

ARTICLES

TRANSFORMATION THROUGH ACCOMMODATION: REFORMING JUVENILE JUSTICE BY RECOGNIZING AND RESPONDING TO TRAUMA

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INTRODUCTION

Darius¹ was thirteen when I was appointed to represent him in his first delinquency case. He was the oldest sibling in his family, asked a lot of questions, loved to read, and was incredibly observant and insightful. Darius did not know his biological father, and his mother and childhood father were separated. When Darius was around the age of twelve, his mother was diagnosed with a terminal illness. As a result of her illness, Darius's mother has had limited time and resources to meet Darius's physical and emotional needs.

Tanya came into the juvenile justice system in her early teens after an argument with her mother, during which she allegedly threatened her mother. The argument began because Tanya kept running away from home. Tanya began running away shortly after reporting that she had been sexually assaulted by an older family member who lived in her home.

When I first met Kevon, he was seventeen years old. He was quiet and reserved with strangers but always smiling and laughing with his mother. At a young age, Kevon lost his father to violence in the neighborhood. His mother suffered from a number of mental health issues, including schizophrenia. She also used cocaine and methamphetamine during Kevon's childhood. Kevon and his mother often did not have stable housing. Kevon often either went to school hungry because he

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1. Darius, Tanya, Kevon, and Juan are based on clients whom I have represented in delinquency matters over the past few years in the course of my practice in the District of Columbia. The names, some demographic features, and minor facts of their cases have been altered slightly to protect their identities and confidentiality. These short profiles are based on the trauma histories of these clients, though it is important to note that their trauma histories alone do not define them.

lacked money for food, or did not go to school at all because he could not afford to take the bus or wash his uniform.

Juan was fifteen years old when he first came into contact with the juvenile justice system. Juan was charming, intelligent, social, and exceptionally tall. He loved school and playing basketball. While still an infant, Juan was removed from his biological mother's home due to neglect that resulted from her drug use. At around the age of two, Juan and his younger sibling were adopted by a couple that lived in the District of Columbia. Juan never knew his biological father but had some contact with his biological mother after his adoption. At a young age, Juan started exhibiting behavioral issues that were suspected to be the result of his mother's drug use while pregnant. In his adoptive home, Juan suffered physical and emotional abuse. When Juan was arrested for allegedly stealing from a corner store, his adoptive parents refused to take him home and asked for him to be detained. While the delinquency case was pending against Juan, a neglect case was opened against his adoptive parents. They relinquished their parental rights shortly thereafter. Juan was placed in the custody of D.C.'s foster care agency.

Sadly, the adverse childhood experiences² faced by Darius, Tanya, Kevon, Juan, and the many other youth like them are not the only obstacles they have faced in their lifetimes. Indeed, these youth and their families have faced these traumas with scant resources and support to handle them appropriately. Nearly all delinquency-involved youth in the District of Columbia live in poverty;³ most live in under-resourced areas of the city;⁴ and most attend failing schools.⁵ At such a

2. As will be described in further detail *infra*, there are different types of trauma. *See infra* notes 106–18 and accompanying text. The focus of this Article is on toxic stress, which “results from intense adverse experiences that may be sustained over a long period of time.” *See* JENNIFER S. MIDDLEBROOKS & NATALIE C. AUDAGE, CTRS. FOR DISEASE CONTROL & PREVENTION, NAT’L CTR. FOR INJURY PREVENTION & CONTROL, *THE EFFECTS OF CHILDHOOD STRESS ON HEALTH ACROSS THE LIFESPAN* 4 (2008). Throughout this Article, the terms “adverse childhood experiences,” “toxic stress,” or “chronic unpredictable toxic stress” may be used to refer to the general concept of trauma. For further discussion, *see infra* notes 106–18 and accompanying text.

3. To qualify for pro bono representation in the District of Columbia, the youth and his or her family must be indigent, meaning that the income of the youth and his or her family must not exceed the Lower Living Standard Income Level (“LLSIL”). *See* Email from Tia Richardson, Dir., Def. Servs. Office, Pub. Def. Serv. for D.C., to Eduardo Ferrer, Legal & Policy Dir., DC Lawyers for Youth (Mar. 30, 2016) (on file with author) (the Defender Services Office of the Public Defender Service for the District of Columbia oversees the process of verifying eligibility and assigning counsel to indigent youth in the District of Columbia). In the District of Columbia, a family of four whose income does not the LLSIL has an income less than one-half the estimated income necessary to have an adequate but modest living standard. *Compare* Workforce Innovation and Opportunity Act; Lower Living Standard Income Level, 80 Fed. Reg. 16450 (Mar. 27, 2015), <https://www.gpo.gov/fdsys/pkg/FR-2015-03-27/pdf/2015-07031.pdf> (reporting that the 2015 federal poverty guidelines for a family of four in the Washington-Baltimore Metropolitan Statistical Area is \$45,460), *with* ELISE GOULD, TANYELL COOKE & WILL KIMBALL, ECON. POLICY INST., *WHAT FAMILIES NEED TO GET BY: EPI’S 2015 FAMILY BUDGET CALCULATOR 2* (2015), <http://s4.epi.org/files/2015/epi-family-budget-calculator-2015.pdf> (setting the basic family budget for a two-parent, two-child family in the District of Columbia at \$106,493).

4. In 2010, 70% of all D.C. youth arrested lived in the poorest three wards in the District: Wards 5, 7, and 8. *See* Metropolitan Police Department, Criminal Justice Information System Arrest Data (on file with author). In 2010, Wards 5, 7, and 8 had the highest rates of unemployment, child poverty, and female-headed households in the

young age, youth in the delinquency system have already faced much more adversity than their middle-class peers,⁶ and they know it. Recently, in preparing for a disposition hearing⁷ for Darius, I asked him if he had any questions. He had one: “Mr. Ferrer, when do I get to be a normal kid?”

Childhood trauma is common in the lives of far too many youth in the delinquency system in the District of Columbia. Unfortunately, this reality is neither anecdotal nor unique to the District of Columbia. While estimates vary, recent research supports the conclusion that childhood trauma is very likely a common experience for youth in juvenile justice systems across the country.⁸ Recent surveys have found that most youth in the juvenile justice system have experienced at least one traumatic event and that most youth in the delinquency system have experienced multiple traumatic events during their childhoods.⁹ Experiencing childhood trauma has profound implications on the physiological, neurological, and psychological development of the youth¹⁰—implications the current juvenile justice system is not prepared to address effectively.¹¹

There is hope, though. Over the past ten years, our judicial system and legislatures have begun to incorporate research regarding normal adolescent development into juvenile justice law, policy, and practice.¹² This is due, in large part, to the growing body of psychological and neurological research conducted over the past twenty-five years “tracking the normative, cognitive, and psychosocial development of youth [that has] consistently found significant deficiencies in adolescent decision-making capacities, especially in the fast-paced, emotionally charged settings common to adolescent offending.”¹³ Unfortunately, despite a

District. See 2002 Ward Comparison Table, NEIGHBORHOOD INFO DC, <http://www.neighborhoodinfodc.org/comparisontables/comparisontables.html> (last downloaded Mar. 24, 2016). These wards also had the lowest rates of individuals with a bachelor’s degree or higher. See *id.*

5. In 2010, more than six in ten youth attending elementary schools in Wards 5, 7, and 8 were performing below grade level in reading and in math. See *Deep Divide in D.C. CAS Scores*, WASH. POST (Aug. 6, 2011), http://www.washingtonpost.com/local/education/deep-divide-in-dc-cas-scores/2011/08/06/gIQATqITzI_graphic.html.

6. See *infra* notes 193–201 and accompanying text.

7. Disposition hearings in juvenile court are the equivalent of sentencing hearings in adult court.

8. See *infra* notes 193–201 and accompanying text.

9. See *id.*

10. See *infra* notes 152–72 and accompanying text.

11. See *infra* notes 208–47 and accompanying text; see also Kristin Henning, *Criminalizing Normal Adolescent Behavior in Communities of Color: The Role of Prosecutors in Juvenile Justice Reform*, 98 CORNELL L. REV. 383, 391–97 (2013) [hereinafter Henning, *Criminalizing Normal Adolescent Behavior*].

12. See *Miller v. Alabama*, 132 S. Ct. 2455, 2464 n.5 (2012); *J.D.B. v. North Carolina*, 131 S. Ct. 2394, 2404–05 (2011); *Graham v. Florida*, 560 U.S. 48, 67 (2010); *Roper v. Simmons*, 543 U.S. 551, 569–70 (2005); see also Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 402–03 (“We are clearly at a turning point in the juvenile court’s history. Given the sustained validation from both developmental research and Supreme Court jurisprudence, the role of adolescence in criminal justice policy and practice is on firmer footing than ever before and may be here to stay.”).

13. See Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 397; see also LAURENCE STEINBERG, *AGE OF OPPORTUNITY: LESSONS FROM THE NEW SCIENCE OF ADOLESCENCE* 10 (2014) (“[I]t is only

similarly growing body of research demonstrating how childhood trauma can impede the neurological,¹⁴ physiological,¹⁵ cognitive,¹⁶ and psychosocial¹⁷ development of a traumatized youth,¹⁸ the impact of trauma on adolescent decision-making has not yet received the same attention or accommodation. As society moves towards a juvenile justice system that incorporates the science behind normal adolescent development,¹⁹ it is critical that the juvenile justice system similarly incorporate research behind the lasting impacts of childhood trauma on development.

If such research is effectively incorporated into how the juvenile justice system responds to system-involved youth, the juvenile justice system should see a number of improvements. First, the juvenile justice system will narrow its amorphous goal of rehabilitation to a focused objective of recidivism reduction. Second, the juvenile justice system will become smaller as system stakeholders use their knowledge and power to advocate for earlier, more effective delinquency prevention programs and as more youth are diverted to more effective, trauma-informed services. Third, the juvenile justice system will adopt a trauma-informed approach, recognizing that system-involved youth who have experienced trauma are the norm rather than the exception. Fourth, by implementing evidence-based practices that address trauma, the juvenile justice system will yield better outcomes for youth, families, and communities.

This Article argues that our judicial system and legislatures, when crafting juvenile justice law, policy, and practice, cannot stop with merely incorporating the research behind the impact of normal adolescent development on the decision-making abilities of youth; they must also incorporate the research behind how the experience of trauma can further diminish such decision-making abilities. To that end, this Article proceeds in three parts. Section I provides an overview of normative childhood development, specifically highlighting key distinguishing

within the past twenty-five years that scientists discovered that systematic and predictable patterns of brain maturation even take place during adolescence, much less that patterns of brain development during this stage might be influenced by experience.”)

14. Neurological means “[r]elating to the anatomy, functions, and organic disorders of nerves and the nervous system.” *Neurological*, OXFORD DICTIONARIES, http://www.oxforddictionaries.com/definition/american_english/neurological (last visited Apr. 5, 2016).

15. Physiological means “[r]elating to the branch of biology that deals with the normal functions of living organisms and their parts.” *Physiological*, OXFORD DICTIONARIES, http://www.oxforddictionaries.com/definition/american_english/physiological (last visited Apr. 5, 2016).

16. Cognitive means relating to “[t]he mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.” *Cognition*, OXFORD DICTIONARIES, http://www.oxforddictionaries.com/definition/american_english/cognition (last visited Apr. 5, 2016).

17. Psychosocial means “[r]elating to the interrelation of social factors and individual thought and behavior.” *Psychosocial*, OXFORD DICTIONARIES, http://www.oxforddictionaries.com/definition/american_english/psychosocial (last visited Apr. 5, 2016).

18. See *infra* notes 152–72 and accompanying text.

19. See Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 397–404 (discussing the “Age of Science and the Revival of Adolescence”).

features between adolescence and adulthood. Section I also explores the legal relevance that these key normative differences have to criminal law. Section II introduces trauma, the impact that trauma can have on the developing brain and stress response system, and the manner in which trauma manifests itself in the day-to-day lives of adolescents. In particular, Section II explores the scientific literature relating to how adverse childhood experiences can leave physiological, neurological, and psychological scars that follow an individual well into mature adulthood. Section III argues that the juvenile and criminal justice systems should accommodate trauma—just as they are increasingly accommodating the developmental differences between adolescents and adults—in light of recent research, case law, and existing legislative frameworks. Section III proposes that the juvenile justice system adopt a narrow goal of recidivism reduction while also implementing systemic changes that effectively accommodate the impact of childhood trauma. This Article concludes that effectively accommodating trauma in the juvenile justice system should lead to a smaller, more effective system; improved youth and family outcomes; and increased public safety.

I. CRIMINAL LAW IS INCREASINGLY RECOGNIZING AND ACCOMMODATING THE NEUROLOGICAL AND PHYSIOLOGICAL DIFFERENCES BETWEEN YOUTH AND ADULTS

To fully understand the impact that trauma can have on the development of a young person, one must start with an understanding of normative development,²⁰ because the impact of trauma on development is typically understood in relation to, and as a deviation from, this norm.²¹ Additionally, while lawyers are not expected to be psychologists, neurologists, or experts on the brain, juvenile justice system stakeholders generally, and youth defenders specifically, should be familiar with at least the key concepts that define normative development.²² Such concepts include brain development and the key hallmarks that distinguish youth decision-

20. Normative development refers to the typical path of development for the average child. *See Normative*, OXFORD DICTIONARIES, http://www.oxforddictionaries.com/us/definition/american_english/normative (last visited Apr. 5, 2016) (defining “normative” as “[e]stablishing, relating to, or deriving from a standard or norm, especially of behavior”).

21. The author of this Article is a youth defender and not a trained psychologist or neurologist. This Article relies heavily upon work of neurologists, doctors, child psychologists, and other legal scholars who have written in this area.

22. Consider the national juvenile defense standards as described by the National Juvenile Defense Center:

Evidence abounds as to the unique and special status of childhood and the impact that immaturity, disabilities, or trauma may have in the case at hand. The juvenile defender must be clear about his or her role and be able to keep pace with this growing body of scientific research and legal jurisprudence that applies directly to the representation of children.

NAT'L JUVENILE DEF. CTR., NATIONAL JUVENILE DEFENSE STANDARDS 5 (2012), <http://njdc.info/wp-content/uploads/2013/09/NationalJuvenileDefenseStandards2013.pdf>.

making from adult decision-making.²³ Stakeholders should be familiar also with how legislatures and the judicial system are increasingly taking such research into account when developing law, policy, and practice.²⁴

A. *An Introduction to Brain Development*

Early childhood and adolescence are critical periods of neurological, physiological, cognitive, and psychosocial development.²⁵ The foundation for healthy development is laid during early childhood (conception to age three).²⁶ As a result, early childhood is often considered the most important period in an individual's development.²⁷ Increasingly, however, research is revealing that adolescence (roughly ages ten to twenty-five) is another critical period of development.²⁸ While the developing brain is most malleable during early childhood, researchers have discovered that the brain undergoes a second period of heightened malleability during adolescence.²⁹ This increased malleability in both early childhood and adolescence is due to both periods' being times of great neuroplasticity—i.e., periods during which the brain has an incredible “potential to change through experience.”³⁰ This increased plasticity makes both early childhood and adolescence periods of not only incredible potential, but also abundant risk.³¹ During these periods, “[i]f we expose our young people to positive, supportive environments, they will flourish. But if the environments are toxic, they will suffer in

23. See Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 397–404 (discussing the emergence of the incorporation of developmental psychology and adolescent brain development research into jurisprudence regarding youth).

24. See NATIONAL JUVENILE DEFENSE STANDARDS, *supra* note 22, at 6.

25. See Joan Stiles & Terry L. Jernigan, *The Basics of Brain Development*, 20 NEUROPSYCHOL. REV. 327, 328 (2010) (“Human brain development is a protracted process that begins in the third gestational week . . . and extends at least through late adolescence, arguably throughout the lifespan.”).

26. See STEINBERG, *supra* note 13, at 9 (“[T]he early years—‘zero to three’ is the popular shorthand—a rare time during which children’s experiences make a major, lasting difference in how their brains develop and their lives unfold.”).

27. See *id.* at 10 (“Until recently, it was believed that no period of development came close to the early years in terms of the potential impact of experience on the brain.”).

28. See *id.* at 5 (defining adolescence as the period from ages ten to twenty-five and explaining that “there are substantial and systematic changes in the brain’s anatomy and functioning during the years between puberty and the early twenties”).

29. *Id.* at 9 (“[A]dolescence is a second period of heightened malleability.”).

30. See *id.* at 9.

31. The brain’s malleability does not permit change only for the better; it also allows change for the worse. Infants who receive cognitive stimulation, like having their parents read to them, thrive because this exposure takes place at a time when the brain is still being shaped by experience. But babies who are neglected or abused early in life can suffer especially long-lasting damage, because the maltreatment has occurred at an age when it is easier for the brain to be harmed by deprivation and other kinds of negative experiences. In other words, the discovery that the brain is highly plastic during adolescence is good news in principle, but it is good news only if we take advantage of it by providing the sorts of experiences to young people that will facilitate positive development and by protecting them from experiences that will hurt them. See *id.* at 10–11.

powerful and enduring ways.”³²

The discovery that adolescence is “a second and final stage of heightened brain plasticity”³³ has important implications for the juvenile justice system, especially in relation to youth who have suffered trauma. Youth who become involved in the delinquency system typically do so during early- to mid-adolescence.³⁴ As a result, youth encounter the juvenile justice system during a period in which the correct interventions can positively impact their future brain development.³⁵ However, youth also encounter the juvenile justice system at a time when the wrong interventions can have negative, long-lasting effects.³⁶ Thus, it is particularly critical for stakeholders in the juvenile justice system—who have an incredible amount of power over youth in the prime of their adolescence—to understand the key research on normative childhood and adolescent development in general, prior to understanding the pivotal research on the impact that trauma, specifically, has on development.

1. *The Brain 101*

Broadly speaking, the brain is “the biological organ responsible for the generation and regulation of behavior.”³⁷ The brain and spinal cord form the central part of the nervous system, which collectively is “tissue [that] is specialized to detect events in the outside world and interpret them in the context of experience [and that] uses this information to guide the selection of appropriate behavioral responses.”³⁸

Neurons are the information-processing cells that make up the brain and central nervous system.³⁹ Neurons vary in size, shape, and function.⁴⁰ They consist of three main parts: the cell body and two types of connective fibers called the axon and dendrites.⁴¹ The cell body houses the cell’s nucleus, which contains the DNA of the neuron.⁴² Neurons connect to one another via the axons and dendrites that

32. *Id.* at 9.

33. *Id.* at 17.

34. In 2013, juvenile courts in the United States handled approximately 1,058,500 cases. Of those cases, approximately 474,500 involved youth between the ages of thirteen and fifteen; 259,800 involved youth age sixteen; and 234,700 involved youth ages seventeen and older. See MELISSA SICKMUND ET AL., U.S. DEP’T OF JUSTICE, OFFICE OF JUVENILE JUSTICE & DELINQUENCY PREVENTION, NAT’L JUVENILE COURT DATA ARCHIVE, EASY ACCESS TO JUVENILE COURT STATISTICS: 1985-2013, <http://www.ojjdp.gov/ojstatbb/ezajcs/asp/demo.asp> (last visited Mar. 31, 2016).

35. *See id.* at 17 (“[A]dolescence is probably the last real opportunity we have to put individuals on a healthy pathway and to expect our interventions to have substantial and enduring effects.”).

36. *See id.* at 9–10.

37. Debra Niehoff, *Invisible Scars: The Neurobiological Consequences of Child Abuse*, 56 DEPAUL L. REV. 847, 849 (2007).

38. *See id.* at 850–51.

39. *See Stiles & Jernigan, supra* note 25, at 329.

40. *See id.*

41. *See id.*

42. *See Niehoff, supra* note 37, at 851.

extend from the cell bodies of different neurons.⁴³

Axons—the wiring of the brain—are long fibers that can extend over long distances and connect neurons.⁴⁴ Axons transmit signals to the dendrites of other neurons.⁴⁵ Myelin, a fatty substance in which axons become wrapped, helps increase the efficiency of signal transmission between neurons by functioning in a similar manner as wiring insulation.⁴⁶

The dendrites receive the signals from the axons of other neurons.⁴⁷ These signals are electrical impulses that start near the cell body and travel the length of the axon before jumping a gap (i.e., synapse) to the dendrite of other cell bodies with the help of chemical signals (i.e., neurotransmitters).⁴⁸ Information-processing networks between different regions of the brain form when individual axons from different neurons in one region of the brain bundle together and connect with the dendrites from groups of neurons in another region of the brain.⁴⁹

Everything the brain does is a result of thousands of neurons located in different regions of the brain—each region with a distinct role to play—coordinating in the manner described.⁵⁰ For instance, two regions of the brain—the limbic system and the frontal lobes of the cerebral cortex—together are responsible for “the recognition and characterization of emotionally significant stimuli, the retention and retrieval of emotional memories, and the regulation of emotional behavior.”⁵¹ The amygdala, a region of neurons within the limbic system, collects information from various sensory regions of the brain and coordinates reflexive action.⁵² The prefrontal cortex, a region of neurons within the cerebral cortex, is more associated with deliberate or intentional action.⁵³ In this way, the prefrontal cortex is responsible for choosing the correct course of action in response to stimuli and for suppressing inappropriate responses or reflexes.⁵⁴

43. See Stiles & Jernigan, *supra* note 25, at 329–30.

44. See *id.* at 330.

45. See *id.*

46. See *id.*

47. See *id.* at 329–30.

48. See Niehoff, *supra* note 37, at 852–53.

49. See Stiles & Jernigan, *supra* note 25, at 330.

50. See *id.* at 329 (“Neurons make connections with other neurons to form the information processing networks that are responsible for all of our thoughts, sensations, feelings and actions.”).

51. Niehoff, *supra* note 37, at 851–52.

52. See *id.* at 852 (“Processes that originate in brain regions associated with senses like vision and hearing, visceral sensation, endocrine function, memory, meaning, and judgment converge in the amygdala, which uses this wealth of information to coordinate reflexive responses to emotional stimuli.”).

53. See *id.* (“The prefrontal cortex, the part of the cerebral cortex located at the very front of the brain, is central to the top-down processing needed to formulate internal representations of goals and organize the voluntary actions necessary to achieve them.”). The cortex often is referred to as the “air traffic control system” of the brain. See, e.g., *Building the Brain’s “Air Traffic Control” System: How Early Experiences Shape the Development of Executive Function* 1, 9 (Harvard Univ., Ctr. on the Developing Child, Working Paper No. 11, 2011), <http://developingchild.harvard.edu/wp-content/uploads/2011/05/How-Early-Experiences-Shape-the-Development-of-Executive-Function.pdf> [hereinafter *Building the Brain’s “Air Traffic Control” System*].

54. See Niehoff, *supra* note 37, at 852. Dr. Niehoff states the following:

2. *Experience Driven Brain Development*

Through at least late adolescence, the brain undergoes a prolonged period of developmental plasticity, which refers to the brain's heightened ability to be shaped and changed.⁵⁵ Because the brain develops new neurons only to a very limited degree after birth,⁵⁶ the most important changes to the brain during childhood and adolescence relate to the manner in which information travels between neurons in different regions of the brain.⁵⁷ Although genetics predispose development to occur in a particular manner, an individual's experiences throughout childhood and adolescence significantly affect how that individual's genetic predispositions are expressed.⁵⁸

Early childhood is marked by an explosion in the number of connections between the neurons created in the brain during the prenatal period.⁵⁹ Indeed, there are so many new neural connections being made during early childhood—and being made without real regard for the number or location of the connections—that this phenomenon is referred to as “synaptic exuberance.”⁶⁰ During early childhood, the number of connections between neurons is believed to peak at approximately twice the number of synapses observed in the adult brain.⁶¹ Left unchecked, such exuberance would result in a very unorganized, inefficient brain.⁶²

The contribution of the prefrontal cortex is especially important when the best course of action is not obvious, or when inputs from different sources conflict The orbitofrontal and ventromedial sectors lying close to the midline and along the lower surface of the prefrontal area respond to expressions of anger and have reciprocal connections with the amygdala. This line of communication enables the prefrontal cortex to suppress inappropriate behavioral responses, such as violent actions, or tone down distressing feelings of anxiety or sadness.

Id.

55. See STEINBERG, *supra* note 13, at 25 (Plasticity “refers to the malleability of the brain during periods in which the brain is being built”).

56. See *id.* at 25–26 (“At birth, we have most of the neurons we will ever have. During the early years of life, our brains don’t produce many new neurons.”); Stiles & Jernigan, *supra* note 25, at 339 (“In the postnatal period, neurogenesis continues to only a very limited degree . . .”).

57. See STEINBERG, *supra* note 13, at 25 (“[T]he most important changes involve the brain’s ‘wiring’—that is, how its one hundred billion neurons are interconnected.”).

58. See CHILD WELFARE INFO. GATEWAY, U.S. DEP’T OF HEALTH & HUMAN SERVS., CHILDREN’S BUREAU, UNDERSTANDING THE EFFECTS OF MALTREATMENT ON BRAIN DEVELOPMENT 2–4 (2015), https://www.childwelfare.gov/pubPDFs/brain_development.pdf [hereinafter UNDERSTANDING THE EFFECTS OF MALTREATMENT]; Stiles & Jernigan, *supra* note 25, at 343–44.

59. See STEINBERG, *supra* note 13, at 26.

60. See *id.* at 26 (“In the first six months after birth, one hundred thousand new connections between neurons are formed *every second*.”); Stiles & Jernigan, *supra* note 25, at 340 (“[I]t is well documented that initial patterns of connectivity in the developing brain are exuberant in terms of both the numbers of connections formed and their topography.”).

61. See Stiles & Jernigan, *supra* note 25, at 328, 340 (recognizing that the number of synapses in childhood far exceeds that in adulthood and that childhood levels plateau at nearly twice the number observed in the adult brain).

62. See STEINBERG, *supra* note 13, at 26.

Luckily, during childhood and adolescence, two additional developmental processes—synaptic pruning and myelination—take place and are critical to improving the efficiency of the brain. Synaptic pruning is the elimination of unnecessary or underutilized connections between neurons created during the period of synaptic exuberance.⁶³ Synaptic pruning thus determines the specific pathways by which information will travel between different groups of neurons in different regions of the brain.⁶⁴ Myelination is the wrapping of the brain’s “wires” with a form of insulation.⁶⁵ Myelination thus increases the speed and fidelity with which information is transmitted from one neuron to another, as well as the durability of the connection.⁶⁶ Together, pruning and myelination make the brain more efficient by reducing the number of pathways by which information can travel, while increasing the speed at which information can travel along the remaining pathways.⁶⁷

Both pruning and myelination are driven, in large part, by an individual’s experiences during this period of plasticity.⁶⁸ Experience determines which neural connections are kept and which are discarded during pruning. Specifically, connections that are used often are retained and strengthened, while redundant or unused connections become weaker or are eliminated entirely.⁶⁹ Experience also determines which neural pathways are reinforced and made faster during myelination.⁷⁰ For instance, repetitive use of a particular neural connection spurs the creation of myelin around the neural pathways in the surrounding region.⁷¹ As a result, experience calibrates the organization, route, and speed of the brain’s information processing, to the environment in which the brain needs to perform.⁷²

Developmental plasticity is a key evolutionary mechanism by which humans adapt to their environments and is an integral part of normal development.⁷³ However, it is important to note that the brain “will adapt to a negative environ-

63. See Stiles & Jernigan, *supra* note 25, at 340.

64. See STEINBERG, *supra* note 13, at 25–36.

65. See *id.* at 32–33.

66. See *id.*

67. See *id.* at 25–45 (discussing how pruning and myelination work together to make the brain more efficient).

68. See Bruce D. Perry, *The Neurodevelopmental Impact of Violence in Childhood*, in *TEXTBOOK OF CHILD AND ADOLESCENT FORENSIC PSYCHIATRY 4* (D. Schetky & E.P. Benedek eds., 2001), https://childtrauma.org/wp-content/uploads/2013/11/Neurodevel_Impact_Perry.pdf (“[T]he developing brain organizes in response to the pattern, intensity and nature of sensory perceptual and affective experience of events during childhood.”); Niehoff, *supra* note 37, at 854 (defining neural or synaptic plasticity as the “remodeling of synapses and dendrites in the wake of experience”).

69. See STEINBERG, *supra* note 13, at 33–34; Perry, *supra* note 68, at 4 (“The more any neural system is activated, the more it will modify and ‘build’ in the functional capacities associated with that activation.”).

70. See STEINBERG, *supra* note 13, at 34.

71. See *id.*

72. See Stiles & Jernigan, *supra* note 25, at 344 (“[T]hroughout development experience plays an essential role in establishing and refining neural organization in ways that allow the organism to adapt to the contingencies of the world in which it lives.”).

73. See *id.*; UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 3–4.

ment just as readily as it will adapt to a positive one.”⁷⁴ Thus, plastic adaptation leads to experiences—both good and bad—becoming hardwired into the brain of the individual over the course of his or her childhood and adolescence.⁷⁵ Consequently, experience reorganizes the brain structurally and functionally in a way that impacts how the individual responds to future stimuli and environments.⁷⁶

3. *Timing of Brain Development*

Besides experience, time also plays a role in the brain’s development, as not all regions of the brain develop concomitantly or at the same speed.⁷⁷ The brain develops from the most primitive to the most complex in terms of both order and timing, with the most complex regions of the brain not fully developed until the mid-twenties.⁷⁸ Specifically, the brain stem and midbrain—the regions responsible for bodily functions such as heart rate, breathing, and sensory abilities—are among the first areas of the brain to develop fully, while the limbic system and the cortex—the regions associated with more complex brain functions such as emotion, reason, and logic—are not fully developed until late in adolescence.⁷⁹ The ability of youth to control their behavior is implicated in important respects by the fact that the prefrontal cortex, which is often referred to as the “air traffic control system” of the brain,⁸⁰ is among the last to develop fully.⁸¹

B. *The Normative Impairments of Adolescence*

Psychological and neurological research over the last twenty-five years has consistently revealed significant impairments in adolescents’ decision-making abilities relative to those of adults. First and foremost, as described above, neurological development research has demonstrated that the regions of the brain responsible for executive functioning—i.e., skills like working memory; self-regulation; and task flexibility, planning, and execution—continue to develop through the mid-twenties.⁸² Thus, while studies have demonstrated that a youth’s “cold cognitive” abilities may begin to approximate those of an adult by about the

74. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 4.

75. See Stiles & Jernigan, *supra* note 25, at 344.

76. See *id.* at 344–45.

77. See *The Timing and Quality of Early Experiences Combine to Shape Brain Architecture* 3–4 (Harvard Univ., Ctr. on the Developing Child, Working Paper No. 5, 2007), http://developingchild.harvard.edu/wp-content/uploads/2007/05/Timing_Quality_Early_Experiences-1.pdf.

78. See *id.*; STEINBERG, *supra* note 13, at 76–78.

79. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 2–3; STEINBERG, *supra* note 13, at 26.

80. See, e.g., *Building the Brain’s “Air Traffic Control” System*, *supra* note 53, at 1, 9.

81. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 3.

82. See STEINBERG, *supra* note 13, at 76–78; *Building the Brain’s “Air Traffic Control” System*, *supra* note 53; see also Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 397.

age of sixteen,⁸³ youth, in making split-second decisions, may still rely on the more developed, lower areas of their brains and their limbic systems, which govern reflex and emotion, because they still have not developed a mature cortex to override these other areas of the brain.⁸⁴

Additionally, deficiencies in psychosocial development may further impair youth's decision-making abilities relative to those of adults. Research has found that youth are highly aroused and highly sensitive to feedback, making them particularly susceptible to the influence of their peers in a way that adults are not.⁸⁵ Youth are also more likely to underestimate risk and to focus on the short term rather than the long term.⁸⁶ Moreover, youth, compared to adults, have greater difficulty regulating their emotions and impulses.⁸⁷ Indeed, in light of these impairments of adolescence, as well as research affirming the positive outcomes associated with developing the ability to control impulses at a younger age, prominent researcher Dr. Laurence Steinberg concluded that the most important societal goal in terms of youth development should be to build the capacity for self-regulation.⁸⁸

C. Legal Accommodation of Normative Development

Legislatures and courts in the civil context have looked to age and maturity, rather than an individual's actions, as the dominant frame through which to apportion rights and responsibilities to youth regarding matters such as selling property, contracting, and marrying.⁸⁹ In contrast, legislatures and courts in the

83. See STEINBERG, *supra* note 13, at 202–04 (discussing the difference between cold cognition and hot cognition). Cold cognition occurs when the brain is calm and not subject to outside peer or time pressure. See *id.* Hot cognition, on the other hand, takes place when the individual is exposed to emotional stimulation, is tired, or must think quickly. See *id.*

84. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 3; see also Mark R. Fondacaro et al., *The Rebirth of Rehabilitation in Juvenile and Criminal Justice: New Wine in New Bottles*, 41 OHIO N.U. L. REV. 697, 717 (2015) [hereinafter Fondacaro, *The Rebirth of Rehabilitation*] (“[R]esearchers concluded that due to a tension between a mature reward circuit and a less mature cortex, adolescents exhibit less self-control.” (citing B.J. Casey & Kristina Caudle, *The Teenage Brain: Self Control*, 22 CURRENT DIRECTIONS PSYCHOL. SCI. 82, 86 (2013))).

85. See Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 397–99. Feedback is “[t]he modification or control of a process or system by its results or effects, e.g., in a biochemical pathway or behavioral response.” *Feedback*, OXFORD DICTIONARIES, http://www.oxforddictionaries.com/us/definition/american_english/feedback (last visited Apr. 5, 2016).

86. See *id.*

87. See *id.*

88. See STEINBERG, *supra* note 13, at 16 (“The capacity for self-regulation is probably the single most important contributor to achievement, mental health, and social success This makes developing self-regulation the central task of adolescence, and the goal that we should be pursuing as parents, educators, and health care professionals.”).

89. See *J.D.B. v. North Carolina*, 131 S. Ct. 2394, 2403–04 (2011). In *J.D.B.*, the Supreme Court stated the following:

The law has historically reflected the same assumption that children characteristically lack the capacity to exercise mature judgment and possess only an incomplete ability to understand the

criminal and delinquency context have recently favored the frame of individual action over the frame of age and maturity in determining such rights and responsibilities.⁹⁰ As a result, where youthfulness has been a basis for creating categorical rules regarding rights and responsibilities in civil law for decades, criminal and delinquency law have lagged behind.

Increasingly, however, courts and legislatures across the country are recognizing that criminal and delinquency laws need to meaningfully accommodate the developmental differences between youth and adults.⁹¹ Indeed, over the last ten years, the Supreme Court of the United States has set a good example for lower courts and legislatures. Starting in 2005 with *Roper v. Simmons*, the Supreme Court held that the Eighth and Fourteenth Amendments to the Constitution prohibited the execution of individuals younger than eighteen years of age.⁹² In doing so, the Court pointed to three key differences between youth and adults—a youth’s “objective immaturity, vulnerability, and lack of true depravity”—that demonstrate that a youth cannot be classified reliably with those offenders deserving of the death penalty, despite the youth’s commission of a capital offense.⁹³ Five years later, in *Graham v. Florida*, the Supreme Court recognized that research “continue[s] to show fundamental differences between juvenile and adult minds”⁹⁴ and concluded that a youth’s immaturity and capacity for change favored the imposition of a categorical rule prohibiting life without parole for non-homicide offenses.⁹⁵ About a year later, in holding that age is an objective factor that must be taken into account when determining whether a suspect was in custody for *Miranda* purposes, the Supreme Court found that the differences between youth and adults, including immaturity and heightened susceptibility to outside pressures, were “commonsense conclusions” that “restate what ‘any parent knows’—indeed, what any person knows—about children generally.”⁹⁶ Finally,

world around them. Like this Court’s own generalizations, the legal disqualifications placed on children as a class—*e.g.*, limitations on their ability to alienate property, enter a binding contract enforceable against them, and marry without parental consent—exhibit the settled understanding that the differentiating characteristics of youth are universal.

Id. (internal citations omitted).

90. See Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 395–96 (explaining that state legislatures in the 1980s and 1990s “attacked notions of childhood” and chose to pass more punitive laws to address delinquent acts, including transferring youth to adult court).

91. See *id.* at 401–02 (“We are clearly at a turning point in the juvenile court’s history.”); see generally Marsha L. Levick & Elizabeth-Ann Tierney, *The United States Supreme Court Adopts a Reasonable Juvenile Standard in J.D.B. v. North Carolina for Purposes of the Miranda Custody Analysis: Can a More Reasoned Justice System for Juveniles Be Far Behind?*, 47 HARV. C.R.–C.L. L. REV. 501 (2012).

92. See *Roper v. Simmons*, 543 U.S. 551, 578 (2005).

93. See *id.* at 569–73 (“The differences between juvenile and adult offenders are too marked and well understood to risk allowing a youthful person to receive the death penalty despite insufficient culpability.”).

94. *Graham v. Florida*, 560 U.S. 48, 68 (2010).

95. See *id.*

96. See *J.D.B. v. North Carolina*, 131 S. Ct. 2394, 2403 (2011) (“A child’s age is far more than a chronological fact. It is a fact that generates commonsense conclusions about behavior and perception. Such conclusions apply

the following year, in *Miller v. Alabama*, the Supreme Court extended *Graham's* prohibition of the imposition of life without parole to apply to youth in homicide cases as well, concluding the following:

[A] sentencer misses too much if he treats every child as an adult. To recap: Mandatory life without parole for a juvenile precludes consideration of his chronological age and its hallmark features—among them, immaturity, impetuosity, and failure to appreciate risks and consequences. It prevents taking into account the family and home environment that surrounds him—and from which he cannot usually extricate himself—no matter how brutal or dysfunctional And finally, this mandatory punishment disregards the possibility of rehabilitation even when the circumstances most suggest it.⁹⁷

The Supreme Court is not the only institution to recognize the need for change. Legislatures across the country over the last ten years have begun to reverse the damage created by the harsh tough-on-crime approach of the 1980s and '90s, which sought to treat youth more like adults.⁹⁸ Between 2005 and 2014, eleven states passed laws limiting the housing of youth in adult jails; five states raised the age of their juvenile court jurisdiction, thereby reducing the number of youth automatically tried as adults; fifteen states reformed their transfer laws, “making it more likely that youth will [be] in the juvenile justice system”; and twelve states changed their “sentencing laws to take into account the developmental differences between youth and adults.”⁹⁹

Twenty-five years of research has now firmly established that the hypothetical “normal youth” is fundamentally different, from a developmental standpoint, from the “normal adult” in ways that are legally relevant. As a result, the developmental differences between youth and adults, demonstrated through years of psychological and neurological research, presented the courts and legislatures with an objective scientific basis for creating categorical rules essentially recognizing the need to accommodate “youthfulness” in the law.¹⁰⁰

broadly to children as a class. And, they are self-evident to anyone who was a child once himself, including any police officer or judge.” (internal citations omitted)).

97. *Miller v. Alabama*, 132 S. Ct. 2455, 2468 (2012).

98. See Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 395–97.

99. See CAMPAIGN FOR YOUTH JUSTICE, STATE TRENDS: UPDATES FROM THE 2013-2014 LEGISLATIVE SESSION 2–3 (2014), http://www.campaignforyouthjustice.org/images/nationalreports/state_trends_updates_from_the_2013-2014_legislative_session.pdf. Typically, the age of juvenile court jurisdiction is the age at which cases against delinquent youth automatically originate in juvenile court. See *id.* at 4–5. Transfer statutes provide a mechanism for youth in the juvenile justice system to be transferred to adult court. See *id.* at 5.

100. See *Miller*, 132 S. Ct. at 2464–65 (“Our decisions rested not only on common sense—on what ‘any parent knows’—but on science and social science as well.”); see also, e.g., *Graham*, 560 U.S. at 68–69 (citing the amici curiae briefs submitted by the American Medical Association and the American Psychological Association); *Roper v. Simmons*, 543 U.S. 551, 569–70 (2005) (citing scientific and sociological studies to find that, compared to adults, youth are more immature, vulnerable to negative influences, and amenable to change).

II. TRAUMA CAN AMPLIFY THE NORMATIVE IMPAIRMENTS OF ADOLESCENCE

A. *An Introduction to Trauma*

To understand trauma's impact on the brain and the body, it is important to understand that trauma is a type of stress and that stress itself exists on a spectrum.¹⁰¹ *Positive stress* exists at one end of the spectrum and refers to "moderate, short-lived stress responses, such as brief increases in heart rate or mild changes in the body's stress hormone levels."¹⁰² Positive stress tends to be milder and more predictable than other forms of stress.¹⁰³ "Adverse events that provoke positive stress responses tend to be those that a child can learn to control and manage well with the support of caring adults, and which occur against the backdrop of generally safe, warm, and positive relationships."¹⁰⁴ Positive stress is a critical part of the normal process of child development.¹⁰⁵

Toxic stress exists at the other end of the stress spectrum and refers to "strong, frequent, or prolonged activation of the body's stress management system."¹⁰⁶ Toxic stress tends to be unpredictable, severe, and/or experienced without having access to support from caring adults.¹⁰⁷ Causes of toxic stress include "extreme poverty in conjunction with continuous family chaos, recurrent physical or emotional abuse, chronic neglect, severe and enduring maternal depression, persistent parental substance abuse, or repeated exposure to violence in the community or within the family."¹⁰⁸ In contrast to positive stress, which is essential to healthy development, toxic stress can adversely affect development in a number of ways, including altering brain architecture or recalibrating an individual's stress response system to become more sensitive and

101. See BRUCE D. PERRY, CHILD TRAUMA ACAD., STRESS, TRAUMA AND POST-TRAUMATIC STRESS DISORDERS IN CHILDREN: AN INTRODUCTION 2 (2007), https://childtrauma.org/wp-content/uploads/2013/11/PTSD_Caregivers.pdf [hereinafter PERRY, STRESS, TRAUMA AND PTSD] ("Traumatic stress is an extreme form of stress.")

102. See *Excessive Stress Disrupts the Architecture of the Developing Brain* 1 (Harvard Univ., Ctr. on the Developing Child, Working Paper No. 3, 2014), http://developingchild.harvard.edu/wp-content/uploads/2005/05/Stress_Disrupts_Architecture_Developing_Brain-1.pdf [hereinafter *Excessive Stress Disrupts the Architecture of the Developing Brain*].

103. See *id.* at 1.

104. See *id.* (noting that examples of positive stress include meeting new people, attending one's first day of school, or overcoming a fear).

105. See *id.*

106. See *id.* at 2; see also HARVARD UNIV., CTR. ON THE DEVELOPING CHILD, THE SCIENCE OF EARLY CHILDHOOD DEVELOPMENT: CLOSING THE GAP BETWEEN WHAT WE KNOW AND WHAT WE DO 10 (2007), http://developingchild.harvard.edu/wp-content/uploads/2015/05/Science_Early_Childhood_Development.pdf [hereinafter THE SCIENCE OF EARLY CHILDHOOD DEVELOPMENT] (defining toxic stress as "associated with strong and prolonged activation of the body's stress management systems in the absence of the buffering protection of adult support," and noting "extreme poverty in conjunction with continuous family chaos, recurrent physical or emotional abuse, chronic neglect, severe and enduring maternal depression, persistent parental substance abuse, or repeated exposure to violence in the community or within the family" as toxic stress's precipitants).

107. See *Excessive Stress Disrupts the Architecture of the Developing Brain*, *supra* note 102, at 2.

108. See THE SCIENCE OF EARLY CHILDHOOD DEVELOPMENT, *supra* note 106, at 10.

over-responsive.¹⁰⁹

Tolerable stress, sometimes referred to as *acute stress*, occupies the middle of the spectrum. Tolerable stress is characterized by “stress responses that have the potential to negatively affect the architecture of the developing brain but generally occur over limited time periods that allow for the brain to recover and thereby reverse potentially harmful effects.”¹¹⁰ Tolerable stress is distinguishable from toxic stress in two key respects. First, by definition, tolerable stress tends to be more moderate in terms of occurrence and severity.¹¹¹ Second, tolerable stress occurs primarily in the context of an ongoing relationship with supportive adults.¹¹² In certain circumstances, tolerable stress can actually have a positive impact on development.¹¹³ However, in the absence of supportive relationships, tolerable stress can become toxic.¹¹⁴ Examples of tolerable stress include experiencing a serious injury or the loss of a loved one, within the context of a positive support system that helps buffer the impact of the stress.¹¹⁵

For the purposes of this Article, “trauma” refers to adverse experiences that rise to the level of toxic stress.¹¹⁶ This Article often will refer to “adverse childhood experiences” as a proxy for trauma. Adverse childhood experiences (“ACEs”) are a list of ten traumatic experiences that are commonly associated with toxic stress.¹¹⁷ The impact of ACEs on the neurobiological, physiological, and psychological development of individuals has been extensively studied. As a result, this

109. See *Excessive Stress Disrupts the Architecture of the Developing Brain*, *supra* note 102, at 2 (citing J.P. Shonkoff et al., *Neuroscience, Molecular Biology, and the Childhood Roots of Health Disparities: Building a New Framework for Health Promotion and Disease Prevention*, 301 J. AM. MED. ASS’N 2252 (2009)).

110. See *id.* at 1.

111. See *id.* (listing examples of tolerable stress, including the loss or serious illness of a loved one, divorce, or a frightening accident).

112. See *id.* (“Indeed, the presence of supportive adults who create safe environments that help children learn to cope with and recover from major adverse experiences is one of the critical ingredients that make serious stressful events . . . tolerable.”).

113. See *id.*

114. See *id.* at 1–2.

115. See *id.* at 1.

116. Throughout the course of this Article, the terms “complex trauma,” “adverse childhood experiences,” “toxic stress,” or “chronic unpredictable toxic stress” also may be used to refer to the general concept of trauma. See DONNA JACKSON NAKAZAWA, *CHILDHOOD DISRUPTED: HOW YOUR BIOGRAPHY BECOMES YOUR BIOLOGY, AND HOW YOU CAN HEAL* 66–67 (2015).

117. CTRS. FOR DISEASE CONTROL & PREVENTION, NAT’L CTR. FOR INJURY PREVENTION & CONTROL, *PREVALENCE OF INDIVIDUAL ADVERSE CHILDHOOD EXPERIENCES*, <http://www.cdc.gov/violenceprevention/acestudy/prevalence.html> (last updated May 13, 2014) [hereinafter CDC ACE Study]. The ACEs include experiences involving physical abuse, emotional abuse, sexual abuse, emotional neglect, physical neglect, household substance abuse, household mental illness, parental separation, witnessing domestic violence against one’s mother, and having a household member incarcerated. See *id.* But it is important to note that the adverse childhood experiences used in the ACE Study are not meant to be exhaustive. These particular ten ACEs were used for the survey because they were identified as among the most common among a sample of 286 interviews conducted by the researchers while developing the ACE Study. See NAKAZAWA, *supra* note 116, at 12. Thus, just because a particular childhood experience is not within the confines of the ACE survey does not mean that such an experience could not rise to the level of toxic stress.

body of research provides helpful insight into the impact that trauma generally has on development.¹¹⁸

B. Trauma Embeds Itself in the Brain and Body

1. The Stress Response System

Before discussing how toxic stress (i.e., trauma) impacts child development and embeds itself in the brain and body, it is important to gain an understanding of the brain and body's stress response system. The optimal stress response can be described as a cycle with two key features: the ability to respond appropriately and the ability to calm down when the stress has dissipated.¹¹⁹ When there is no stress, an individual's body is in a place of rest or equilibrium that is referred to as homeostasis.¹²⁰ When something stressful occurs in the environment, the brain and the body together react in a manner that prepares the individual to respond to that stressor.¹²¹ Specifically, a region of the brain (i.e., the hypothalamus) tells different glands in the body (i.e., the pituitary and adrenal glands) to flood the body with chemicals (i.e., adrenaline and cortisol) that will increase heart rate, increase respiration, and cause the muscles to tighten in preparation.¹²² Collectively, this arrangement between the hypothalamus and glands is called the hypothalamic-pituitary-adrenal ("HPA") axis.¹²³ When the crisis has ended, the brain and body again work together to return the body to homeostasis.¹²⁴ Specifically, the production of cortisol itself sends signals back to the brain and pituitary gland, which, in turn, stop signaling the adrenal gland to produce cortisol.¹²⁵ When the production of these chemicals ceases, the bodily functions return to their resting

118. "The use of the ACE score as a measure of the cumulative effect of traumatic stress exposure during childhood is consistent with the latest understanding of the effects of traumatic stress on neurodevelopment." See Michael T. Baglivio et al., *The Prevalence of Adverse Childhood Experiences (ACE) in the Lives of Juvenile Offenders*, OJJDP J. JUV. JUST. 2 (2014), <http://www.journalofjuvjustice.org/JOJJ0302/JOJJ0302.pdf>.

119. See Jeongok G. Logan & Debra J. Barksdale, *Allostasis and Allostatic Load: Expanding the Discourse on Stress and Cardiovascular Disease*, 17 J. CLINICAL NURSING 201, 201–02, 204–06 (2008).

120. Niehoff, *supra* note 37, at 855; see also PERRY, STRESS, TRAUMA AND PTSD, *supra* note 101, at 15 (defining stress as "[a]ny challenge or condition that forces the regulating physiological and neurophysiological systems to move outside of their normal dynamic activity. Stress occurs when homeostasis is disrupted.")

121. See NAKAZAWA, *supra* note 116, at 29–30; Niehoff, *supra* note 37, at 855.

122. See NAKAZAWA, *supra* note 116, at 29; Niehoff, *supra* note 37, at 855.

123. See Niehoff, *supra* note 37, at 855.

124. See *id.* at 855–57.

125. See *id.* Dr. Niehoff states:

Cortisol controls its own secretion, acting on receptors in the brain and the pituitary to reduce the production of CRF [corticotropin-releasing factor] and ACTH [adrenocorticotrophic hormone], turning off the signal to the adrenal glands. Additional restraint is provided by the hippocampus, another element of the limbic system. Exquisitely sensitive to cortisol levels, the axons of hormone-activated hippocampal neurons project to the hypothalamus, where they inhibit the secretion of CRF and turn off the neuroendocrine stress response at its source.

Id. at 856–57.

state.¹²⁶

This ability to adapt to stress—both to respond to stress and to calm down once the stressor has passed—is called allostasis. Allostasis is essentially an individual's ability to respond to the environment while maintaining stability through that change.¹²⁷ Being able to adapt and respond to mild or moderate stressors is an essential part of healthy development.¹²⁸

While learning to respond to stress is a normal part of healthy development, there is no doubt that the stress response itself taxes the brain and the body.¹²⁹ When stress is moderate, controlled, and predictable—as is the case with positive and some tolerable stress—the stress response system becomes stronger and more flexible, promoting resilience when confronting future stress.¹³⁰ However, when the body is subjected to strong, frequent, and repeated activation of the stress response system without the opportunity to recover—as is the case with toxic stress, like ACEs—the body may experience a phenomenon called allostatic load.¹³¹ Allostatic load is “the state in which the normal allostatic processes wear out or fail to disengage or shut off and therefore, the physiological systems are not able to adapt.”¹³² In other words, allostatic load is a result of the body's suboptimal adaptation to stress due to an overactive and/or inefficiently managed allostatic response.¹³³

Over time, allostatic load manifests in accumulated strain on an individual's body. When an individual endures chronic stress, the stress response system does not return to a recovery state, but instead continues to flood the brain and body with stress hormones.¹³⁴ The constant release of these stress hormones can lead to unregulated inflammation in the body, which in turn can lead to tissue damage and disease.¹³⁵ For instance, research demonstrates that stressors such as losing a child or an adult sibling can increase the likelihood of acquiring multiple sclerosis or experiencing a heart attack.¹³⁶

126. See *id.* at 855–57.

127. See Logan & Barksdale, *supra* note 119, at 201–02 (“Allostasis is the extension of the concept of homeostasis and represents the adaptation process of the complex physiological system to physical, psychosocial and environmental challenges or stress.”).

128. See *Excessive Stress Disrupts the Architecture of the Developing Brain*, *supra* note 102, at 1.

129. See Logan & Barksdale, *supra* note 119, at 204 (“[S]tress (external challenge) initiates strain on multiple biological systems including organs and tissues . . .”).

130. See Declaration of Bruce Perry at ¶ 18, *Peter P. v. Compton Unified Sch. Dist.*, No. CV 15-3726-MWF (PLAx) (C.D. Cal. July 9, 2015), ECF No. 42-15 [hereinafter Perry Declaration]; see also NAKAZAWA, *supra* note 116, at 29, 40–42.

131. See Logan & Barksdale, *supra* note 119, at 202–04.

132. See *id.* at 202.

133. See *id.* at 201, 203.

134. See NAKAZAWA, *supra* note 116, at 29–31, 61.

135. See *id.*; see also Logan & Barksdale, *supra* note 119, at 203.

136. See NAKAZAWA, *supra* note 116, at 31.

2. *The Adverse Childhood Experience Study*

In 1998, Dr. Vincent J. Felitti and his colleagues at Kaiser Permanente and the Centers for Disease Control and Prevention (“CDC”) published a seminal research study exploring “[t]he relationship of health risk behavior and disease in adulthood to the breadth of exposure to childhood emotional, physical, or sexual abuse, and household dysfunction during childhood.”¹³⁷ The study, known as the Adverse Childhood Experience Study (“ACE Study”), used a self-report survey about ACEs that was mailed to nearly 28,500 patients, who completed a standardized medical evaluation at Kaiser Permanente’s San Diego health appraisal clinic.¹³⁸ The self-report ACE survey asked whether the respondent, prior to the age of eighteen, suffered physical neglect or abuse at the hands of a parent or other adult in the household; suffered emotional neglect or abuse at the hands of a parent or other adult in the household; was sexually abused by an adult or person at least five years older; lived with someone who abused substances; lived with someone who suffered from mental illness; had a mother or stepmother who was physically abused; and/or lived with someone who went to prison.¹³⁹ Researchers then compared the number of adverse experiences to adult risk behaviors, health status, and disease, as reported in the patients’ medical histories and in the health appraisal clinic’s questionnaire.¹⁴⁰ In total, the ACE Study included a sample of more than 17,000 patients who were primarily white, over forty years of age, and had at least graduated high school.¹⁴¹

137. See Vincent J. Felitti et al., *Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study*, 14 AM. J. PREVENTIVE MED. 245, 245 (1998).

138. See *id.* at 246–49. The original ACE Study administered the survey in two waves. Wave I was conducted between August and November 1995 and January to March 1996. *Id.* Wave II was conducted between June and October 1997. The Wave II survey results and analysis were under evaluation at the time the original ACE Study was published. *Id.* As a result, the analysis outlined in the article was based solely on Wave I. *Id.* Compiled data from both waves can be found at <http://www.cdc.gov/violenceprevention/acestudy/index.html>. See also Robert Anda et al., *The Enduring Effects of Abuse and Related Adverse Experiences in Childhood: A Convergence of Evidence from Neurobiology and Epidemiology*, 256 EUR. ARCHIVE OF PSYCHIATRY & CLINICAL NEUROSCI. 174 (2006) (compiling data from both Waves I and II, but categorizing according to eight, not ten, adverse childhood experiences).

139. See Felitti et al., *supra* note 137, at 248 tbl.1. The current ACE survey asks the same questions used by Felitti and his colleagues, but divides those questions into nine categories rather than seven categories. Specifically, the current survey separates physical abuse from physical neglect, and emotional abuse from emotional neglect. Compare ACE Survey, *infra* Appendix 1, with Felitti et al., *supra* note 137, at 248 tbl.1. The current ACE survey also includes a tenth category—loss of a parent to separation, divorce, abandonment, or another reason—that was not mentioned in the published 1998 study. Compare ACE Survey, *infra* Appendix 1, with Felitti et al., *supra* note 137, at 248 tbl.1.

140. See Felitti et al., *supra* note 137, at 248 tbl.1.

141. See CTRS. FOR DISEASE CONTROL & PREVENTION, NAT’L CTR. FOR INJURY PREVENTION & CONTROL, ACE STUDY PARTICIPANT DEMOGRAPHICS (last updated May 13, 2014), <http://www.cdc.gov/violenceprevention/acestudy/demographics.html> (noting nearly 75% of the survey respondents were white, nearly 85% were over forty years of age, and nearly 93% were high school graduates).

The ACE Study had a number of important findings. First, the ACE Study revealed a shockingly high prevalence of ACEs among a middle-class population.¹⁴² According to the survey data, nearly two-thirds of all respondents reported experiencing at least one ACE, and more than 12.5% reported experiencing four or more ACEs.¹⁴³ Second, the ACE Study revealed that individuals who experienced one ACE probably also experienced at least one other ACE.¹⁴⁴ Third, the study's findings confirmed Dr. Felitti's hypothesis about the existence of a connection between experiencing adversity in childhood, on the one hand, and negative health outcomes in adulthood, on the other hand. Specifically, the ACE Study found the following: (1) both the prevalence and relative likelihood of the presence of myriad specific health risk factors increased with the number of ACEs reported by a patient;¹⁴⁵ (2) the total number of present health risk factors reported per individual increased as the number of ACEs reported increased;¹⁴⁶ and (3) the more ACEs reported, the higher the relative odds of having ischemic heart disease, cancer, emphysema, hepatitis, skeletal fractures, and poor self-rated health.¹⁴⁷

Since the initial ACE Study, more than 1500 studies have cited ACE research, including more than seventy additional papers co-authored by Dr. Felitti.¹⁴⁸ Subsequent research has revealed that ACEs increase the odds of incarceration, poor educational outcomes, poor employment outcomes, involvement in violence, and having been pregnant or caused someone to become pregnant prior to the age of eighteen.¹⁴⁹ Importantly, research has also begun to demonstrate that ACEs not

142. See Baglivio et al., *supra* note 118, at 2 (“[T]he prevalence of ACEs among this middle-class population shocked many at the time . . .”).

143. Compare CDC ACE Study, *supra* note 117 (finding that 36.1% of respondents reported zero ACEs; 26.0% reported one ACE; 15.9% reported two ACEs; 9.5% reported three ACEs; and 12.5% reported four or more ACEs), with Felitti et al., *supra* note 137, at 248 tbl.1 (finding that 49.5% of respondents reported zero ACEs; 24.9% reported one ACE; 12.5% reported two ACEs; 6.9% reported three ACEs; and 6.2% reported four ACEs). It is important to note that the ACE prevalence data for the entire Wave I and Wave II subset in the CDC study is reported using the ten current ACE categories rather than the original seven categories used by Felitti et al. in their 1998 article.

144. See Felitti et al., *supra* note 137, at 249 (using the initial methodology, “[f]or persons reporting any single category of exposure, the probability of exposure to any additional category ranged from 65%–93%,” depending on the category of exposure); NAKAZAWA, *supra* note 116, at 14 (“And 87 percent of those who answered yes to one ACE question also had additional Adverse Childhood Experiences.”).

145. See Felitti et al., *supra* note 137, at 253 (listing health risk factors including smoking, severe obesity, depression, attempted suicide, alcoholism, illicit drug use, injecting drugs, having 50 or more intercourse partners, and contracting a sexually transmitted disease).

146. See *id.* at 250 (finding that 56% of those reporting no ACEs had none of the ten risk factors, whereas only 14% of persons reporting four or more ACEs had no risk factors; in contrast, only 1% of persons reporting no ACEs had four or more risk factors, whereas 7% of persons reporting four or more ACEs had four or more risk factors).

147. See *id.* However, no statistically significant dose-response relationship was found for stroke or diabetes.

148. See NAKAZAWA, *supra* note 116, at 15–16.

149. See Mark A. Bellis et al., *Adverse Childhood Experiences: Retrospective Study to Determine Their Impact on Adult Health Behaviours and Health Outcomes in a UK Population*, 1 J. PUB. HEALTH 11, 85–88 (finding that compared with those with zero ACEs, individuals with four or more ACEs had adjusted odds ratios of the following: 8.83 for incarceration; 2.94 for unemployment/long-term disability; 1.69 for no educational

only lead to poor long-term adult health outcomes, but also cause immediate negative consequences, including chromosome damage¹⁵⁰ and physiological and functional changes to the developing brain.¹⁵¹

3. *How Toxic Stress Impacts Child Development*

Adverse childhood experiences are especially harmful because they are experienced during the period of developmental plasticity when the youth is particularly sensitive to his experiences and environment.¹⁵² As a result, it should come as no surprise that toxic stress has significant negative effects on the developing brain and body.¹⁵³

First, research during the last ten years has identified observable, negative impacts of toxic stress on the structure and activity of the brain of individuals who experienced toxic stress during their childhood. For instance, youth who have experienced toxic stress are inclined to have (1) decreased volume in the corpus callosum, which is the brain region responsible for communication between the two brain hemispheres, as well as a number of other processes including arousal, emotion, and higher cognition;¹⁵⁴ (2) decreased volume in the cerebellum, which helps coordinate motor skills and executive functioning;¹⁵⁵ (3) decreased electrical activity, which can result in difficulties with attention and learning.¹⁵⁶ Youth who have experienced toxic stress also can have decreased volume in the prefrontal cortex, which is critical to working executive functioning and self-regulation.¹⁵⁷ Toxic stress in childhood can also lead to over-activity in the amygdala, which

qualifications; 7.92 for hitting someone in the last twelve months; 5.18 for being hit by someone in the last twelve months; and 4.46 for having caused/become unintentionally pregnant before age 18).

150. See I. Shalev et al., *Exposure to Violence During Childhood is Associated with Telomere Erosion from 5 to 10 Years of Age: A Longitudinal Study*, 18 *MOLECULAR PSYCHIATRY* 576 (2013) (finding children who experience two or more kinds of exposure to violence showed significantly more telomere erosion than the control group, even after adjusting for sex, socioeconomic status, and body mass index).

151. See Baglivio et al., *supra* note 118, at 2. For examples of the physiological and functional changes to the brain resulting from toxic stress, see *infra* notes 154–62 and accompanying text.

152. Niehoff, *supra* note 37, at 857–61 (discussing the manner in which the brain and stress response system adapt to toxic stress experiences in childhood); Perry, *supra* note 68, at 8–10 (discussing how states—like fight, flight, or disassociation—can become traits).

153. See *THE SCIENCE OF EARLY CHILDHOOD DEVELOPMENT*, *supra* note 106, at 2 (“Toxic stress in early childhood is associated with persistent effects on the nervous system and stress hormone systems that can damage developing brain architecture and lead to lifelong problems in learning, behavior, and both physical and mental health.”).

154. See *UNDERSTANDING THE EFFECTS OF MALTREATMENT*, *supra* note 58, at 6; Niehoff, *supra* note 37, at 865.

155. See *UNDERSTANDING THE EFFECTS OF MALTREATMENT*, *supra* note 58, at 6.

156. See *id.*; *The Science of Neglect: The Persistent Absence of Responsive Care Disrupts the Developing Brain* 5 (Harvard Univ., Ctr. on the Developing Child, Working Paper No. 12, 2012), <http://developingchild.harvard.edu/wp-content/uploads/2012/05/The-Science-of-Neglect-The-Persistent-Absence-of-Responsive-Care-Disrupts-the-Developing-Brain.pdf> [hereinafter *The Science of Neglect*].

157. See *UNDERSTANDING THE EFFECTS OF MALTREATMENT*, *supra* note 58, at 6; see also Niehoff, *supra* note 37, at 864–65.

helps determine whether a stimulus is threatening and helps trigger emotional responses;¹⁵⁸ abnormal cortisol levels, which can result in decreased energy levels throughout the day and difficulty sleeping at night;¹⁵⁹ and decreased brain metabolism and weaker connections between areas of the brain, both of which are key to understanding and evaluating complex information.¹⁶⁰ Additionally, adults with adverse childhood experiences were observed to have decreased volume in the hippocampus region of the brain, which is critical to memory storage, memory retrieval, and the regulation of cortisol levels after a stressful event.¹⁶¹ Overall, “[t]oxic stress in early childhood is associated with persistent effects on the nervous system and stress hormone systems that can damage developing brain architecture and lead to lifelong problems in learning, behavior, and both physical and mental health.”¹⁶²

Second, toxic stress can have a disruptive effect on the development of the neuroendocrine system,¹⁶³ particularly the HPA axis.¹⁶⁴ Just as the development of the brain is shaped by experience, so is the development of the HPA axis and the stress response system.¹⁶⁵ As a result, when a developing child experiences persistent toxic stress, the youth’s body will recalibrate its HPA axis, and, thus, its stress response, as an adaptation to its environment.¹⁶⁶ Specifically, there are two adaptive response patterns to significant threats: the arousal response and disassociation.¹⁶⁷ Both of these stress responses can become “sensitized,”¹⁶⁸ meaning that future stress will activate the most common adaptive pattern—arousal or disassociation—used by the individual in similar past situations.¹⁶⁹ The functional effect of a sensitized stress response system is that the brain acts as if the individual were always under threat and, thus, is always primed to respond.¹⁷⁰ A sensitized stress response system can lead to impulsive, aggressive, maladaptive, and

158. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 6.

159. See *id.*; *The Science of Neglect*, *supra* note 156, at 5–6.

160. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 6; *The Science of Neglect*, *supra* note 156, at 5.

161. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 6; see also Niehoff, *supra* note 37, at 862–63.

162. THE SCIENCE OF EARLY CHILDHOOD DEVELOPMENT, *supra* note 106, at 2.

163. See PERRY, STRESS, TRAUMA AND PTSD, *supra* note 101, at 2–3.

164. See Niehoff, *supra* note 37, at 861–62. The hypothalamic-pituitary-adrenal (“HPA”) axis is an arrangement between the brain and glands that control the secretion of cortisol. See *id.* at 856.

165. See *id.* at 859–61.

166. See Perry, *supra* note 68, at 8.

167. See Perry Declaration, *supra* note 130, ¶ 19. The arousal response prepares an individual for fight or flight. In contrast, the dissociative response occurs when an individual believes that fight or flight would be futile and prepares the individual to survive. See *id.*

168. When the stress response system becomes “sensitized,” “the baseline level of activity is increased and for any given stimulus (stressor) there will be a more extreme (and disproportional) response.” See *id.* ¶ 17.

169. See *id.* ¶ 20.

170. See *id.* ¶ 23; NAKAZAWA, *supra* note 116, at 37 (“Once the stress system is damaged, we overrespond to stress and our ability to recover naturally from that reactive response mode is impaired. We’re always responding.”).

antisocial behaviors,¹⁷¹ thereby making a youth more likely to get in trouble at school or end up in the delinquency system.¹⁷²

C. *The Manifestation of Embedded Trauma*

These significant changes to the brain and stress response system caused by childhood toxic stress are negative examples of how experience gets embedded into an individual's neurological and physiological development.¹⁷³ In the particular instance of toxic stress, while these adaptations likely increase the chance of survival in the short term, they manifest themselves in a number of ways that can be counterproductive to the individual's long-term success in society.¹⁷⁴ Specifically, there are three key ways in which toxic stress manifests itself in a manner that further amplifies normative impairments of adolescence.

First, chronic toxic stress during childhood can “create permanent memories that shape the [c]hild's perception of and response to the environment,” programming the child to live in a state of persistent fear.¹⁷⁵ Children who are persistently fearful have a hard time distinguishing between safety and danger and in some instances, may mistake a safe situation for a dangerous one.¹⁷⁶ While the dominant normative socio-emotional response for most adolescents is to prioritize immediate gratification, such a preference is even more pronounced for youth who have suffered trauma.¹⁷⁷ Indeed, for a youth living in a trauma-induced state of perpetual fear, “[i]mmediate reward is most reinforcing. Delayed gratification is impossible. Consequences of behavior become almost inconceivable to the threatened child. Reflection on behavior—including violent behavior—is impossible for the child in an alarm state.”¹⁷⁸ Thus, experiencing toxic stress during childhood further impairs a youth's already-deficient ability to delay gratification and prioritize the long-term over the short-term.

Second, chronic toxic stress during childhood may cause a youth to suffer from hyperarousal, which results when the “brain[] sensitiz[e]s the pathways for the fear response and create[s] memories that automatically trigger that response without

171. See Perry Declaration, *supra* note 130, ¶ 20.

172. See *id.* ¶ 22–25; see also *infra* notes 179–87 and accompanying text.

173. See Perry, *supra* note 68, at 10–11 (“States become traits.”); NAKAZAWA, *supra* note 116, at 29–31 (“How Your Biography Becomes Your Biology.”).

174. See Niehoff, *supra* note 37, at 855.

175. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 8; see also *Persistent Fear and Anxiety Can Affect Young Children's Learning and Development* (Harvard Univ., Ctr. on the Developing Child, Working Paper No. 9, 2010), <http://developingchild.harvard.edu/wp-content/uploads/2010/05/Persistent-Fear-and-Anxiety-Can-Affect-Young-Childrens-Learning-and-Development.pdf>; Perry, *supra* note 68, at 10.

176. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 8 (“For example, a child who has been maltreated may associate the fear caused by a specific person or place with similar people or places that pose no threat.”).

177. See Perry, *supra* note 68, at 11.

178. *Id.*

conscious thought.”¹⁷⁹ Children experiencing hyperarousal are highly sensitive to nonverbal cues and are more likely to misinterpret those cues, such as by interpreting a neutral situation as a threatening one.¹⁸⁰ Additionally, because they are also hypervigilant in terms of scanning the environment for threats, these youth are less adept at interpreting and responding to verbal cues, even in safe environments.¹⁸¹ For instance, a youth who grows up in a household where physical abuse is common will constantly be in a state of alarm, even in environments that are supposed to be safe, like a school setting.¹⁸² For hypervigilant youth, “little of the cortex is available to ‘learn.’ The focus of the individual will be on the emotional, ‘non-verbal’ cues in the environment.”¹⁸³ As a result, youth experiencing hyperarousal are often unable to focus on the verbal instructions of a teacher long enough to learn effectively.¹⁸⁴ Youth in a hyperaroused state are thereby often identified as having a learning disability,¹⁸⁵ when in reality the root cause of their difficulty learning is a history of trauma.¹⁸⁶ However, because trauma often is not appropriately accommodated in schools, and the behavior of traumatized youth in school is not seen through the appropriate lens, traumatized youth often are pushed out of the classroom and removed from the people and supports best positioned to intervene in their lives.¹⁸⁷

Third, chronic toxic stress during childhood can also impede the normative development of executive function skills that are critical to learning, social

179. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 8.

180. See *id.* at 8; Perry, *supra* note 68, at 10–11.

181. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 8; Perry, *supra* note 68, at 10–11.

182. See Perry Declaration, *supra* note 130, ¶¶ 21–23.

183. *Id.* ¶ 23.

184. See *id.* ¶¶ 21–27; UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 8. Youth who have experienced toxic stress also often experience developmental delays. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 8–9; CTR. ON THE DEVELOPING CHILD, HARVARD UNIV., IN BRIEF: THE IMPACT OF EARLY ADVERSITY ON CHILDREN’S DEVELOPMENT 2 (2007), <http://developingchild.harvard.edu/wp-content/uploads/2015/05/inbrief-adversity-1.pdf> [hereinafter THE IMPACT OF EARLY ADVERSITY] (“The more adverse experiences in childhood, the greater the likelihood of developmental delays . . .”). Such delays could further compound the effect of hyperarousal, making it even more difficult to learn in a traditional classroom.

185. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 8. This may help to explain the prevalence of youth with educational disabilities in the juvenile justice system. See Joseph B. Tulman, *Disability and Delinquency: How Failures to Identify, Accommodate, and Serve Youth with Education-Related Disabilities Leads to Their Disproportionate Representation in the Delinquency System*, 3 WHITTIER J. CHILD & FAM. ADVOC. 3, 3–4 (2003) (noting a majority of youth in the juvenile justice system have educational disabilities).

186. Indeed, trauma itself should be considered a disability that must be accommodated under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act (“ADA”). See, e.g., Complaint & Demand for Jury Trial at ¶¶ 64–66, 69–71, Peter P. v. Compton Unified Sch. Dist., No. CV 15-03726-MWF (C.D. Cal. May 18, 2015), ECF No. 1 [hereinafter Peter P.: Complaint & Demand for Jury Trial] (arguing in a lawsuit against the Compton Unified School District that trauma is a disability that must be accommodated under, among other things, the ADA and IDEA).

187. See *id.*; see also Civil Rights Data Collection, *Data Snapshot: School Discipline*, U.S. DEP’T OF EDUC., OFFICE OF CIVIL RIGHTS 1 (Mar. 2014), <http://ocrdata.ed.gov/Downloads/CRDC-School-Discipline-Snapshot.pdf> (finding that students with disabilities receive out-of-school suspensions at twice the rate of students without disabilities).

interaction, self-regulation, and impulse control.¹⁸⁸ As a result, while most adolescents naturally act impulsively and have a diminished ability to self-regulate, youth who have experienced toxic stress may have even more difficulty controlling their impulses than the average adolescent because the traumatized youth acts instinctually, and prioritizes survival over higher-order executive functioning.¹⁸⁹ In addition, the traumatized youth may also demonstrate an increased penchant for risk-taking relative to the average adolescent.¹⁹⁰

III. REFORMATION THROUGH ACCOMMODATION: RESPONDING TO TRAUMA

Just as recent psychological and neurological research regarding normative adolescent development has confirmed that adolescents generally are less mature and more vulnerable than adults, recent research regarding the impact of adverse childhood experiences has demonstrated that traumatized youth generally are less mature than average adolescents as a direct result of their vulnerability and inability to extricate themselves from environments full of toxic stress. In other words, while adolescents already typically suffer deficiencies in decision-making relative to adults, childhood toxic stress appears to amplify the difference in decision-making ability between a youth who has experienced trauma and the average adult through no fault of the traumatized child. Thus, just as age must be accommodated, so must trauma.¹⁹¹

The impact of trauma on child and adolescent development has significant implications for the juvenile justice system. In the juvenile justice system, youth who have suffered trauma are the norm, rather than the exception.¹⁹² However, the system as it has developed is not equipped philosophically or practically to effectively address the trauma that youth suffer prior to, or during, their involvement in the system. Therefore, in order to be effective, the juvenile justice system must undergo a series of reforms in order to accommodate trauma. The resulting accommodations should radically transform the role the juvenile justice system currently plays in adolescent development.

188. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 8; see also *Building the Brain's "Air Traffic Control" System*, *supra* note 53, at 2, 4–5, 7 (explaining that the skills that commonly work together to achieve competent executive functioning include working memory, inhibitory control, and cognitive flexibility).

189. See UNDERSTANDING THE EFFECTS OF MALTREATMENT, *supra* note 58, at 9.

190. See *id.*

191. See *Miller v. Alabama*, 132 S. Ct. 2455, 2468 (2012). In *Miller*, the Supreme Court stated the following:

[M]andatory life without parole for a juvenile precludes consideration of his chronological age and its hallmark features—among them, immaturity, impetuosity, and failure to appreciate risks and consequences. It prevents taking into account the family and home environment that surrounds him—and from which he cannot usually extricate himself—no matter how brutal or dysfunctional.

Id.; see also *Eddings v. Oklahoma*, 455 U.S. 104, 116 (1982) (“Just as the chronological age of a minor is itself a relevant mitigating factor of great weight, so must the background and mental and emotional development of a youthful defendant be duly considered . . .”).

192. See *infra* notes 193–201 and accompanying text.

A. *The Norm of Childhood Trauma for System Involved Youth*

Research has demonstrated that exposure to childhood trauma is ubiquitous in the population of youth involved in the juvenile justice system. Indeed, recent studies reveal that more than ninety percent of youth in the juvenile justice system report having experienced at least one ACE—compared to sixty-four percent in the ACE Study sample of primarily white, middle-class adults.¹⁹³ Additionally, youth in the juvenile justice system are more likely to have experienced a higher number of ACEs per person than their ACE Study sample counterparts.¹⁹⁴

One recent study investigating the prevalence of ACEs within a sample of the population of juvenile offenders in Florida is particularly illuminating,¹⁹⁵ and its key findings merit discussion. First, Florida found that the prevalence of ACEs within the population of youth involved in its juvenile justice system was significantly higher than in the population studied in the original ACE Study. Specifically, Florida found that “juvenile offenders [were] 13 times less likely to report zero ACEs (2.8% compared to 36%) and four times more likely to report four or more ACEs (50% compared to 13%) than Felitti and Anda’s Kaiser Permanente-insured population of mostly college-educated adults.”¹⁹⁶ Second, Florida found that, for individuals in the juvenile justice system, “female youth reported more ACEs than males, and a higher percentage of those who reported at least one ACE also reported others.”¹⁹⁷ Third, Florida found that the number of ACEs reported by a justice-system involved youth correlated with the risk level of

193. Compare Baglivio et al., *supra* note 118, at 9–10 (finding that over 97% of a sample of 64,000 justice-system-involved youth in Florida reported having experienced at least one ACE), and Karen M. Abram et al., *Post Traumatic Stress Disorder and Trauma in Juvenile Detention*, 61 ARCHIVES OF GEN. PSYCHIATRY 403 (2004) (manuscript at 2) (finding that 92.5% of a sample of recently detained youth in Cook County, Illinois, reported having experienced at least one traumatic experience), with CDC ACE Study, *supra* note 117 (finding that 63.9% of respondents in the sample reported at least one ACE).

194. Compare Baglivio et al., *supra* note 118, at 10 (50% reported having experienced four or more ACEs), Abram et al., *supra* note 193, at 4 (84% reported having experienced more than one ACE), and Carly B. Dierkhising et al., *Trauma Histories Among Justice-Involved Youth: Findings from the National Child Traumatic Stress Network*, 4 EUR. J. PSYCHOTRAUMATOLOGY (2013) (finding that a sample of 658 justice-system-involved youth in the National Child Traumatic Stress Network Core Data Set reported having experienced an average of 4.9 different types of trauma), with CDC ACE Study, *supra* note 117 (37.9% of respondents in the sample reported two or more ACEs).

195. See Baglivio et al., *supra* note 118, at 7–8 (noting that the sample of 64,329 youth included all juveniles who had received an official referral, had reached the age of 18, and had completed the PACT Full Assessment tool used to assess a youth’s risk of re-offense). Importantly, the sample included only those youth who received the PACT Full Assessment, which is the only tool that captures all ten ACEs. See *id.* In Florida, youth whose risk scores are in the low-to-medium range may be assessed with only the PACT Pre-screen and not the Full Assessment. See *id.* at 5–6. As a result, there is likely a bias toward oversampling more serious juvenile offenders. See *id.* at 7, 13.

196. *Id.* at 10. As the Florida study chose only youth who had been arrested but had since turned 18 in order to capture the full range of ACEs, *id.* at 7, the comparison of the specific juvenile justice population to the general adult population in the ACES study is appropriate.

197. *Id.* at 9 (finding that the average composite ACE score for female youth was 4.29, while the average composite ACE score for male youth in the sample was 3.48).

that youth.¹⁹⁸ Specifically, low-risk youth in the sample were 35.6 times more likely than high-risk youth to report no ACE indicators, while high-risk youth were more likely to report more than three ACEs.¹⁹⁹ Additionally, high-risk youth comprised more than 50% of those youth reporting more than six ACEs and more than 75% of those youth reporting nine or ten ACEs.²⁰⁰ Four ACE indicators in particular showed statistically significant increases in prevalence as the risk stratification of youth increased: physical neglect, family violence, household substance abuse, and the incarceration of a household member.²⁰¹

The high prevalence of ACEs in the population of youth involved in the juvenile justice system is not surprising, given the intersection between delinquency risk factors, the ACEs themselves, and the impact that childhood trauma has on the developing body and brain. Research has identified a number of risk factors associated with delinquency.²⁰² At the family and community levels, these risk factors include abuse and neglect; intra-family violence; parental psychopathology; familial antisocial behavior; divorce; living in poverty; and neighborhood violence.²⁰³ At the individual level, risk factors associated with delinquency include hypervigilance, hyperactivity, poor impulse control, and poor cognitive development.²⁰⁴ When risk factor research is compared to the research on trauma, family- and community-level risk factors intersect with all ten ACEs, and individual risk factors intersect with the developmental impact that toxic stress can have on the body of a developing youth.²⁰⁵ Delinquency, then, is a manifestation of trauma in the same way that health risk behaviors and poor adult health outcomes are manifestations of trauma.²⁰⁶ Thus, just as doctors try to treat the health-risk

198. The risk level analyzed in the Florida study describes the likelihood that the youth will reoffend. *See id.* at 1. Florida calculates the risk level of a youth using a “fourth-generation actuarial risks/needs assessment designed to assess a youth’s overall risk to reoffend, as well as to rank-order criminogenic needs/dynamic risk factors.” *See id.* at 4.

199. *See id.* at 10.

200. *See id.*

201. *Id.* at 11 (explaining that while the remaining six ACE indicators followed a similar pattern of increasing prevalence as the risk category of the youth became more severe, the differences in prevalence between the moderate and moderate-high risk categories were not statistically significant).

202. *See generally* GAIL A. WASSERMAN ET AL., U.S. DEP’T OF JUSTICE, OFFICE OF JUVENILE JUSTICE & DELINQUENCY PREVENTION, RISK AND PROTECTIVE FACTORS OF CHILD DELINQUENCY (2003), <https://www.ncjrs.gov/pdffiles1/ojjdp/193409.pdf>. The research often groups the risk factors into four categories: (1) individual-level factors, (2) family-level factors, (3) peer-level factors, and (4) community-level factors. *See id.* at 2.

203. *See id.* at 3.

204. *See id.*

205. *Compare supra* notes 139, 173–90 and accompanying text, *with* WASSERMAN ET AL., *supra* note 202; *see also* NAKAZAWA, *supra* note 116, at 24 (“Scientists are calling the correlation between childhood trauma, brain architecture, and adult well-being the new psychobiological ‘theory of everything.’”). The same connection appears to hold true between childhood trauma, brain architecture, and delinquency, perhaps making this the new theory of everything for the juvenile justice field.

206. *See* Felitti et al., *supra* note 137, at 255 (discussing the strong dose relationship between ACEs and several of the leading causes of death in adults); Baglivio et al., *supra* note 118, at 10–13 (finding a correlation between the number of ACEs experienced as a youth and the risk of recidivism).

behaviors and poor adult health outcomes that result from childhood trauma, juvenile courts are confronted with addressing the delinquent behavior that results from ACEs.²⁰⁷

B. The Justice System Is Not Built to Effectively Address Trauma

The current juvenile justice system is not well-equipped to treat trauma effectively. First, the current philosophical and operational foundations of the juvenile justice system—rehabilitation, deterrence, and retribution²⁰⁸—fail to account fully and adequately for the nature of youth or the impact of childhood trauma, rendering them unsound. Second, the existing juvenile courts have a number of systemic shortcomings that limit their ability to respond effectively to delinquent youth who have experienced trauma.

1. The Philosophical Limitations of the Juvenile Justice System

a. The Fallacy of Rehabilitation

Although the principle of rehabilitation marks the foundation upon which the original juvenile courts were constructed,²⁰⁹ the principle of rehabilitation as it has been defined and implemented over time is too broad, too simplistically paternalistic, and too ineffective to be a sound philosophical underpinning of juvenile court.²¹⁰ First and foremost, the rehabilitative goal of the juvenile courts was defined too broadly. Rather than defining the goal narrowly—i.e., to prevent the youth from reoffending—the goal was defined broadly to provide for the general

207. See Felitti et al., *supra* note 137, at 255 (“[T]ertiary care of adults whose health problems are related to experiences such as childhood abuse will continue to be a difficult challenge.”).

208. See Mark R. Fondacaro, *Rethinking the Scientific and Legal Implications of Developmental Differences Research in Juvenile Justice*, 17 *NEW CRIM. L. REV.* 407, 415 (2014) [hereinafter Fondacaro, *Rethinking Juvenile Justice*] (discussing four exemplar models of juvenile justice: (1) rehabilitation, (2) adult-retribution, (3) diminished-retribution, and (4) individual-prevention); Kristin N. Henning, *Juvenile Justice after Graham v. Florida: Keeping Due Process, Autonomy, and Paternalism in Balance*, 38 *WASH. U. J.L. & POL’Y* 17, 18–30 (2012) [hereinafter Henning, *Juvenile Justice after Graham*] (discussing the competing rehabilitative, punishment, and due process agendas that have marked the ever-changing philosophy of juvenile court); Elizabeth S. Scott, *The Legal Construction of Adolescence*, 29 *HOFSTRA L. REV.* 547, 578–79 (2000) (discussing the philosophies undergirding the three distinct periods of juvenile justice reform: (1) rehabilitation, (2) accountability and public safety, and (3) deterrence and retribution).

209. See Henning, *Juvenile Justice after Graham*, *supra* note 208, at 19 (“The very establishment of the early juvenile court was rooted in the belief that children are not fully formed beings, but are instead malleable to treatment and rehabilitation.”).

210. See David E. Arredondo, *Child Development, Children’s Mental Health and the Juvenile Justice System: Principles for Effective Decision-Making*, 14 *STAN. L. & POL’Y REV.* 13, 17–18 (2003) (concluding that the term “rehabilitation” has lost any precise meaning because of “its vague definition in popular usage, the political associations it has acquired through heavy usage over time, and its use as a euphemism to denote intermediate sanctions designed to effect one or more of the other goals of the juvenile justice system”); see also Christopher Slobogin & Mark R. Fondacaro, *Juvenile Justice: The Fourth Option*, 95 *IOWA L. REV.* 1, 8–10 (2009).

welfare of the youth.²¹¹ Second, as a result of the breadth of the rehabilitative goal, the courts had expansive discretion to act in the “best interests” of the child and “fashion individualized treatments in order to rehabilitate offenders.”²¹² Such expansive discretion included the ability to order indeterminate sentences, the ability to place youth in state institutions, and the elimination of the principle of proportionality—all without any requirement of adversarial proceedings or due process.²¹³

Additionally, the rehabilitative philosophy underpinning the juvenile court system is too simplistically paternalistic. As the original juvenile courts were premised on the philosophy of rehabilitation, the courts proceeded against youth using their *parens patriae* power.²¹⁴ The assumption on which these rehabilitative courts were based was simple—delinquent youth had parents who had failed them, and the state now had to don the role of a surrogate parent to get the youth on track to successful adulthood.²¹⁵ This one-dimensional and pejorative view of delinquency and how to respond to it ignores the complexities of reality. It ignores the multitude of risk factors associated with delinquency. It ignores the fact that most youth are not taken out of their homes,²¹⁶ and those who are removed usually return to their homes after some period of time.²¹⁷ It ignores the fact that, historically, the system has often failed at the role of surrogate parent, while simultaneously failing to provide the real parent with any support. And, lastly, it ignores its lack of power to effectively address many of the underlying root causes of delinquency.

211. See Slobogin & Fondacaro, *supra* note 210, at 10 (“[T]he primary goal is not to prevent future criminal behavior but to improve the psychological well-being and socialization of the child.”); Scott, *supra* note 208, at 582 (“[T]he purpose of state intervention in delinquency cases (as in child welfare cases) was solely to promote the welfare of the youngster before the court.”). The vestiges of the breadth of this original rehabilitative goal remain to this day, see, e.g., D.C. Code Ann. § 16-2301.02 (West 2016) (stating that one of the purposes of the juvenile justice system is “the rehabilitation of children with the goal of creating productive citizens”), and are most on display in cases where youth remain under the supervision of the system because of difficulty with compliance with disposition orders, rather than because they pose a risk of future delinquent behavior.

212. See Henning, *Juvenile Justice after Graham*, *supra* note 208, at 31 (citations omitted).

213. See Slobogin & Fondacaro, *supra* note 210, at 10; Scott, *supra* note 208, at 583.

214. See Slobogin & Fondacaro, *supra* note 210, at 8–10.

215. See *id.* (discussing the rehabilitative vision of the early juvenile courts); Henning, *Juvenile Justice after Graham*, *supra* note 208, at 30–31 (discussing the paternalistic approach of the early juvenile courts and the belief that “when parents failed, the state had no choice but to intervene”); Scott, *supra* note 208, at 580–83 (recognizing that the early founders of the juvenile courts understood parental neglect as a primary cause of delinquency and explaining that early founders often highlighted the similarity between delinquents and neglected children).

216. See JULIE FURDELLA & CHARLES PUZZANCHERA, U.S. DEP’T OF JUSTICE, OFFICE OF JUVENILE JUSTICE & DELINQUENCY PREVENTION, DELINQUENCY CASES IN JUVENILE COURT, 2013, at 4 (2015), <http://www.ojjdp.gov/pubs/248899.pdf> (finding that only seventy-four out of every one thousand delinquency cases in 2013 resulted in a residential placement).

217. Only four out of every one thousand delinquency cases in 2013 resulted in waiver to adult court, see *id.*, and, thus, subjected the youth to the possibility that he or she could be sentenced to life in prison without the possibility of parole. As a result, most youth arrested for a delinquent offense remain in the juvenile justice system and return home after completing their time at a residential placement.

Moreover, the rehabilitative approach also has proven to be ineffective in actually providing for the general welfare of delinquent youth under the supervision of the juvenile courts. Indeed, by the late 1960s, the Supreme Court found that the results of the juvenile court experiment “ha[d] not been entirely satisfactory”²¹⁸ and that youth were receiving the “worst of both worlds”—they were receiving neither due process nor effective rehabilitative treatment.²¹⁹ While youth now have increased due process protections,²²⁰ juvenile courts still are not effectively achieving their goal of rehabilitation. Recidivism rates among youth who come into contact with the juvenile court system remain relatively high, while data demonstrate that placement in juvenile jails increases not only recidivism rates but also the likelihood of coming into contact with the adult criminal justice system.²²¹ Unless the goal of the juvenile justice system is narrowed, and the system itself becomes more effective in responding to trauma, intervention by the juvenile court is unlikely to produce lasting change.

b. The Fallacy of Deterrence

The philosophy of deterrence also is not an effective approach to youth who are involved with the delinquency system, especially those who have suffered trauma. Deterrence is “the prevention of criminal behavior by fear of punishment.”²²² The theory of deterrence assumes that the actor is able to think ahead, accurately appreciate the risk of punishment, and make a rational, autonomous choice after contemplating the risk of punishment. However, as discussed in detail *supra*, research demonstrates that youth as a class tend to focus on the present, underestimate risk, moderate the threat of punishment, and have an executive functioning system that is still in development.²²³ Therefore, as a result of the decision-making deficits associated with normative adolescent development, youth are “less susceptible to deterrence” than adults.²²⁴

218. See *In re Gault*, 387 U.S. 1, 17–18 (1967).

219. See *Kent v. United States*, 383 U.S. 541, 556 (1966) (“There is evidence, in fact, that there may be grounds for concern that the child receives the worst of both worlds: that he gets neither the protections accorded to adults nor the solicitous care and regenerative treatment postulated for children.”).

220. See, e.g., *Gault*, 387 U.S. at 1.

221. See Anna Aizer & Joseph J. Doyle, Jr., *Juvenile Incarceration, Human Capital and Future Crime: Evidence from Randomly-Assigned Judges*, NAT’L BUREAU OF ECON. RESEARCH (2013), http://www.mit.edu/fjdjoyle/aizer_doyle_judges_06242013.pdf.

222. *Deterrence*, BLACK’S LAW DICTIONARY (10th ed. 2014); see also Tamar R. Birkhead, *Toward a Theory of Procedural Justice for Juveniles*, 57 BUFF. L. REV. 1447, 1477 (2009) (describing the deterrent effect of punitive sanctions).

223. See *supra* notes 82–88 and accompanying text; see also Birkhead, *supra* note 222, at 1477; Scott, *supra* note 208, at 590–91; Slobogin & Fondacaro, *supra* note 210, at 44.

224. See *Roper v. Simmons*, 543 U.S. 551, 571–72 (2005) (“[T]he same characteristics that render juveniles less culpable than adults suggest as well that juveniles will be less susceptible to deterrence.”); see also *Graham v. Florida*, 560 U.S. 48, 72 (2011) (citing *Roper*, 543 U.S. at 571); Henning, *Juvenile Justice after Graham*, *supra* note 208, at 28–29 (explaining that youth are unlikely to be deterred by harsh penalties because they are often unable to control their impulses or hypothesize about the consequences of their actions); Birkhead, *supra* note

Indeed, this diminished susceptibility to deterrence is particularly true of youth who have suffered childhood trauma.²²⁵ Again, as described in detail *supra*, childhood trauma can magnify many of the deficits in decision-making associated with normative adolescent development.²²⁶ Specifically, toxic stress can alter the brain and stress response system of a developing child, making the child even more present-oriented, and less able to appraise risks, understand the threat of punishment, or control his or her impulses.²²⁷ As a result, deterrence is not a particularly effective philosophical foundation for a juvenile justice system that recognizes and accommodates trauma.

c. The Fallacy of Retribution

Finally, the principle of retribution fails as a sound philosophical foundation for the justice system's approach to youth who have violated the law,²²⁸ especially in light of the high prevalence of youth who have suffered trauma in the justice system, as well as the impact of trauma on the brain and the body. The philosophy of retributive justice is based on two assumptions that research is increasingly calling into question.²²⁹ First, retributive justice is based on the assumption that individuals have free will—i.e., the capacity to choose freely one's own behavior.²³⁰ Second, retributive justice assumes that an individual who has broken the law has deliberately and specifically chosen to break the law, could have chosen not to break the law, and should be punished proportionally to the harm caused by breaking the law.²³¹ The connection between these two assumptions—which plays

222, at 1477 (recognizing that youth “may be less sensitive to the threat of sanctions”); Slobogin & Fondacaro, *supra* note 210, at 44–45 (recognizing that the traits of adolescents “tend to produce offenders for whom the deterrent force of the criminal law is likely to be, literally, an afterthought”).

225. See Birkhead, *supra* note 222, at 1478 (“Intellectual and psychosocial deficits caused by developmental delays, mental illness, and drug dependency can also ‘impair or skew’ rational calculations of risk and reward made by adolescents.”).

226. See *supra* notes 173–90 and accompanying text.

227. See *id.*

228. The U.S. Supreme Court has agreed with this premise insofar as retribution is not adequate justification for imposing the most extreme form of sentences on youth—the death penalty and life without the possibility of parole. See *Roper*, 543 U.S. at 571–72 (concluding that retribution is not an adequate justification for imposing the death penalty on juvenile offenders convicted of homicide); *Graham*, 560 U.S. at 71–72 (concluding that retribution is not an adequate justification for imposing the penalty of life without parole on juvenile offenders convicted of non-homicide offenses); *Miller v. Alabama*, 132 S. Ct. 2455, 2465–69 (2012) (same with regards to juvenile offenders convicted of homicide).

229. See Fondacaro, *Rethinking Juvenile Justice*, *supra* note 208, at 424–26 (discussing the scientific research calling into question the legal presumptions that underlie the goal of retribution).

230. See *id.* at 433 (“Retributive justice is based on the presumption that people have the individual capacity to freely choose their behavior, and that when they break the law, they could have chosen to do otherwise and deserve to be punished in proportion to the harm they caused.”); see also Scott, *supra* note 208, at 590 (“The criminal law assumes that most offenders make rational autonomous choices to commit crimes, and that the legitimacy of punishment is undermined if the decision is coerced, irrational, or based on a lack of understanding about the meaning of the choice.”).

231. See Fondacaro, *Rethinking Juvenile Justice*, *supra* note 208, at 433; see also Scott, *supra* note 208, at 590.

out in the interplay between cognition, choice, and action—forms the foundation for retributive justice.²³² However, recent scientific research calls these fundamental premises into question, demonstrating, among other things, that (1) the “presumed link between cognition and behavior is largely if not completely illusory,” and (2) “more and more human behavior is being accounted for by factors other than conscious will.”²³³

The research explaining the impact of childhood toxic stress on the brain and the body is particularly illustrative of the fact that behavior that violates the law is explained by more than just a deliberate, rational choice to break the law. The research demonstrates that childhood toxic stress not only can rewire the brain, but also can recalibrate the body’s stress response system to enable the body to respond better to present trauma.²³⁴ While such adaptation is beneficial in the short term because it increases the chances of survival,²³⁵ such adaptation can be disadvantageous over the long term when the threats no longer exist, but the impacts of such adaptation still influence behavior.²³⁶ Thus, that future act that violates the law must be seen as more than a rational, deliberate decision in the moment; it must be viewed within the context of the actor’s history and how that history has neurologically and biologically impacted the manner in which that individual makes decisions. Therefore, the simplistic assumptions upon which retributive justice is based do not paint a fair picture of the complexity of human choice, and retributive justice itself is not a sound philosophy upon which to base the way society responds to youth involved in the justice system.

2. *Systemic Shortcomings of the Juvenile Justice System*

a. *Reactive Role*

The research behind childhood trauma reveals three critical systemic limitations of the juvenile justice system’s ability to respond to trauma. First, in the world of delinquency prevention and public safety, the juvenile courts play a tertiary-level

232. See Fondacaro, *Rethinking Juvenile Justice*, *supra* note 208, at 425.

233. Fondacaro writes that:

As scientific research on environmental and biological influences on behavior progresses, more and more of the variance in illegal behavior is accounted for by these interacting forces. As the amount of variance accounted for increases from 15–25 to 75–95 percent and above, little room is left for the fictional legal homunculus.

Id. at 425–26, 433.

234. See *supra* notes 152–72 and accompanying text.

235. See Niehoff, *supra* note 37, at 874 (“Staying safe is a biological imperative as compelling as finding food or reproducing.”).

236. See *id.* at 854–55. While such adaptation to childhood toxic stress is often detrimental to long-term success in our society, one could imagine a world where such adaptation could be beneficial. See, e.g., *THE HUNGER GAMES SERIES* (Lionsgate 2013, 2014, 2015) (imagining a dystopian world in which youth are forced to fight each other to the death for sport).

role.²³⁷ Specifically, juvenile courts are focused on holding the young person accountable for the delinquent act itself and on finding a way to ensure that an already-delinquent youth is rehabilitated.²³⁸ Typically, by the time a youth comes into contact with the juvenile justice system, the youth likely already has suffered chronic toxic stress²³⁹ and begun to adapt to it,²⁴⁰ and the adaptive behavior has either directly or indirectly manifested itself in delinquent behavior. The result is that the delinquency court plays little to no role in preventing the adverse childhood experiences from happening in the first place (primary prevention); is not yet engaged with the youth to provide services that would mitigate the impact of toxic stress (secondary prevention); and is expected to treat the youth after the trauma has already simmered in the body for a period of time, and manifested itself in the commission of a delinquent act (tertiary prevention).²⁴¹ Thus, while juvenile courts are often seen to be the face of delinquency prevention, the reality is that juvenile courts play a limited, reactive role in a larger ecosystem, which includes families, schools, mental health providers, and law enforcement, and which is responsible for keeping the public safe.

b. Wrong Frame

Second, juvenile courts, because of their focus on deterrence and retribution, often are focused on the delinquent behavior itself rather than on identifying and resolving the root causes of the behavior.²⁴² Drug use is a common example from delinquency cases that is illustrative of the inefficacy of focusing primarily on the behavior itself rather than on the reasons behind the behavior.

237. See Felitti et al., *supra* note 137, at 254–55 (discussing the primary, secondary, and tertiary levels of intervention relating to treating the adult health outcomes that result from adverse childhood experiences). In a public health model, “[p]rimary prevention keeps the disease process from becoming established by eliminating causes of disease or increasing resistance to disease. Secondary prevention interrupts the disease process before it becomes symptomatic. Tertiary prevention limits the physical and social consequences of symptomatic disease.” DAVID L. KATZ & ATHER ALI, PREVENTIVE MEDICINE, INTEGRATIVE MEDICINE & THE HEALTH OF THE PUBLIC 3 (2009), <http://www.iom.edu/media/Files/Activity%20Files/Quality/IntegrativeMed/Preventive%20Medicine%20Integrative%20Medicine%20and%20the%20Health%20of%20the%20Public.pdf>.

238. See, e.g., D.C. Code Ann. § 16-2301.02 (West 2016).

239. See *supra* notes 193–201 and accompanying text.

240. See Niehoff, *supra* note 37, at 875–76 (“[T]he nervous system is likely to have already begun to outfit itself for a life on the edge.”).

241. See Felitti et al., *supra* note 137, at 255 (discussing primary, secondary, and tertiary levels of care generally); MARK W. LIPSEY ET AL., CTR. FOR JUVENILE JUSTICE REFORM, IMPROVING THE EFFECTIVENESS OF JUVENILE JUSTICE PROGRAMS: A NEW PERSPECTIVE ON EVIDENCE-BASED PRACTICE 38 (2010), <http://cjr.georgetown.edu/wp-content/uploads/2014/12/ebppaper.pdf> (defining primary delinquency prevention as community-wide programs aimed at reducing risk and improving resilience, and secondary delinquency prevention as programs targeted at youth with identified risk factors prior to their involvement with the delinquency system or as a result of diversion); Slobogin & Fondacaro, *supra* note 210, at 27 (discussing primary, secondary, and tertiary prevention programs in the delinquency context).

242. See *supra* notes 222–36 and accompanying text.

Smoking marijuana—a behavior that is common among youth in the delinquency system in the District of Columbia—is often perceived by stakeholders in the juvenile justice system as dangerous behavior that is further evidence of a youth’s delinquent character. Secure detention, in-patient drug treatment, individual drug counseling, and weekly drug testing are common interventions ordered by the juvenile court in an attempt to help the youth stop smoking. However, from the youth’s perspective, smoking marijuana may be an effective and rational immediate solution to reduce the anger, anxiety, stress, or depression resulting from their adverse childhood experiences.²⁴³ If a youth’s marijuana use is a behavior adopted to manage his or her past trauma, the common interventions used by the court are unlikely to be effective over the long term, unless the underlying trauma—and the reason for the drug use—is effectively addressed.²⁴⁴ Effective interventions in this instance would involve evidence-based, trauma-informed programs targeted at addressing the particular type of trauma suffered by the young person, rather than programs targeted at the identified behavior of the young person.²⁴⁵

The juvenile court cannot achieve a full understanding of the delinquent behavior by focusing solely on a youth’s behavior itself. Instead, the juvenile court must look beyond the delinquent behavior and seek to understand the underlying cause of the behavior in the first instance.²⁴⁶

c. Wrong Tools

Third, most juvenile courts do not have the necessary tools at their disposal to provide effective tertiary care to youth who have suffered trauma. While juvenile court systems are increasingly expanding their use of community-based, evidence-based services that assist with treating the individual-level risk factors associated with delinquency,²⁴⁷ juvenile courts lack the jurisdiction or programs to effectively address many of the family- and community-level risk factors associated with delinquency. Indeed, juvenile courts cannot alleviate poverty, improve schools, reduce neighborhood violence, or address many of the family dynamics that contributed to the childhood trauma in the first place. While in certain instances juvenile courts may play a role in coordinating services that may help address some of the aforementioned obstacles in an individual case, juvenile courts often are limited by political, funding, and programmatic realities outside their control.

243. See Felitti et al., *supra* note 137, at 252–54.

244. See Baglivio et al., *supra* note 118, at 11.

245. See KRISTINE BUFFINGTON ET AL., NAT’L COUNCIL OF JUVENILE & FAMILY COURT JUDGES, TEN THINGS EVERY JUVENILE COURT JUDGE SHOULD KNOW ABOUT TRAUMA AND DELINQUENCY 9 (2010), http://www.ncjfcj.org/sites/default/files/trauma%20bulletin_1.pdf.

246. See Baglivio et al., *supra* note 118, at 11 (“Law enforcement and judicial awareness of ACES will enhance the likelihood that the root causes of problematic behaviors will be addressed with social and behavioral health services.”).

247. See LIPSEY ET AL., *supra* note 241, at 9.

C. Reforming Juvenile Justice by Accommodating Trauma

To be clear, while the juvenile justice system's current philosophical and practical underpinnings are flawed in light of the research on adolescent development and trauma, the juvenile justice system should be neither abolished nor returned to the paternalistic child, welfare-like system of the early juvenile courts. Instead, to be effective, the juvenile justice system must be reformed by narrowly focusing its philosophy on ensuring that youth do not reoffend, while implementing systemic changes that effectively accommodate the impact of childhood trauma. Such changes should result in a smaller, more focused, and more effective juvenile justice system.

1. *Constrained Consequentialism: Adopting a New Philosophical Foundation for a Trauma Informed Juvenile Justice System*

The juvenile justice system should adopt a consequentialist approach that has the narrow end goal of reducing recidivism, rather than a broad notion of rehabilitation that includes a focus on the greater welfare of the youth.²⁴⁸ Such a consequentialist approach would be built on a number of guiding principles. First, assuming the youth is found to be involved in the delinquent act, any interventions implemented by the court would be “the least restrictive intervention capable of promoting compliance and reducing recidivism risk to a low level based on actuarial risk assessment measures.”²⁴⁹ Second, while the least-restrictive intervention for any particular case ultimately would be determined by the judge, an interdisciplinary risk and resource management team of professionals would assist the judge in an evidence-based decision-making process.²⁵⁰ Third, the system itself would be “ecologically self-aware” and understand its tertiary role in a larger public-health approach to reducing delinquency and promoting safety.²⁵¹ Fourth, the system would evaluate its success continuously at the individual, system, and policy levels in order to improve its decision-making, management, and service

248. Consequentialism is the view that the value of an action is derived strictly from the value of its consequences. In this instance, “[c]onsequentialism is aimed not at moral judgment and punitive payback but at recidivism reduction, crime prevention, and prospective behavior change [T]he particular instrument of behavior change chosen should be driven primarily by considerations of efficacy and effectiveness.” Fondacaro, *Rethinking Juvenile Justice*, *supra* note 208, at 435. The consequentialist approach has been proposed and refined by Mark Fondacaro and Christopher Slobogin in at least three articles. *See generally* Fondacaro, *The Rebirth of Rehabilitation*, *supra* note 84; Fondacaro, *Rethinking Juvenile Justice*, *supra* note 208; Slobogin & Fondacaro, *supra* note 210. While this Article endorses much of the approach focused on recidivism reduction suggested by Fondacaro and Slobogin, the Article does not endorse all of the principles of the Fondacaro/Slobogin model. Specifically, this Article takes issue with the elimination of the mens rea requirement in determining legal culpability. *Compare* Fondacaro, *The Rebirth of Rehabilitation*, *supra* note 84, at 727–28 (proposing that the “traditional ritual of retrospective mind reading to determine mens rea, with all of its inevitable biases and errors, would be eliminated”), *with infra* notes 254–56 and accompanying text.

249. *See* Fondacaro, *Rethinking Juvenile Justice*, *supra* note 208, at 437.

250. *See id.* at 438.

251. *See id.*

provision.²⁵² Fifth, there would be a rebuttable presumption that the juvenile record of all first-time offenders would be expunged upon completion of the intervention ordered.²⁵³

Last, in addition to these guiding principles, the juvenile justice system also should be subject to two constraining principles in order to ensure that the accommodation of trauma is woven into the system's philosophical underpinnings. First, a consequentialist approach that is focused on reducing recidivism should be constrained by a manifestation principle. Specifically, if the alleged delinquent act is a *direct* manifestation of the childhood trauma suffered by the youth, then the case should be diverted out of the juvenile justice system. In these instances, chronic toxic stress should be treated as a disability that must be accommodated under the Americans with Disabilities Act ("ADA").²⁵⁴ The manner in which such an accommodation would take place should mirror the process already established in the Individuals with Disabilities Education Act ("IDEA"), which provides a good framework for evaluating whether a student with a disability can be removed from his or her educational placement as a result of a violation of the disciplinary code.²⁵⁵ Following that same model, youth whose delinquent acts were "caused by, or had a direct and substantial relationship to," the chronic toxic stress experienced by the youth, would not be prosecuted for the delinquent act; instead, they would be connected to evidence-based school- and community-based services that target treatment of the effects of the trauma and strive to ensure that the behavior does not repeat itself.²⁵⁶ Thus, while diversion to an intervention to reduce future delinquent behavior remains the goal, the interventions are not pursued within the formal confines of the justice system. As such, accommodation in this manner ensures that the youth is not unfairly criminalized for a direct manifestation of the trauma inflicted on him or her during childhood.

Tanya's case provides a good example of how the manifestation principle would play out in practice. As discussed at the beginning of this Article, Tanya allegedly threatened her mother during an argument in which Tanya's mother was trying to convince Tanya to come back to the home where Tanya was repeatedly sexually assaulted by a male relative. Afraid to return home, Tanya allegedly threatened her mother, was arrested, and was charged with felony threats.²⁵⁷ In Tanya's case, the alleged threat made was a direct manifestation of the trauma Tanya had experienced, as it was an instinctive reaction made for the purpose of staying safe rather

252. See Fondacaro, *The Rebirth of Rehabilitation*, *supra* note 84, at 729.

253. See *id.* Fondacaro qualifies this principle with the corollary that the record be retained for the purpose of assessing risk should the individual recidivate. *Id.*

254. See, e.g., Peter P.: Complaint & Demand for Jury Trial, *supra* note 186 (arguing in a lawsuit against the Compton Unified School District that trauma is a disability that must be accommodated under, among other things, the ADA and IDEA).

255. 20 U.S.C. § 1415(k)(1)(E) (2012).

256. See *id.*

257. There were no allegations of any sort that Tanya tried in any way to physically assault her mother.

than for the purpose of criminally striking fear in the mind of her mother. As such, Tanya's behavior—insofar as it was a manifestation of her past trauma—lacked the requisite criminal intent to meet the elements of the offense charged.²⁵⁸ Thus, as evidenced by the example of Tanya, the root of the allegedly delinquent behavior is a traumatized mind, not a criminal mind. A manifestation principle ensures that youth like Tanya are not treated as criminals for behavior that stems from the trauma they have suffered.

Second, a consequentialist approach focused on reducing recidivism should be constrained by a restoration principle. Specifically, the proposed restoration principle would require that intervention by the court comply with four criteria: (1) interventions are to be implemented in the least-restrictive setting; (2) interventions do not further segregate system-involved youth from pro-social peers; (3) interventions implemented can continue once the jurisdiction of the court has terminated; and (4) the jurisdiction of the court remains as short as is effective. Due to the fact that the number of ACEs suffered correlates with a higher risk profile, as well as the difficulty in accurately measuring when risk has decreased below a prescribed level,²⁵⁹ a consequentialist system likely would lead to longer and more intense interventions for youth who have suffered substantial trauma. However, longer, more intensive interventions with youth who are also in the delinquency system will make the youth more susceptible to the iatrogenic and institutionalizing effects of the juvenile justice system.²⁶⁰ A proposed restoration principle can mitigate these effects. The goal of such a principle would be to connect youth to effective interventions that would not involve delinquent peers and would continue beyond the termination of the court's jurisdiction.

Kevon's case can be used as an example to illustrate the restoration principle. Kevon was adjudicated delinquent for a fight that happened between two groups of boys on a weekend evening. While under court supervision, Kevon often did not go to school because he could not afford to wash his uniform or to take the bus to the other side of the city. While the behavior that brought Kevon into the system had nothing to do with school, missing school regularly was a violation of a condition of his release. In such instances, system stakeholders often seek to intervene to ensure school attendance by requiring the student to carry an

258. See *Elonis v. United States*, 135 S. Ct. 2001, 2012 (2015) (holding that the offense of threats requires that the person making the threats “transmit[] a communication for the purpose of issuing a threat or with knowledge that the communication will be viewed as a threat”).

259. See Slobogin & Fondacaro, *supra* note 210, at 47–49 (admitting that “predictive judgments will . . . always be suspect even if . . . advances continue”).

260. See Uberto Gatti et al., *Iatrogenic Effect of Juvenile Justice*, 50 J. CHILD PSYCHOL. & PSYCHIATRY 991, 995 (2009) (finding that the more restrictive and more intense the intervention, the greater the negative impact); see also Arredondo, *supra* note 210, at 20 (“[P]rolonged detention is also problematic because the child is undergoing developmentally important phases of life in institutional settings with idiosyncratic demands particular to that setting. Consequently, the child is adapting to incarceration and an institution, not to the community from which she came and to which she will return.”).

attendance card; placing the youth on GPS monitoring; requiring the youth to attend an evening reporting center for tutoring; removing the youth from the home and placing him in a shelter home for delinquent youth; and/or prolonging his court involvement. These are all short-term intervention options, and would be available to Kevon only during the pendency of the case. Applied to Kevon's case, the restoration principle would favor different interventions. First, rather than intervening in a manner that would further label Kevon (e.g., attendance card or GPS monitoring) or place him in a program consisting entirely of youth in the delinquency system (e.g., evening reporting center or shelter home), the restoration principle would require that system stakeholders first seek interventions like additional monetary assistance for the family and/or after-school tutoring in a community-based program for all youth, prior to placement in a more-restrictive, less-mainstream option. Second, unless Kevon's lack of school attendance can be connected directly to Kevon's risk of recidivism, Kevon's involvement in the juvenile justice system should not be prolonged. Thus, while attending school daily would likely be beneficial to Kevon, a system narrowly focused on recidivism reduction and restoration would find it unnecessary to extend and prolong the court involvement, as further court supervision would have no added public-safety benefit. Conversely, the types of interventions suggested here could continue, as they are available to Kevon outside his court involvement.

2. *Implementing Systemic Changes for a Trauma Informed Juvenile Justice System*

While a change in philosophy is a necessary step to reform, changing the philosophy alone is not sufficient. The juvenile justice system must also implement a number of systemic changes so that it is better equipped to accommodate the impact of childhood trauma.

a. *Promoting Prevention*

First and foremost, the juvenile justice system should use its insights from providing tertiary care to youth who have experienced trauma to push actively for expanded and improved primary and secondary prevention efforts. Scientific research confirms that it is more effective and less expensive to prevent toxic stress from happening than to attempt to treat the consequences of such stress later in life.²⁶¹ Additionally, when toxic stress cannot be prevented, intervening as early as

261. Policies and programs that identify and support children and families that are most at risk for experiencing toxic stress as early as possible will reduce or avoid the need for costlier and less effective remediation and support programs down the road. See THE IMPACT OF EARLY ADVERSITY, *supra* note 184, at 1; see also LIPSEY ET AL., *supra* note 241, at 11, 38 (discussing the important role of primary and secondary prevention in any strategy for reducing delinquency); Niehoff, *supra* note 37, at 876.

possible to mitigate the impact of the stress is the next-best option.²⁶² Therefore, juvenile justice system stakeholders should work to promote a public-health approach to delinquency prevention with a particular emphasis on robust, evidence-based primary and secondary prevention efforts.²⁶³ Such a strategy necessarily would involve a deliberate attempt to shift resources from the expensive, ineffective interventions like juvenile prisons to a continuum of value-driven, community-based interventions that aim to prevent and treat trauma before it manifests itself in delinquent or criminal behavior.²⁶⁴ Examples of specific interventions that could be recommended as part of a coordinated public-health approach are the Nurse-Family Partnership,²⁶⁵ Triple P—Positive Parenting Program,²⁶⁶ the Incredible Years,²⁶⁷ the Good Behavior Game,²⁶⁸ and Cognitive Behavioral Intervention for

262. See THE SCIENCE OF EARLY CHILDHOOD DEVELOPMENT, *supra* note 106, at 2 (“The basic principles of neuroscience and the technology of human skill formation indicate that later remediation for highly vulnerable children will produce less favorable outcomes and cost more than appropriate intervention at a younger age.”).

263. See Baglivio et al., *supra* note 118, at 11–12 (suggesting various primary prevention efforts, including parental support; early detection, intervention, and treatment for toxic stress; and developing community-wide strategies to build resilience and protective factors). According to a report by the Harvard Center on the Developing Child:

[B]ecause the effects of cumulative stress are buffered by maternal responsiveness, it is likely that supportive relationships with adults can provide an important coping resource for children and may prevent chronic stress from damaging the developing stress response system of children. Children in supportive families, or in families where parent support can be enhanced, do not experience enhanced physiological risk from cumulative stress.

HARVARD UNIV., CTR. ON THE DEVELOPING CHILD, EFFECTS OF CHILDHOOD STRESS CAN ACCUMULATE IN THE BODY 2 (2008).

264. Reclaim Ohio is an example of an initiative that seeks to reallocate resources within the juvenile justice system from juvenile jails and prisons to community-based programming for delinquent youth. See *What is RECLAIM Ohio?*, OH. DEP’T OF YOUTH SERVS. <http://www.dys.ohio.gov/dnn/Community/RECLAIMOhio/tabid/131/Default.aspx> (last visited Feb. 16, 2016). Adopting a public health approach to delinquency, as called for in this Article, would require a larger effort to shift resources from the juvenile and criminal justice systems to primary and secondary prevention programs.

265. The Nurse-Family Partnership (“NFP”) is a home-visiting program conducted by public health nurses that “addresses substance abuse and other behaviors that contribute to family poverty, subsequent pregnancies, poor maternal and infant outcomes, suboptimal childcare, and limited opportunities for the children.” See *Nurse-Family Partnership*, NAT’L INST. OF JUSTICE, <https://www.crimesolutions.gov/ProgramDetails.aspx?ID=187> (last visited Feb. 16, 2016). NFP falls into the category of primary prevention.

266. Triple P Parenting is “a comprehensive parent-training program with the purpose of reducing child maltreatment and children’s behavioral problems. It is built upon a public health approach and as such was designed to treat large populations.” *Triple P — Positive Parenting Program*, NAT’L INST. OF JUSTICE, <https://www.crimesolutions.gov/ProgramDetails.aspx?ID=80> (last visited Feb. 16, 2016). Triple P falls into the category of primary prevention.

267. The Incredible Years includes “three multifaceted and developmentally-based curricula for parents, teachers, and children” that seek “to reduce challenging behaviors in children and increase their social and self-control skills.” *The Incredible Years*, NAT’L INST. OF JUSTICE, <https://www.crimesolutions.gov/ProgramDetails.aspx?ID=194> (last visited Feb. 16, 2016). The Incredible Years falls into the category of secondary prevention.

268. The Good Behavior Game (“GBG”) is a classroom management strategy “designed to improve aggressive/disruptive classroom behavior and prevent later criminality. GBG attempts to reduce a child’s externalizing behavior and to promote prosocial behavior by encouraging positive interactions with peers.” *Good*

Trauma in Schools (CBITS).²⁶⁹*b. Shifting the Frame*

In line with the shift in philosophy, there also needs to be a shift in the frame in order for juvenile justice system stakeholders to be sensitive to trauma. Indeed, a shift in framing from, “What is wrong with you?” to, “What has happened to you?” is exactly what forms the foundation of a trauma-informed system.²⁷⁰ In the context of the juvenile justice system, the dominant frame through which a matter before the court is viewed must shift from the alleged delinquent offense itself to a holistic view of the child.²⁷¹ Indeed, the founders of the juvenile justice system understood the importance of framing the case more broadly than the mere delinquent acts of the individual youth, choosing instead to focus its attention on the “environmental causes of delinquency” and “evaluating the whole child.”²⁷² Nevertheless, despite choosing the correct frame, the first-era juvenile courts were overly paternalistic, failed to provide youth with actual rehabilitation, and routinely violated the due process rights of the youth under their supervision.²⁷³ While the due process reforms of the *Gault* era were a necessary correction and move away from the paternalistic manner in which decisions were made in the era of the original juvenile court, the “tough on crime” approach that followed the *Gault* due process era led to a narrower focus on the offense itself rather than a holistic approach to the child.²⁷⁴ While the pendulum has begun to swing back to the original frame of the founders of the juvenile justice system,²⁷⁵ the dominant frame through which far too many cases are viewed remains the alleged delinquent or

Behavior Game, NAT’L INST. OF JUSTICE, <https://www.crimesolutions.gov/ProgramDetails.aspx?ID=188> (last visited Feb. 16, 2016). GBG falls into the category of secondary prevention.

269. Cognitive Behavioral Intervention for Trauma in Schools (“CBITS”) is based on the principles of cognitive behavioral therapy (“CBT”) but is modified for use in schools with youth, ages ten-to-fifteen, who have experienced trauma. The goals of CBITS are “(1) to reduce symptoms related to trauma, 2) to build resilience, and 3) to increase peer and parent support. The program was developed to reduce symptoms of distress and build skills to improve children’s abilities to handle stress and trauma in the future.” *Cognitive Behavioral Intervention for Trauma in Schools*, NAT’L INST. OF JUSTICE, <https://www.crimesolutions.gov/ProgramDetails.aspx?ID=139> (last visited Feb. 16, 2016). CBITS falls into the category of secondary prevention.

270. Baglivio et al., *supra* note 118, at 13 (describing the “central precept” of Trauma-Informed Care (“TIC”) as “asking ‘What has happened to you?’ rather than the customary ‘What is wrong with you?’”).

271. A holistic view of the youth consists of the youth’s full memoir with the court case merely comprising a chapter. Such a view includes a full social history of the youth dating from when the youth was in the womb to present day. This narrative should include a full account of the youth’s risk and protective factors, including a history of the youth’s adverse childhood experiences.

272. See Tamar R. Birkhead, *Juvenile Justice Reform 2.0*, 20 J.L. & POL’Y 15, 38 (2011) [hereinafter Birkhead, *Juvenile Justice Reform 2.0*].

273. See Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 391–95.

274. See Birkhead, *Juvenile Justice Reform 2.0*, *supra* note 272, at 39–41 (“Together these cases reflected the view that the system’s purpose is to assess whether a young person committed a criminal offense, and that juvenile courts should be concerned with what a child *does*, rather than who a child *is*.”); see also Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 395–97.

275. See Henning, *Criminalizing Normal Adolescent Behavior*, *supra* note 11, at 401–04.

defiant actions of the youth.²⁷⁶ As a result, the juvenile justice system has more work to do to ensure that a complete picture of the youth is again the dominant frame through which the alleged actions of the youth are viewed and understood and recidivism reduction is pursued.²⁷⁷

Juan's case can be used as an example to illustrate the importance of shifting the frame. Prior to allegedly stealing candy from a corner store, Juan exhibited behavioral issues at home and in school that were direct manifestations of the trauma he suffered throughout his childhood in both his biological and his adoptive homes. These behavioral issues persisted when Juan was taken into custody and placed at various shelter and foster homes in the District of Columbia and surrounding metropolitan area. As a result, Juan's history of trauma, in effect, prevented him from fully complying with the release orders in his delinquency case. If Juan's actions themselves had been the dominant frame through which Juan's case was judged, Juan would have been seen as a deliberately defiant delinquent with a penchant for running away. However, as a result of Juan's history and mental-health diagnoses, Juan's case was referred to a therapeutic, problem-solving court focused on addressing the behavioral health needs of youth in the District of Columbia's delinquency system.²⁷⁸ Consequently, Juan's actions were viewed in the context of Juan's whole life, including his trauma history and behavioral health needs, rather than just his recent actions. Additionally, instead of Juan being securely detained as a result of his difficulty complying with conditions of release (which likely would have been the case had Juan been on a more traditional court calendar), Juan was provided with a host of community-based services to address his particular needs.

In the end, Juan's case was closed in favor of the foster care system's providing supervision and services for Juan. Had it not been for the shift in frame from a focus on Juan's behavior to his trauma history and mental-health needs, Juan's case likely would have penetrated deeper and deeper into the delinquency system rather than find its proper place in the neglect system.

276. *See id.* at 402–04.

277. Importantly, shifting the dominant frame from the alleged actions of the child to a complete picture of the child does not require eliminating the due process protections put in place in the *Gault* era. Indeed, the due process protections recognized in *Gault* and its progeny are critical protections to which youth are entitled. Shifting the framing means merely that the fact finder views the alleged actions of the youth in light of the whole child rather than the whole child's being viewed through the prism of the alleged actions of the youth.

278. The Juvenile Behavioral Diversion Program is a Juvenile Mental Health Court ("JMHC") launched in the District of Columbia in 2011. *See* Aaron M. Ramirez et al., *Recidivism and Psychiatric Symptom Outcomes in a Juvenile Mental Health Court*, 66 *JUV. & FAM. CT. J.* 31, 32 (2015). The Juvenile Behavioral Diversion Program has two overarching objectives: (1) reduce recidivism, and (2) treat psychiatric symptoms that overlap with delinquent behavior. *See id.* at 31–32.

c. Using Tools that Work

In order to effectively and consistently realize the goal of recidivism reduction consistent with a consequentialist approach to juvenile justice, the system itself must simply use evidence-based tools that work. First and foremost, in light of the high prevalence of youth in the juvenile justice system who have suffered childhood trauma, the system must implement a trauma-informed approach.²⁷⁹ Key elements of a trauma-informed approach include (1) regular screening for exposure to trauma, (2) a focus on providing resources and support not just to the child but to the entire family, (3) addressing risk factors while building resilience,²⁸⁰ and (4) collaborating among multiple child-serving systems.²⁸¹

Second, in light of the need to assess risk accurately, the system needs sophisticated, validated screening tools.²⁸² Examples of such risk assessments include: (1) the Early Assessment Risk List; (2) the Structured Assessment of Violence Risk in Youth; (3) the Youth Level of Service/Care Management Inventory; (4) the Hare Psychopathy Checklist-Youth; and (5) the Risk, Sophistication-Maturity, and Treatment Amenability Inventory.²⁸³

Third, the system must pursue community-based therapeutic interventions that are proven to reduce recidivism, while avoiding ineffective or counterproductive sanctions.²⁸⁴ Evidence-based interventions help both youth and their families process trauma and its impact on development, helping youth to identify new ways of responding to stress and of avoiding behavior that can land them in the juvenile justice system. Examples of such evidence-based interventions include: (1) Multi-Systemic Therapy,²⁸⁵ (2) Family Functional Therapy,²⁸⁶ (3) Aggression Replace-

279. According to the National Child Traumatic Stress Network:

[A] service system with a trauma-informed perspective is one in which programs, agencies, and service providers: (1) routinely screen for trauma exposure and related symptoms; (2) use culturally appropriate evidence-based assessment and treatment for traumatic stress and associated mental health symptoms; (3) make resources available to children, families, and providers on trauma exposure, its impact, and treatment; (4) engage in efforts to strengthen the resilience and protective factors of children and families impacted by and vulnerable to trauma; (5) address parent and caregiver trauma and its impact on the family system; (6) emphasize continuity of care and collaboration across child-service systems; and (7) maintain an environment of care for staff that addresses, minimizes, and treats secondary traumatic stress, and that increases staff resilience.

Creating Trauma-Informed Systems, NAT'L CHILD TRAUMATIC STRESS NETWORK, <http://www.nctsnet.org/resources/topics/creating-trauma-informed-systems> (last visited Feb. 16, 2016).

280. Resilience is "the ability to successfully adapt and function proficiently when faced with traumatic circumstances" or "the ability to bounce back from adverse situations and go on." See Logan & Barksdale, *supra* note 119, at 205.

281. See *Creating Trauma-Informed Systems*, *supra* note 279.

282. See Slobogin & Fondacaro, *supra* note 210, at 25.

283. See *id.*

284. LIPSEY ET AL., *supra* note 241, at 21–29; Arredondo, *supra* note 210, at 20 ("[V]irtually every effective evidence-based intervention for delinquency occurs in the home and community.").

285. Multisystem Therapy ("MST") is a home-based intervention that "aims to uncover and assess the functional origins of adolescent behavioral problems [and] works to alter the youth's ecology in a manner that

ment Therapy,²⁸⁷ and (4) Trauma Focused Cognitive Behavioral Therapy.²⁸⁸

Fourth, the system also should stop utilizing threat-based or control-based interventions that can cause harm to the youth.²⁸⁹ In particular, the system should (1) avoid careless sanctioning,²⁹⁰ (2) limit the use of out-of-home placement,²⁹¹ and (3) eliminate the direct file or transfer of youth to the adult system.²⁹²

Fifth, the court must regularly evaluate and monitor the success of its youth, the stakeholders, and the overall system itself.²⁹³ Such evaluation and monitoring should occur on two levels. On the individual-case level, the court should consider

promotes prosocial conduct while decreasing problem and delinquent behavior.” *Multisystemic Therapy*, NAT’L INST. OF JUSTICE, <https://www.crimelutions.gov/ProgramDetails.aspx?ID=192> (last visited Feb. 16, 2016).

286. Family Functional Therapy (“FFT”) is:

[A] family-based prevention and intervention program for high-risk youth that addresses complex and multidimensional problems through clinical practice that is flexibly structured and culturally sensitive. The FFT clinical model concentrates on decreasing risk factors and on increasing protective factors that directly affect adolescents, with a particular emphasis on familial factors.

Functional Family Therapy, NAT’L INST. OF JUSTICE, <https://www.crimelutions.gov/ProgramDetails.aspx?ID=122> (last visited Feb. 16, 2016).

287. Aggression Replacement Training (“ART”) “concentrates on development of individual competencies to address various emotional and social aspects that contribute to aggressive behavior in youths The main goal is to reduce aggression and violence among youths by providing them with opportunities to learn prosocial skills in place of aggressive behavior.” *Aggression Replacement Training*, NAT’L INST. OF JUSTICE, <https://www.crimelutions.gov/ProgramDetails.aspx?ID=254> (last visited Feb. 16, 2016).

288. Trauma Focused Cognitive Behavioral Therapy (“TF-CBT”) “aims to treat serious emotional problems such as posttraumatic stress, fear, anxiety, and depression by teaching children and parents new skills to process thoughts and feelings resulting from traumatic events.” *Trauma-Focused Cognitive Behavioral Therapy*, NAT’L INST. OF JUSTICE, <https://www.crimelutions.gov/ProgramDetails.aspx?ID=195> (last visited Feb. 16, 2016).

289. See Birkhead, *supra* note 222, at 1477–78 (“Research has suggested, however, that active adolescent offenders may be less sensitive to the threat of sanctions and rational choice theory than either adults or young people who have not previously engaged in criminal activity.”); LIPSEY ET AL., *supra* note 241, at 13–15 (finding control-based interventions less effective than their therapeutic counterparts).

290. Arredondo, *supra* note 210, at 13. Dr. Arredondo states the following:

[T]here may be paradoxical or untoward negative developmental consequences of incompetent or developmentally inappropriate sanctions by a juvenile court. Simply put, there is the very real risk that the system can do more harm than good to a child who is still in the process of neurobiological, psychological, social, and moral development. Because of this, the negative consequences of careless sanctioning may be more enduring for a child (and for society) than they might be for an adult.

Id.

291. See *id.* at 14 (“The application of the child development considerations described in this paper should lead to decreased rates and durations of detention and decreased use of interventions with no positive evidence base for all detained youth.”). See generally Aizer & Doyle, *supra* note 221 (analyzing a linked data set covering a period of more than ten years and over 35,000 juveniles who came before a juvenile court in Chicago, Illinois, to find that juvenile incarceration is estimated to decrease high school graduation by thirteen percentage points and increase adult incarceration by twenty-two percentage points).

292. See CAMPAIGN FOR YOUTH JUSTICE, CAPITAL CITY CORRECTION: REFORMING DC’S USE OF ADULT INCARCERATION AGAINST YOUTH 14–17 (2014), http://www.campaignforyouthjustice.org/images/pdf/Capital_City_Correction.pdf (discussing the research regarding the inefficacy of prosecuting, detaining, and incarcerating youth as adults).

293. See Fondacaro, *The Rebirth of Rehabilitation*, *supra* note 84, at 729.

setting more regular reviews to ensure the youth is compliant and is progressing toward his or her goals, depending on the age, risk level, and needs of the youth.²⁹⁴ Regular reviews also have the benefit of holding the adults accountable, and ensuring that service providers are engaging the youth.²⁹⁵ Additionally, on the systemic level, the court should regularly collect and analyze data relating to the demographic factors of the youth, the ACEs suffered, additional risk factors, protective factors, interventions provided, and recidivism rates. Such data collection will assist the court in determining whether the recidivism reduction goals of the delinquency system are being met and what changes may need to be made to improve the system's efficacy.²⁹⁶

CONCLUSION

Childhood trauma has a host of adverse impacts on normative development that cannot be ignored by the juvenile justice system. Just as the Supreme Court has recognized the research describing the decision-making deficiencies associated with normative adolescent development as legally relevant to the determination of sanctions, the juvenile justice system should recognize the research explaining the impact of trauma on development. However, due to the prevalence of adverse childhood experiences in the population of youth served by the juvenile justice system, accommodating the impact of trauma cannot be limited merely to the determination of sanctions, but instead must result in wholesale reform of the juvenile courts—from their philosophy to their practices. If the juvenile justice system is reformed to better accommodate trauma, the juvenile justice system should be smaller, more focused, and more effective.

294. See Arredondo, *supra* note 210, at 19–20 (discussing the need of the juvenile justice system to “mark time in accordance with the needs of individual youth at different stages of maturation”).

295. The number of reviews and the time, place, and manner of those reviews should be balanced with the needs and particular situation of the youth and family. While more regular reviews may be beneficial, the reviews must be done in a manner where the additional burden on the youth and family outweighs the benefits of the more regular reviews.

296. See Fondacaro, *The Rebirth of Rehabilitation*, *supra* note 84, at 728–29.

APPENDIX 1. ADVERSE CHILDHOOD EXPERIENCE SURVEY²⁹⁷

Prior to your eighteenth birthday:

1. Did a parent or other adult in the household *often or very often* . . . swear at you, insult you, put you down, or humiliate you? Or act in a way that made you afraid that you might be physically hurt?
If Yes, enter 1 ____
2. Did a parent or other adult in the household *often or very often* . . . push, grab, slap, or throw something at you? Or ever hit you so hard that you had marks or were injured?
If Yes, enter 1 ____
3. Did an adult or person at least five years older than you *ever* . . . touch or fondle you or have you touch their body in a sexual way? Or attempt or actually have oral, anal, or vaginal intercourse with you?
If Yes, enter 1 ____
4. Did you *often or very often* feel that . . . no one in your family loved you or thought you were important or special? Or your family didn't look out for each other, feel close to each other, or support each other?
If Yes, enter 1 ____
5. Did you *often or very often* feel that . . . you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? Or your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
If Yes, enter 1 ____
6. Was a biological parent *ever* lost to you through divorce, abandonment, or another reason?
If Yes, enter 1 ____
7. Was your mother or stepmother *often or very often* pushed, grabbed, slapped, or had something thrown at her? Or was she *sometimes, often, or very often* kicked, bitten, hit with a fist, or hit with something hard? Or *ever* repeatedly hit over at least a few minutes or threatened with a gun or knife?
If Yes, enter 1 ____
8. Did you live with anyone who was a problem drinker or alcoholic, or who used street drugs?
If Yes, enter 1 ____
9. Was a household member depressed or mentally ill, or did a household member attempt suicide?
If Yes, enter 1 ____
10. Did a household member go to prison?
If Yes, enter 1 ____

The sum of the "Yes" answers is one's ACE score.

²⁹⁷. See NAKAZAWA, *supra* note 116, at xxi–xxiv.