disorder: ethical and legal relevance to the criminal justice system. *J. Law Med.* 42(2):147–54
- Spinney E, Cohen M, Feyerherm W, Stephenson R, Yeide M, Shreve T. 2018. Disproportionate minority contact in the U.S. juvenile justice system: a review of the DMC literature, 2001–2014, Part I. *J. Crime Justice* 41(5):573–95
- Spinney E, Yeide M, Feyerherm W, Cohen M, Stephenson R, Thomas C. 2016. Racial disparities in referrals to mental health and substance abuse services from the juvenile justice system: a review of the literature. *J. Crime Justice* 39(1):153–73
- Sprott JB, Jenkins JM, Doob AN. 2005. The importance of school: protecting at-risk youth from early offending. *Youth Violence Juv. Justice* 3(1):59–77
- Stewart EA, Schreck CJ, Simons RL. 2006. “I ain’t gonna let no one disrespect me”: Does the code of the street reduce or increase violent victimization among African American adolescents? *J. Res. Crime Delinquency* 43(4):427–58
- Sullaway M. 2004. Psychological perspectives on hate crime laws. *Psychol. Public Policy Law* 10:250–92
- Summersett Williams F, Sax RM, Slesinger NC, Jordan N, Sharp D, et al. 2022. An examination of a juvenile justice diversion program for youth with mental health needs and traumatic stress symptoms: a strengths-based approach. *Psychol. Crime Law*. <https://doi.org/10.1080/1068316X.2022.2109632>
- Thompson HA. 2010. Why mass incarceration matters: rethinking crisis, decline, and transformation in postwar American history. *J. Am. Hist.* 97(3):703–34
- Thordarson H, Rector T. 2020. From trauma-blind to trauma-informed: re-thinking criminalization and the role of trauma in persons with serious mental illness. *CNS Spectr.* 25(5):577–83
- Thornberry TP. 1987. Toward an interactional theory of delinquency. *Criminology* 25(4):863–92
- Thornberry TP, Lizotte AJ, Krohn MD, Farnworth M, Jang SJ. 1994. Delinquent peers, beliefs, and delinquent behavior: a longitudinal test of interactional theory. *Criminology* 32(1):47–83
- Tost H, Champagne FA, Meyer-Lindenberg A. 2015. Environmental influence in the brain, human welfare and mental health. *Nat. Neurosci.* 18(10):1421–31
- Ttofi MM, Farrington DP, Piquero AR, DeLisi M. 2016. Protective factors against offending and violence: results from prospective longitudinal studies. *J. Crim. Justice* 45:1–3
- Underwood LA, Washington A. 2016. Mental illness and juvenile offenders. *Int. J. Environ. Res. Public Health* 13(2):228
- van der Kolk BA. 2009. Developmental trauma disorder: towards a rational diagnosis for chronically traumatized children. *Prax. Kinderpsychol. Kinderpsychiatr.* 58(8):572–86
- van der Kolk BA, Fisler R. 1995. Dissociation and the fragmentary nature of traumatic memories: overview and exploratory study. *J. Trauma Stress* 8(4):505–25
- van der Put CE, de Ruiter C. 2016. Child maltreatment victimization by type in relation to criminal recidivism in juvenile offenders. *BMC Psychiatry* 16:24
- Vitaro F, Gendreau PL, Tremblay RE, Olinny P. 1998. Reactive and proactive aggression differentially predict later conduct problems. *J. Child Psychol. Psychiatry* 39(3):377–85
- Vitopoulos NA, Peterson-Badali M, Brown S, Skilling TA. 2019. The relationship between trauma, recidivism risk, and reoffending in male and female juvenile offenders. *J. Child Adolesc. Trauma* 12(3):351–64
- Voisin DR, Elsaesser CM. 2013. Pathways from polyvictimization to youth problem behaviors: the critical role of school engagement. *Int. J. High. Educ.* 2(4):15–30
- Webb T. 2016. Children exposed to violence: a developmental trauma informed response for the criminal justice system. *J. Child Adolesc. Trauma* 9:183–89
- Widom CS. 1989. Child abuse, neglect, and adult behavior. *Am. J. Orthopsychiatry* 59(3):355–67
- Wildeman C, Emanuel N, Leventhal JM, Putnam-Hornstein E, Waldfogel J, Lee H. 2014. The prevalence of confirmed maltreatment among US children, 2004 to 2011. *JAMA Pediatr.* 168(8):706–13
- Wolff KT, Baglivio MT, Piquero AR. 2017. The relationship between adverse childhood experiences and recidivism in a sample of juvenile offenders in community-based treatment. *Int. J. Offender Ther. Comp. Criminol.* 61(11):1210–42

- Yang N, Collins JW, Burris HH. 2021. States with more killings of unarmed Black people have larger Black-White preterm birth disparities. *J. Perinatol.* 41(2):358–59
- Yoder JR, Bender K, Thompson SJ, Ferguson KM, Haffeejee B. 2014. Explaining homeless youths' criminal justice interactions: childhood trauma or surviving life on the streets? *Community Ment. Health J.* 50:135–44
- Yoder JR, Whitaker K, Quinn CR. 2017. Perceptions of recidivism among incarcerated youth: the relationship between exposure to childhood trauma, mental health status, and the protective effect of mental health services in juvenile justice settings. *Adv. Soc. Work* 18(1):250–69
- Zettler HR. 2021. Much to do about trauma: a systematic review of existing trauma-informed treatments on youth violence and recidivism. *Youth Violence Juv. Justice* 19(1):113–34
- Zettler HR, Wolff K, Baglivio M, Craig JM, Epps N. 2018. The racial and gender differences in the impact of adverse childhood experiences on juvenile residential placement. *Youth Violence Juv. Justice* 16(3):319–37