Domestic Violence, Developing Brains, and the Lifespan
New Knowledge from Neuroscience

By Lynn Hecht Schafran

The author suggests that, before reading this article, you go to YouTube.com and watch *First Impressions: Exposure to Violence and a Child's Developing Brain* (15 minutes) featuring Dr. Bruce Perry, senior fellow of the ChildTrauma Academy in Houston, Texas,[1] and Dr. Linda Chamberlain, founding director, Alaska Family Violence Prevention Project,[2] available at http://www.youtube.com/watch?v=brVOYtNMmKk.[3]

The New England Journal of Medicine recently published an article titled "Silent Victims—An Epidemic of Childhood Exposure to Domestic Violence." It called on healthcare providers to understand the prevalence and neurobiological consequences of children's exposure to domestic violence and take action to mitigate it.

> Childhood IPV [Intimate Partner Violence] exposure has been repeatedly linked to higher rates of myriad physical health problems in children. Altered neuroendocrine stress response may be one important mechanism accounting for this correlation. Highly stressful environmental exposure, such as exposure to IPV, causes children to repeatedly mount the "fight or flight" reaction. Although this response may be adaptive in the short term, repeated activation . . . results in pathologic changes in multiple systems over time; some experts refer to this effect as the biologic embedding of stress.[4]

The *First Impressions: Exposure to Violence and a Child's Developing Brain* video starts with Dr. Perry explaining that contrary to what was long believed, neuroscience shows that the brains of babies and young children are sponges that soak up and are shaped by everything in their environment, including the harm of exposure to domestic violence. Dr. Linda Chamberlain, founding director of the Alaska Family Violence Prevention Project, explains the evolution of her understanding that even babies and young children are impacted by exposure to domestic violence and how that impact is experienced and expressed by children of different ages. "The Enduring Effects of Abuse and Related Adverse Experiences in Childhood: A Convergence of Evidence from Neurobiology and Epidemiology" is an article by neuroscientists, pediatricians, physicians, and public health experts who assessed the findings of the long-running Adverse Childhood Experiences (ACE) study in the context of the new knowledge from neuroscience. The ACE questionnaire includes questions about childhood exposure to domestic violence and adult perpetration. After reviewing the more than 17,000 responses from the mostly white, well-educated sample, they wrote:

> [T]he detrimental effects of traumatic stress on developing neural networks and on the neuroendocrine systems that regulate them have until recently remained hidden even to the eyes of most neuroscientists. However, the information and data that we present herein suggest that this veiled cascade of events represents a common pathway to a variety of important long-term behavioral, health, and social problems.

The convergence of evidence from neurobiology and epidemiology calls for an integrated perspective on the origins of health and social problems through the lifespan.[5]

This evidence leaves no doubt that when a nonabusing parent seeks help from the courts to protect a child from exposure to domestic violence, judges' decisions can literally shape the child's brain and impact the child's mental and physical health, learning capacity, and behavior across the child's lifetime.

Defining Domestic Violence

The justice system's efforts to address domestic violence have been hampered by a schema that defines domestic violence as fist-in-the-face physical assault and harm to children as possible only if they see it. But domestic violence has many dimensions that together create an ongoing climate of tension and fear. In *A Judicial Guide to Child Safety in Custody Cases*, the National Council of Juvenile and Family Court Judges provides this comprehensive definition:

> [Domestic violence is] a pattern of assaultive and coercive behaviors that operate at a variety of levels—physical, psychological, emotional, financial or sexual—that one parent uses against the other parent. The pattern of behaviors is neither impulsive nor "out of control" but is purposeful and instrumental in order to gain compliance or control.[6]

Articles about domestic violence sometimes describe children as "witnesses," a problematic term for two reasons. First, "witness" implies a passive bystander, whereas children are deeply engaged with everything that happens in their family environment. Second, a child might never see or hear the physical or sexual abuse yet be profoundly harmed by the atmosphere of fear in which he or she lives. The preferred terminology is children "exposed" to domestic violence.

The Social Science Is Confirmed and Explained by the Neuroscience

Social science research amassed over the last few decades documents the many ways exposure to domestic violence undermines children's mental and physical health, social and emotional development, and interpersonal relationships, as well as the fact that it is often intergenerational.[7] Exposure to domestic violence can lead to behaviors "such as substance abuse, suicide attempts, and depressive disorders."[8] A review of the social science literature published just between 1995 and 2006 identified over 1,000 articles and concluded:

> At its most basic level, living with the abuse of their mother is to be considered a form of emotional abuse, with negative implications for children's emotional and mental health and future relationships. . . . Growing up in an abusive home[9] can critically jeopardize the developmental progress and personal ability of children, the cumulative effect of which may be carried into adulthood and can contribute significantly to the cycle of adversity and violence. Exposure to domestic violence may have a varied impact at different stages with early and prolonged exposure potentially creating more severe problems because it affects the subsequent chain of development.[10]

The social science and the neuroscience may be thought of as the "what" and the "why." Social science tells us *what* exposure to domestic violence does to children's development and behavior. Neuroscience tells us *why*.

The Neuroscience

Dr. Bruce Perry, as noted above, is a senior fellow at the ChildTrauma Academy in Houston; Dr. Jack P. Shonkoff is director of the Center for the Developing Child at Harvard University; and Dr. Edward Tronick is director of the Child Development Unit at Harvard. Many of their publications on the neuroscience of developing brains are intended for nonscientists in the hope that this new knowledge will find its way into public policy, the legal system, education, and public health, to the benefit of the individual child and society as a whole. This summary is drawn from several of their publications and videos, all available online.[11]

In infancy and young childhood, the

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human brain is extremely plastic, growing new neurons and making synaptic connections in response to sensory, perceptual, and affective experiences. Infants' experiences—most importantly, their relationship with their primary caregiver—literally shape the architecture of their brains.

Developing brains are acutely sensitive to stress and to the internal state of the caregiver upon whom the child depends. Even babies experience the fight-or-flight response and can dissociate or stage a mental retreat in the face of an acute or persistent threat. In a safe environment where the child has a nurturing relationship with a caregiver, moderate stress produces resilience. Some stress is normal and healthy for brain development. Children need to learn to deal with everyday stress. But in an unpredictable, tension-filled, violent environment where the stress is inescapable, it becomes toxic, unleashing a storm of neurochemicals that result in "embedded stress."[12] Children learn to become fearful through this "fear conditioning," which is strongly connected to anxiety disorders across the lifespan.

Lundy Bancroft, an expert on batterers as parents, writes that "[the] abuser creates a pervasive atmosphere of crisis in his home."[13] Children persistently exposed to domestic violence live in an ongoing "alarm" state, with powerful stress hormones, particularly cortisol, repeatedly priming them to flee or fight. This alarm state has many negative consequences for brain development. The hippocampus is critical for learning and memory. Toxic stress shrinks this area of the brain, leading to memory deficits, as seen in children and adults with post-traumatic stress disorder (PTSD). The work of the brain is carried out by circuits created by synaptic connections. When the levels of cortisol and other stress hormones rise and remain elevated for days or months at a time, these hormones "poison" the circuits developing in the brain at that time, with lifetime consequences. If the circuit affected is one that would otherwise be involved in building trust in a relationship, for example, absent an effective intervention that circuit is disrupted for life.

> The most beneficial action a court can take for a child exposed to domestic violence is to end the exposure and support the protective parent.

While some children exposed to domestic violence are trapped in a fight-or-flight alarm state, others—especially infants and young children who can neither fight nor flee—dissociate, sometimes called the defeat response. They turn inward, go somewhere safe in their imagination, feel as if they are observing rather than experiencing the situation from which escape is impossible. Like adults, for most children the response to an extreme stress—when neither fight nor flight is possible—may be to turn to dissociation.

Children subjected to toxic stress often display symptoms linked to the neurobiology of their major coping adaptation. The more prolonged the stressor, the greater the likelihood of long-term symptoms over the lifespan. The neurochemical system of the dissociating child predisposes to somatic complaints, withdrawal, helplessness, dependence, anxiety disorders, and major depression. The neurochemical system of the fight-or-flight child is predisposed to symptoms related to persistent hyperarousal, such as increased startle response, serious sleep disorders, anxiety, hyperactivity, conduct disorder, attention deficit and hyperactivity disorder (ADHD), and PTSD. The fact that children raised in an environment of persistent exposure to domestic violence are more likely to be violent themselves as children and adults is likely linked to their being in constant fight-or-flight mode and the cognitive distortions their fear produces. Everything—even eye contact or a shoulder tap—is perceived as threatening and elicits impulsive, violent reactions.

Dr. Perry explains that living in an alarm state has critical implications for children's ability to learn:

> When a child is in a persisting state of low-level fear that results from exposure to violence, the primary areas of the brain that are processing information are different from those in a child from a safe environment. The calm child may sit in the same classroom next to the child in an alarm state, both hearing the same lecture by the teacher. Even if they have identical IQs, the child that is calm can focus on the words of the teacher and, using neocortex, engage in abstract cognition. The child in an alarm state will be less efficient at processing and storing the verbal information the teacher is providing.[14]

The resulting failure to learn has consequences across the lifespan.

What Can a Judge Do for Children Exposed to Domestic Violence?

Children's healthy brain development is supported by a nurturing relationship with one or more adults, especially the child's primary caregiver, usually the mother. The most important thing a judge can do to protect children exposed to domestic violence and help them heal is to end their exposure and support the child's relationship with the nonabusing parent.

The critical importance of the child's connection to the nurturing parent is dramatically illustrated in a DVD titled *Helping Babies from the Bench: Using the*

Science of Early Childhood Development in Court,[15] created by Florida Judge Cindy Lederman, a pioneer in using neuroscience to improve children's lives. Judge Lederman's DVD presents the neuroscience of the developing brain and the operations of her court and related agencies. Judges find that a segment of the DVD is helpful in understanding why it is vital to support and protect the bond between a child and his or her nurturing parent. It is the "Still Face Experiment" in which Dr. Tronick films a mother interacting with her year-old baby, which is available on YouTube.[16]

The child is in an infant seat while the mother crouches to be on eye level with her. She greets the baby; the baby greets her. The baby points; the mother looks in the direction in which the baby is pointing. They are closely engaged with each other, keeping eye contact, smiling, talking or making responsive noises, coordinating their emotions and intentions.

Then the mother is asked to turn away and turn back with a "still" face. The baby is immediately puzzled and tries to engage her in the kind of reciprocal communication she expects, but the mother remains impassive. Within two minutes the baby's stress is palpable. When she cannot elicit the engaged reaction she expects, she reacts with clearly negative emotions and screechy, beseeching sounds. Then the mother smiles and engages in her usual interactive play with the baby. Instantly the child is happy again.

Implications for the Courts of the New Knowledge from Neuroscience

The new knowledge from neuroscience has significant implications for many kinds of court cases as well as community safety.

Abuse and Neglect

Sometimes mothers seeking an order of protection are themselves charged with "failure to protect" and lose their children to foster care for "allowing" their children to be exposed to domestic violence. Apart from the fact that this outcome has been held unconstitutional,[17] and the irony of charging a protective mother with "failure to protect," from a neuroscience point of view this outcome is profoundly harmful for children. The most beneficial action a court can take for a child exposed to domestic violence is to end the exposure and support the nonabusive parent's efforts to protect the child. Support includes helping her to secure the services she needs, a safe place to live, and economic independence so that she and the child need not return to the batterer.

In some cases, it is necessary to remove children because the mother does not recognize that the maltreatment, cruelty, and exploitation to which she is being subjected is harmful to her and her children.[18] These are complex cases, but in *Helping Babies from the Bench*, Dr. Shonkoff observes that child welfare agencies blunder in how they use foster care. Repeatedly changing children's placements is intended to prevent children from forming a close attachment with their foster parents. Neuroscience shows that having a close attachment with a nurturing parental figure supports healthy brain development and, in cases like these, can restore brain health.[19]

Custody and Visitation

Today every state's custody statute includes domestic violence as a factor to be considered in determining the best interests of the child, the standard for determining custody and visitation. Yet numerous studies over many years document that courts often award custody, joint custody, and unsupervised visitation to abusers.[20] What if, instead of saying that children exposed to domestic violence are "at risk," we said children exposed to domestic violence are "at risk of brain damage"? How would that shape perceptions of the "best interests of the child"?

The United States is having a national conversation about whether children should participate in contact sports because neuroscience has shown that concussions bounce the brain against the skull ("brain slosh"), resulting in traumatic brain injury and the long-term consequences that led former players to sue the National Football League.[21] Similarly, neuroscience now shows us that for children, chronic exposure to domestic violence also results in physical changes to the brain, impairment of brain function, and consequences for physical and mental health over the lifespan. Toxic stress changes the architecture of the child's brain. It is no less a physical agent of injury than brain slosh.

Custody Evaluators

Many judges rely on custody evaluators when making custody and visitation decisions. Repeated studies find that many evaluators know nothing about domestic violence and insist it does not harm children.[22] Neuroscience shows us that exposure to domestic violence harms children's brains at the neuronal level, with lifetime consequences. Judges should require anyone seeking appointment as a custody evaluator to demonstrate knowledge of domestic violence and the relevant social science and neuroscience. Children's lives are at risk.

The Hague Convention

The 1980 Hague Convention on the Civil Aspects of International Child Abduction[23] provides that apart from a few defenses, children abducted from their country of habitual residence should be quickly returned. Many "taking" parents are caregiver mothers[24] who assert that they were fleeing domestic violence to secure safety for their children and themselves.[25] They invoke the section 13(b) defense, which states that a child need not be returned if there is "a grave risk that his or her return would expose the child to physical or psychological harm or otherwise place the child in an intolerable situation." In 2010 the U.S. State Department acknowledged that "many" U.S. courts ignore the scientific evidence documenting that domestic violence against mothers harms children and return children to their mothers' abusers,[26] raising "significant issues related to the safety of the child and the accompanying parent."[27] Neuroscience helps judges assess "grave risk" in the domestic violence context. The toxic stress that harms developing brains comes from living in a chronic state of tension and fear. The risk for children cannot be measured solely by the gravity of their mother's physical wounds.

Judicial Education

Judicial education programs about domestic violence often include the social science research demonstrating the harm of exposure for children. It is time for these programs to include the new knowledge from neuroscience. Judge Cindy Lederman writes, "Although judges have limited time off the bench, they need to be made aware of relevant child-development research as often as they stay abreast of relevant appellate decisions involving procedure, evidence, and substantive law."[28] With the new knowledge from neuroscience, "[t]he court can be viewed as a unique public-health setting with great potential for changing human behavior."[29]

Conclusion

Many neuroscientists focus not only on the individual child, but also on how children's exposure to domestic violence has created a massive public health problem with serious implications for community safety. The U.S. Attorney General's National Task Force on Children Exposed to Violence reported that children's exposure to violence, including domestic violence, is a "national crisis . . . with effects lasting well into adulthood."[30] The social science literature review quoted earlier reported:

> [L]ongitudinal studies on pathways to delinquency have shown that young offenders are more likely to have been exposed to domestic violence, compared to their non-exposed counterparts and to become involved in anti-social behavior, violent crime, substance abuse, further delinquency and adult criminality. Finally, there is an association between exposure to domestic violence and peer aggression and bullying.[31]

Now we learn from neuroscience why this is so: Children exposed to repeated violence live in a perpetual "alarm" state, always ready to fight or flee, and carry that childhood adaptation into their adult lives. Dr. Perry offers this lesson for public policy, health policy, and the courts:

> Law, policy and practice that are biologically respectful are more effective and enduring. . . . If society ignores the laws of biology, there will inevitably be neurodevelopmental consequences. If, on the other hand, we choose to continue researching, educating and creating problem-solving models, we can shape optimal developmental experiences for our children. The result will be no less than a realization of our potential as a humane society.[32]

Human brain development is a long process, and exposure to domestic violence has specific impacts on children of all ages, from infants to teens. Thus, judges need to be mindful that in any case where a child has been exposed to domestic violence or is at risk of exposure in the future, in the words of Dr. Shonkoff, "Judges hold the integrity of a developing child's brain in their hands."[33] ■

Endnotes

1. ChildTrauma Academy, http://childtrauma.org.

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3. First Impressions: Exposure to Violence and a Child's Developing Brain (Cal. Att'y Gen. 2008).

4. Megan Bair-Merritt et al. *Silent Victims—An Epidemic of Childhood Exposure to Domestic Violence*, N. Eng. J. Med. (Oct. 31, 2013), http://www.nejm.org/doi/full/10.1056/NEJMp1307643?query=TOC.

5. Robert F. Anda, Vincent J. Felitti, J. Douglas Bremmer, John D. Walker, Charles Whitfield, Bruce D. Perry, Shanta R. Dube & Wayne H. Giles, *The Enduring Effects of Abuse and Related Adverse Experiences in Childhood: A Convergence of Evidence from Neurobiology and Epidemiology*, 256 Eur. Archives of Psychiatry & Clinical Neuroscience, no. 3, Apr. 2006, at 174, reprinted in NIH Public Access 8, *available at* http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3232061/pdf/nihms340170.pdf.

6. Nat'l Council of Juvenile & Family Court Judges, A Judicial Guide to Child Safety in Custody Cases 8 (2008). With respect to sexual abuse, see Nat'l Judicial Educ. Program, Intimate partner Sexual Abuse: The Hidden Dimension of Domestic Violence Cases, web course available at http://www.njep-ipsacourse.org, and Lynn Hecht Schafran, *Risk Assessment and Intimate Partner Sexual Abuse: The Hidden Dimension of Domestic Violence*, Judicature, Jan.–Feb. 2010, at 161. The concept of ongoing "coercive control" was developed by Dr. Evan Stark and is central to understanding domestic violence. Evan Stark, Coercive Control: How Men Entrap Women in Personal Life (2007); Evan Stark, *Coercive Control*, Fatality Rev. Bull., Spring 2010, at 2, *available at* http://www.ncdsv.org/images/NDVFRI_FatalityReviewBulletin_Spring2010.pdf.

7. *E.g.*, Am. Bar Ass'n Ctr. on Children & the Law, The Impact of Domestic Violence on Children (1994); Spouse Abuse—Statutory Presumption in Child Custody Litigation, H. Con. Res. 172, 101st Cong. (1990) (sense of Congress that every state should create a statutory presumption "[t]hat it is detrimental to the child to be placed in the custody of the abusive parent").

8. Anda et al., *supra* note 5, at 174, reprinted in NIH Public Access at 3.

9. With respect to writing about domestic violence generally, phrases such as "abusive relationship" or "abusive home" are inaccurate because they create the invisible perpetrator. Relationships and homes are not abusive; people are.

10. Stephanie Holt, Helen Buckley & Sadhbh Whelan, *The Impact of Exposure to Domestic Violence on Children and Young People: A Review of the Literature*, 32 Child Abuse & Neglect 797,799, 802 (2008) (citations omitted). This article provides specifics on the way exposure to domestic violence impacts children of different ages: infants, toddlers, pre-schoolers, school-aged children, and teenagers. A useful resource for this detailed information is a free E-book, published by the London, Ontario, Centre for Children and Families in the Justice System: Allison Cunningham & Linda Baker, Little Eyes, Little Ears: How Violence Against a Mother Shapes Children As They Grow (2007), *available at* http://www.yellowbrickhouse.org/english/2010/03/17/free-e-book-little-eyes-little-ears.

11. Nat'l Sci. Council on the Developing Child, *Persistent Fear and Anxiety Can Affect Young Children's Learning and Development* (Working Paper No. 9, 2010), http://www.developingchild.harvard.edu; First Impressions, *supra* note 3;

Helping Babies from the Bench: Using the Science of Early Childhood Development in Court (Zero to Three 2007), http://www.zerotothree.org/courtteams; Bruce D. Perry, *Maltreatment and the Developing Child: How Early Childhood Experience Shapes Child and Culture*, Margaret McCain Lecture Series (Sept. 23, 2004), http://www.lfcc.on.ca/mccain/perry.pdf; Bruce D. Perry, Effects of Traumatic Events on Children (2003), http://www.ChildTrauma.org.

12. Bair-Merritt, *supra* note 4.

13. *Understanding the Batterer in Custody and Visitation Disputes*, Lundy Bancroft (1998), http://www.lundybancroft.com/articles/understanding-the-batterer-in-custody-and-visitation-disputes.

14. Bruce D. Perry, *The Neurodevelopmental Impact of Violence in Childhood*, *in* Textbook of Child and Adolescent Forensic Psychiatry (Diane Schetky & Elaine P. Benedik, eds. 2001), http://childtrauma.org/wp-content/uploads2013/11/Neurodevel_Impact_Perry.pdf.

15. Helping Babies from the Bench, *supra* note 11.

16. Still Face Experiment, *available at* http://www.youtube.com/watch?v=apzXGEbZht0.

17. Nicholson v. Williams, 787 N.Y.S.2d 196 (Ct. App. 2004); *In re* Nicholson, 181 F. Supp. 2d 182 (E.D.N.Y. 2002).

18. Candace L. Maze, Sharon M. Aaron & Judge Cindy S. Lederman, Domestic Violence Advocacy in Dependency Court: The Miami-Dade Dependency Court Intervention Program for Family Violence Handbook 7 (2005) (In addition to the domestic violence perpetrated against the mother, estimates of physical and sexual child maltreatment in homes where there is domestic violence are as high as 50 percent.).

19. *Id.* at 10. Best, of course, is for the nurturing adult to be the child's parent. The Miami-Dade Dependency Court Intervention Program "is based on the premise that a battered mother can regain the ability to care for herself and her children if her access to personal and community resources is facilitated at the earliest opportunity and her personal growth is supported."

20. Lundy Bancroft & Jay Silverman, The Batterer as Parent (2d ed. 2011); News Release, Leadership Council on Child Abuse & Intimate Partner Violence, How Many Children Are Court-Ordered into Unsupervised Contact with an Abusive Parent After Divorce? (Sept. 22, 2008), http://leadershipcouncil.org/1/med/PR3.html; Stephanie J. Dallam & Joyanna Silberg, *Myths That Place Children at Risk During Custody Disputes*, 9 Sexual Assault Rep. 33 (2006), reprinted by the Leadership Council on Child Abuse & Intimate Partner Violence, *available at* http://www.leadershipcouncil.org/1/res/cust_myths.html; Mary Kernic et al., *Children in the Crossfire: Child Custody Determinations Among Couples with a History of Intimate Partner Violence*, 11 Violence Against Women 991 (2005); Dennis P. Saccuzzo & Nancy E. Johnson, *Child Custody, Mediation and Domestic Violence*, 251 NIJ J. 21 (2004), https://www.ncjrs.gov/pdffiles1/jr000251.pdf.

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23. Implemented by the United States through the International Child Abduction Remedies Act, 42 U.S.C. §§ 11601 et seq.

24. *See* Nigel Lowe, Hague Conference on Private International Law, Prel. Doc. No. 8 A, A Statistical Analysis of Applications Made in 2008 Under the Hague Convention of 25 October 1980 on the Civil Aspects of International Child Abduction, Part I, at 14–25 (Nov. 2011), *available at* http://www.hcch.net/upload/wop/abduct2011pd08ae.pdf.

25. Merle H. Weiner, *Half-Truths, Mistakes, and Embarrassments: The United States Goes to the Fifth Meeting of the Special Commission to Review the Operation of the Hague Convention on the Civil Aspects of International Child Abduction*, 2008 Utah L. Rev. 221, 223 n.5. (2008) (citing countries' answers to the pre-meeting questionnaire, which showed that "country after country, including the United States, recognized that domestic violence is frequently raised as an issue by the respondent in Hague proceedings").

26. *U.S. Response to Preliminary Doc. No. 21 Questionnaire Concerning the Practical Operation of the Hague Convention of 25 October 1980 on the Civil Aspects of International Child Abduction and the Hague Convention of 19 October 1996 on Jurisdiction, Applicable Law, Recognition, Enforcement and Co-operation in Respect of Parental Responsibility and Measures for the Protection of Children*, Hague Conference on Private International Law, sec. 5.1 (Nov. 2010), *available at* http://www.hcch.net/index_enphp?act+publications.details&dtid+33 (follow "United States" hyperlink).

27. *U.S. Response to Preliminary Doc. No. 2, Questionnaire on the Desirability and Feasibility of a Protocol to the Hague Convention of 25 October 1980 on the Civil Aspects of International Child Abduction*, Hague Conference on Private International Law, sec. 5.1 (Dec. 2010), *available at* http://www.hcch.net/index.en.php?act=publications.details@pic=5290&dtid=33 (follow "United States" hyperlink).

28. Cindy Lederman, *From Lab Bench to Court Bench: Using Science to Inform Decisions in Juvenile Court*, Cerebrum, Sept. 2011, *available at* http://dana.org/Cerebrum/Default.aspx?id=39466.

29. *Id.*

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31. Holt et al., *supra* note 10, at 805–06 (citations omitted).

32. Perry, *Maltreatment and the Developing Child*, *supra* note 11, at 4.

33. Helping Babies from the Bench, *supra* note 11.