

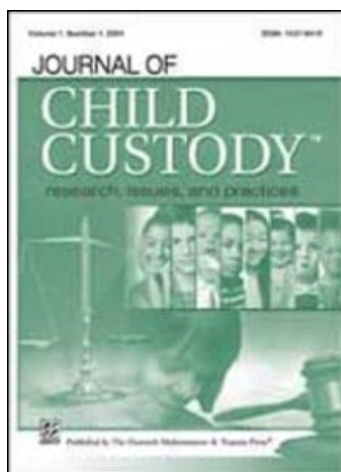
This article was downloaded by: [McKenzie, L. Brooks]

On: 2 May 2010

Access details: Access Details: [subscription number 919352075]

Publisher Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Journal of Child Custody

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t792306888>

An Attachment Based Approach to Child Custody Evaluation: A Case Study

Karyn B. Purvis ^a; L. Brooks McKenzie ^a; Gottfried Kellermann ^b; David R. Cross ^a

^a Texas Christian University, Fort Worth, Texas ^b Neuroscience Incorporated, Osceola, Wisconsin

Online publication date: 17 February 2010

To cite this Article Purvis, Karyn B. , McKenzie, L. Brooks , Kellermann, Gottfried and Cross, David R.(2010) 'An Attachment Based Approach to Child Custody Evaluation: A Case Study', Journal of Child Custody, 7: 1, 45 — 60

To link to this Article: DOI: 10.1080/15379410903554832

URL: <http://dx.doi.org/10.1080/15379410903554832>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

An Attachment Based Approach to Child Custody Evaluation: A Case Study

KARYN B. PURVIS and L. BROOKS MCKENZIE

Texas Christian University, Fort Worth, Texas

GOTTFRIED KELLERMANN

Neuroscience Incorporated, Osceola, Wisconsin

DAVID R. CROSS

Texas Christian University, Fort Worth, Texas

This child custody consultation, conducted in a rural Texas community, addressed the immediate placement needs of a 5-year-old female, Jamie. The child had been in foster care for 1 year, and her biological mother was seeking reinstatement of full custody. During supervised visitation sessions, Jamie displayed behaviors that are associated with a disorganized attachment style and/or seizure activity, while the mother exhibited behaviors indicative of an insecure attachment style and the inability to be emotionally available to her child. The Adult Attachment Inventory was administered to the mother as a measure of attachment while Jamie was tested for neurotransmitter activity at baseline and immediately after visitation. The results of these objective measures are presented and the implications for their use in child custody cases are discussed.

KEYWORDS *adult attachment interview, attachment, child custody, neurotransmitter, urine assay*

CUSTODY EVALUATION

Forensic evaluation of child custody disputes, whether via divorce or removal by the State, have been described as “one of the most complex,

Address correspondence to L. Brooks McKenzie, Department of Psychology, TCU Box 298920, Fort Worth, TX 76129. E-mail: l.b.mckenzie@tcu.edu

challenging, and sometimes risky professional endeavors that a mental health professional can perform” (Pickar, 2007, p. 31). The role of the custody evaluator is one of forensic scientist rather than that of an empathic therapist or a facilitator of healing. This role of impartial observer may be at times difficult to maintain for those whose primary training has been to assist individuals in crisis; psychologists, therapists, and social workers recruited by small or rural communities may not always have been formally trained in the role of child custody evaluator. The dissonance created by such disparate roles may create a bias for the evaluator and influence recommendations to the court. In a 2004 study, Bow and Quinnell found that a main concern of attorneys and judges in child custody cases was this potential for evaluator bias and the lack of objectivity.

Findings such as the aforementioned may shed light on why the role and methods of child custody evaluators have at times been called into question by those working in the legal and mental health professions. These concerns encompass the lack of research in placement outcomes, the lack of assessment measure reliability, the exact role of the evaluator, and the inadequacy of clearly defined goals of the evaluation. Ultimately, these concerns are not unfounded as many evaluators find themselves in a position for which they are untrained and are employing measures that lack validity and reliability (see Bow, 2006 for a comprehensive review of evaluator qualifications and measurement reliability). A lack of training and experience may account for the concerns voiced by professionals. One study found that the vast majority of child custody evaluators had no graduate school or internship/post-doctoral training in the child custody area: only 18% and 39% receiving training in these settings, respectively (Bow & Quinnell, 2001).

This lack of graduate school or internship/post-doctoral training may account for the use of measures that fail to meet the reliability and validity standards set by the scientific and legal communities. A review of child custody testing procedures employed by psychologists found that many widely used measures failed to meet reliability and validity criteria set by *Daubert* admissibility standards (Bow, Gould, Flens, & Greenhut, 2006). Many of these measures can be thought of, in one way or another, as attempting to capture the mental representation of the attachment bond between caregiver and child. Unfortunately many measures fall short in their psychometric properties and most likely fail to tap this most important developmental concept of attachment. Many child custody investigators are thus facing a very real ethical dilemma when basing recommendation decisions upon opinions and data from measures with questionable psychometric properties (Bow et al.). Additionally, many evaluators, depending upon their training, may not be familiar with attachment theory or the importance of this bond between caregiver and child. Without such an understanding of attachment theory, the

evaluations generated may lack this crucial component, possibly reducing the validity of such evaluations.

ROLE OF ATTACHMENT

Attachment theory (Bowlby, 1969/1982, 1973, 1980) is possibly the most recognized and well-studied concept in Developmental Psychology. This theory posits that instinctual and adaptive programming allows for the formation of bonds between infant and caregiver. This bond is a product of the infant's mental representation of the caregiver. The infant forms this representation via experiential learning through repeated interactions with the caregiver. When a caregiver provides a safe, stable, and nurturing environment, the infant is able to form a healthy mental representation of the caregiver. A safe and responsive environment created by the caregiver is believed to be crucial to the development of a secure attachment (Bowlby 1969/1982; Simpson, 1999). When an infant experiences neglect, inconsistent care, abuse, or frightening behavior from the caregiver, the mental representation developed by the infant will reflect these experiences. It is by these negative representations that insecure attachments are formed.

These early mental representations form the basis for attachment, but attachment theory does allow for revisions to this internal model with respect to important relationship experiences throughout life (Bowlby, 1969/1982, 1973, 1980). Some research of attachment stability has produced inconsistent findings across studies, sparking much debate with regard to stability as a property of attachment (for a good review and analysis, see Fraley, 2002) but change is clearly accounted for by attachment theory. Change can occur at anytime throughout life when this change is initiated by a catalyst of great enough proportion (i.e., a positive or negative life altering event) to redirect the trajectory of the individual. Even with some inconsistency in the findings for stability of attachment, many developmentalists subscribe to the stability of attachment styles/classifications and the enduring effects over a lifetime.

Three primary infant attachment classifications were developed based upon observational data from research from the Strange Situation Procedure (Ainsworth, Blehar, Waters, & Wall, 1978): secure, anxious-ambivalent insecure, and anxious-avoidant insecure. These classifications were based upon observable responses of the infant to the absence and return of a caregiver during the stress-inducing Strange Situation Procedure. Secure children displayed stress (e.g., cried) when the caregiver left the room but were quickly quieted upon the return of the caregiver; these infants soon returned to play and exploration of the environment. Secure infants display a *sense of felt safety*, an understanding that the caregiver will provide care and protection in a consistent manner. This felt safety is a core component in

the development and maintenance of a secure attachment style. Anxious-ambivalent, or *resistant*, infants never appeared to be at ease during the procedure, showing stress when the caregiver left, and were not soothed upon the return of the caregiver; these infants did not display the sense of felt safety that is observed in secure infants. Resistant infants display behaviors that indicate they have not experienced a consistently safe and nurturing environment; instead, they displayed behaviors later linked to intrusive and/or inconsistent care. Anxious-avoidant, or *avoidant*, infants were at first considered the best adjusted due to their lack of observable stress. They showed little outward signs of stress and often did not cry when the caregiver left the room and did not seek comfort when the caregiver returned to the room. Eventually, due to their lack of pro-attachment behaviors with the caregiver, and some studies suggesting higher cortisol levels than secure infants, the absence of crying and proximity-seeking behaviors were later hypothesized to be a learned response of the infant to an emotionally neglectful caregiver; when a child cries and no one comes to help, the child will stop crying and seek comfort from a detached and/or neglectful caregiver.

A fourth infant attachment category, *disorganized*, was later identified when a sizeable number of infants defied classification in terms of the original three classification scheme (Main & Solomon, 1990). Many of these infants were initially classified as secure, but displayed anomalous behaviors that could not be reconciled with this classification. These anomalies included behaviors such as repetitive motions, falling down with no apparent cause, and engaging in almost trance-like states for brief periods of time. Disorganized infant attachment has been conceptualized as the lack of a coherent “organized” behavioral strategy for dealing with the stresses of the Strange Situation Procedure. This “disorganization” can manifest in several ways, from stereotypies (i.e., repetitive movements) to the infant falling down for no apparent reason, and may be related to a helpless state of mind. It is hypothesized that disorganized infants experience their caregivers as either frightening or frightened; the caregiver responds in highly atypical ways to infant signals of discomfort or distress (Madigan et al., 2006). A frightened caregiver causes insecurity for the child, as the infant utilizes cues from the caregiver to assess the safety of a given situation (i.e., social referencing). A frightening caregiver is one who induces fear and/or terror in the infant via abuse or extreme behaviors. The caregiver is both the source of the child’s alarm as well as the child’s haven of safety and this creates an irresolvable paradox of approach-avoidance for the infant (Main and Solomon). A growing body of research has suggested strong links among abnormal parenting, disorganized attachment, and risks for later psychopathologies (Zeanah, Keyes, & Settles, 2003).

Caregiver attachment representations are assessed with the Adult Attachment Inventory (AAI), which was developed in response to the

findings of the Strange Situation Procedure (Main & Goldwyn, 1985; Main, Goldwyn, & Hesse, 2002). Four classifications of adult attachment have been identified: free/autonomous (secure), entangled/preoccupied, dismissing, and unresolved, which are the correlates of the infant secure, resistant, avoidant, and disorganized classifications, respectively. The AAI, initially developed to explore these correlates in caregiver attachment with that of their infants, is now a widely used and validated measure of attachment representation for adults. The AAI is used in a multitude of domains throughout Developmental Psychology and is regarded by many researchers as the gold standard in adult attachment measurement (see Siegel, 1999).

Scoring for the AAI, which is audio-taped and transcribed verbatim, is weighted on the individual's use of communication strategies (e.g., idealization, memory loss for childhood, involving anger, and passivity) which indicate state of mind with regards to attachment. The underlying tenet of the AAI is that the state of mind, not the self-reported relationship, most accurately predicts that individual's ability to be present and available to their children and other attachment-based relationships (classified as Free/Autonomous). The AAI is a manualized assessment tool and scoring of the transcripts can only be performed by individuals who have been certified by passing a multistage training and reliability check. One noted drawback of the AAI is the cost of administration, scoring, and training. Unless an organization has staff certified in the AAI, it can cost from \$400 to \$700 to have the interview transcribed and scored. Training for certification is 2 weeks, with approximately 18 months of reliability checks before certification.

ASSESSMENT OF CHILD FUNCTIONING

One of the most widely used measures of child functioning is the Child Behavior Checklist (CBCL; Achenbach, 1991; Achenbach & Rescorla, 2001). The CBCL is a 113-item questionnaire designed to record a wide range of children's competencies and problems as reported by their parents; there are also teacher and self-report forms. The CBCL is used in a wide variety of settings, from counseling, to empirical research, to custody evaluation in the courts. The CBCL contains—among other information—eight narrowband scores and two broadband scores. The broadband scores represent *Internalizing* and *Externalizing* problems: composite broadband scores are summed items from select narrowband scales concerning *withdrawal*, *somatic complaints* and *depressive/anxious* symptoms, and *delinquent* and *aggressive* behavior, respectively. Additionally, the CBCL is often utilized with regard to more specialized scales such as the Emotionally Reactive Syndrome scale. The information provided by the CBCL

is thought to reflect the child's functioning within a given milieu and is proposed to be predictive of the potential for later behavioral and developmental problems.

In addition to the standard assessment of child functioning that is gleaned from the CBCL, the recent availability of neurotransmitter testing allows new techniques for studying, not just observational or parent-report measures of child behavior, but rather direct measures of neurobiological data. The effects of neurochemical imbalances on mood and behavior are widely and well documented in research (see Appendix A for a review). It is well established that imbalanced neurotransmitter (NT) levels are strongly associated with depression (Delgado & Moreno, 2000), attention disorders (Pliszka, McCracken, & Maas, 1996), and aggression (Spoont, 1992). Deficit and/or excess levels of NT are implicated in attention deficits, anxiety, depression, psychopathology, mood disorders, and numerous other psychological, behavioral, and physical difficulties (see Webster, 2001 for an extensive review).

For instance, deficits in the neurotransmitter serotonin have been associated with a wide variety of physical and psychological difficulties. *Selective serotonin reuptake inhibitors* (SSRIs) are a class of compounds (i.e., medications) typically used as antidepressants in the treatment of depression, anxiety disorders, and some personality disorders. They are also effective and used in treating some physical difficulties as well as some cases of insomnia. The SSRIs increase the extracellular level of serotonin by inhibiting its reuptake into the presynaptic cell, increasing the level of serotonin available to bind to the postsynaptic receptor. Serotonin is a type of messenger within the brain, and SSRIs inhibit the serotonin from being absorbed back into the cells. When it remains outside the cell, it is free for a longer time to communicate signals to other cells within the brain. Therefore, as NT levels are dynamic and change with the current environment (e.g., exposure to a caregiver or a frightening situation), assessment of NT panels during or immediately after interaction with a caregiver may supply information as to the neurobiological functioning of a child with regard to exposure to that caregiver.

Although Serotonin is considered the master regulator of the brain, maintaining optimal levels of other neurotransmitters is also essential to psychological and physiological functioning. Epinephrine, norepinephrine, and dopamine comprise the catecholamines, essentially the stress-response system. In optimal levels epinephrine (also called adrenaline) and norepinephrine (also called noradrenaline) provide physical energy, clear thought, and focus for normal functioning and for quick responses during acute stress. However, in suboptimal or elevated levels they are often associated with behavioral problems such as Attention-Deficit/Hyperactivity Disorder (ADHD). Dopamine in optimal levels is associated with clear thinking, fluid body movement, and a sense of pleasure or contentment,

while suboptimal or elevated levels are associated with thinking disorders, mood disorders, seizures, and aggression.

Gamma-aminobutyric acid (GABA) is the most important inhibitory, or calming, neurotransmitter and in optimal levels is associated with calmness and regulation of other neurotransmitters. However, in suboptimal or elevated levels it is often associated with incoordination and sedation, or with insomnia and anxiety, respectively. Glutamate is considered the most important excitatory neurotransmitter because it affects 70% of the Central Nervous System (CNS). At optimal levels it promotes functions such as memory, synaptic formation, and neural regeneration, while in elevated levels is associated with violence, seizure and/or aggressive behaviors. Finally, PEA (beta-phenylethylamine) is associated with creative thinking and cognitive function, whereas suboptimal or elevated levels are associated with thought disorders such as schizophrenia and psychoses, and childhood disorders such as seizures and Autism.

Advances in the testing of these neurotransmitter levels through non-invasive urinary assays now allows clinicians and other providers an additional test measurement. Although no single test instrument can be used to form opinions related to the welfare of a vulnerable child or adult, neurotransmitter testing has become another means by which to form research-based insights about physiological and psychological functioning. There are numerous sources in the literature that cite maladaptive associations with deficient or excessive levels of various neurotransmitters. Additionally, many testing facilities may maintain educational resources or even provide brief synopses of potential problems that may be associated with suboptimal levels of neurotransmitters (see Appendix A).

In the following case study, we describe how attachment theory, the AAI as a measure of caregiver quality, and a new and emerging field of neurotransmitter analysis assisted in the child custody evaluation of a young girl. Discussion is then presented with regard to implications of clinically objective measures (e.g., neurotransmitter assays and the AAI) that can be applied in child custody cases to reduce the risk of bias and provide additional research-based instruments for determining placement outcomes.

THE CASE OF JAMIE

A developmental psychologist/researcher from a Development Research Lab at a university in Texas was approached to assist with the custody evaluation of a 5-year-old child, Jamie (a pseudonym), in a rural county in the State of Texas. She worked closely with the Child Protective Services (CPS) worker and guardian *ad litem*, observed visitations between the child and her biological mother, and interviewed the biological mother and her boyfriend during the course of this evaluation. When this assessment was conducted,

Jamie had been in foster care for approximately 1 year and was exhibiting anger, aggression, and extreme defiance. Additionally, the biological mother and her live-in boyfriend were petitioning to regain custody of Jamie.

Child's History

Jamie had originally been removed from the home due to child endangerment, risk of physical abuse, a history of CPS involvement, and removal of her siblings on multiple occasions. At the time of removal, the child was reported to have been filthy, covered in insect bites, undersized for her age, and the home smelled heavily of pet feces and urine. A family history of substance abuse, possible mental illness, and extreme domestic violence was reported, though the mother had denied any physical or sexual abuse of the child and none had been documented. Due to the mother's history of substance abuse, prenatal exposure to drugs and alcohol could not be ruled out. Jamie suffered from numerous allergies and was being treated with two separate medications for ADHD and had received diagnoses of Reactive Attachment Disorder (RAD) and Anxiety Disorder. Jamie's IQ presented within the normal range and she had no academic difficulties other than the behavioral problems mentioned earlier.

While in foster care, Jamie had shown some improvement in that she no longer urinated or defecated upon herself when having tantrums, but she continued to be indiscriminately friendly with strangers; the former behavior may be an indicator of a faulty stress response system, while the latter may be a sign of an *insecure attachment style*. She was reported to frequently lie, steal items, manipulate others, and be highly impulsive and volatile. She lacked the ability to appropriately participate in significant peer interactions and establish friendships. Administration of the CBCL yielded borderline clinical scores on both the Internalizing Scale (e.g., anxious, withdrawn) and the Emotionally Reactive Syndrome scale.

Observations

Observations of visitation between Jamie and her biological mother occurred on multiple occasions. During these visits, a few themes began to emerge. Along with the positive behaviors one would expect (e.g., spontaneous affection, engagement in play) more disturbing patterns were noted. The mother was unable to attune to the needs of her daughter during play scenarios, dismissing the child's requests in favor of her own agenda. She often ignored Jamie's requests for specific books or toys and chose what she wanted and conducted the pace of reading or play according to her own schedule. Jamie's mother lacked the ability to modulate her own desires to allow for Jamie's needs to be met when she sought to be nurtured. When Jamie made bids for physical affection, the mother would either hug her

too hard or not seem to notice that she was attempting to engage her physically, often involved in her own thoughts or actions and oblivious to Jamie's needs. When she was engaged by Jamie in physical play or affection, Jamie often froze, stiffened, and pulled away from the contact in response to the roughness of the mother's touch.

Additionally, Jamie displayed a preoccupation with the safety and emotional needs of her toy doll. She frequently made reference to not disturbing the doll and spent time comforting, holding, and cuddling the doll rather than engaging with her mother. The preoccupation with the doll's comfort/distress was mirrored by the presence of some self-soothing mechanisms (e.g., stroking and twisting hair) that she employed.

During the observed interactions between Jamie and her mother, most disturbing were what seemed to be markers of seizure-like activity on Jamie's part. On multiple occasions when she was sitting in her mother's lap or in close physical proximity, she displayed signs of psychogenic seizure activity and/or dissociation: staring into space, looking *over* the book they were reading (not *at* it), fluttering eyelids, and rapidly blinking eyes, all occurring over a sustained period of time. These behaviors in themselves could possibly be attributed to medication reaction or other more benign causalities, but with the family history of domestic violence and neglect, seizure activity could not be discounted; these behaviors only occurred during close physical contact with the mother. This was most troubling in that similar behaviors are exhibited by infants who have been classified as *disorganized/disoriented* and are believed to have been exposed to frightening, frightened, or disoriented communications by the primary caregiver (Siegel, 1999). Frightening caregivers can be so through acts of abuse, explosiveness, or other interactions that cause the caregiver to become the source of the infant's fear; this creates a dichotomy for the infant as they must rely upon this source of fear for protection and safety. A frightened caregiver is alarming to the child as the infant references the caregiver to ascertain the safety of a given milieu. These disorganized infants lack the ability to systematically organize their environment on a neurobiological level, less so even than infants with *organized insecure* attachment classifications (e.g., resistant, avoidant).

Additional Measures

Jamie and her mother were provided urine assay test kits in order to collect samples for analyses of their neurotransmitter levels. Each sample was assayed for epinephrine (Epi), norepinephrine (NE), dopamine (DA), serotonin (5HT), GABA, glutamate, glutamine, PEA, glycine, taurine, and creatinine (see Appendix A for detailed explanation of NT levels). The lab reports provide not only the observed values for each sample but also an optimal range based upon extensive clinical experience and norms.

The NT testing of assays was prompted by the behavioral markers (i.e., staring, fluttering eyelids, and rapid blinking) of possible psychogenic seizure activity displayed by Jamie during visitation with her mother. Jamie supplied three samples total: one sample for baseline and two samples immediately after visitations with her mother. Her mother supplied one urine sample for a baseline measure of her neurobiological functioning. These levels, as assessed by Neuroscience, Inc., can give an objective picture of what is going on within the neurobiological system of the subject at a specific point in time and assist in understanding the neurological difficulties faced by individuals. Neurotransmitter testing is a relatively new area with regard to assessing behavioral and emotional functioning of children, but some recent studies are starting to address this new field (e.g., see Cross, Purvis, Kellermann, Kellermann, & Huisman, 2010; Purvis, Cross, & Sunshine, 2007; Purvis et al., 2006), and certain NT profiles are often associated with many dysfunctions ranging from ADHD to sleeplessness to depression (Neuroscience, Inc., 2006).

In order to gain insight into the parent-child interaction dynamic, the AAI was administered to both the biological mother and her live-in boyfriend and was scored by an independent rater (see Main et al. 2002 for complete guide to scoring and interpretation). The AAI has been extensively studied and is highly correlated with the most well-known measure of infant attachment, the infant Strange Situation Procedure (Ainsworth et al. 1978). The AAI has proven its utility and robustness as the preeminent measure of how infants become attached to their parent, more so than any other traditional measure (Siegel, 1999). While discussing the AAI in terms of communicative interaction, Siegel notes the extremely important and multidimensional effects that caregiver-child interactions have, not only on attachment, but upon memory, learning, and numerous other areas of development over the entire lifespan.

Findings and Results

The results from Jamie's NT tests showed very interesting patterns (see Figure 1) across all three times. Elevated and/or deficient levels of many NT can be seen at each time, but of particular interest in her case are the spikes in PEA and glutamate on two tests and a spike of dopamine on one test—a pattern that has been associated with seizure activity. As can be seen in Figure 1, these spikes in NT correspond to samples obtained post-visitation, indicating the possibility of a dramatically increased stress response by Jamie when in close proximity to her mother. These results, in addition to the observed behaviors (i.e., blank stares, fluttering eyelids, and rapid blinking) during visitations corroborate the possibility of psychogenic seizure activity. The baseline test result for Jamie's mother, though not analyzed across time, also showed abnormal levels of NT and

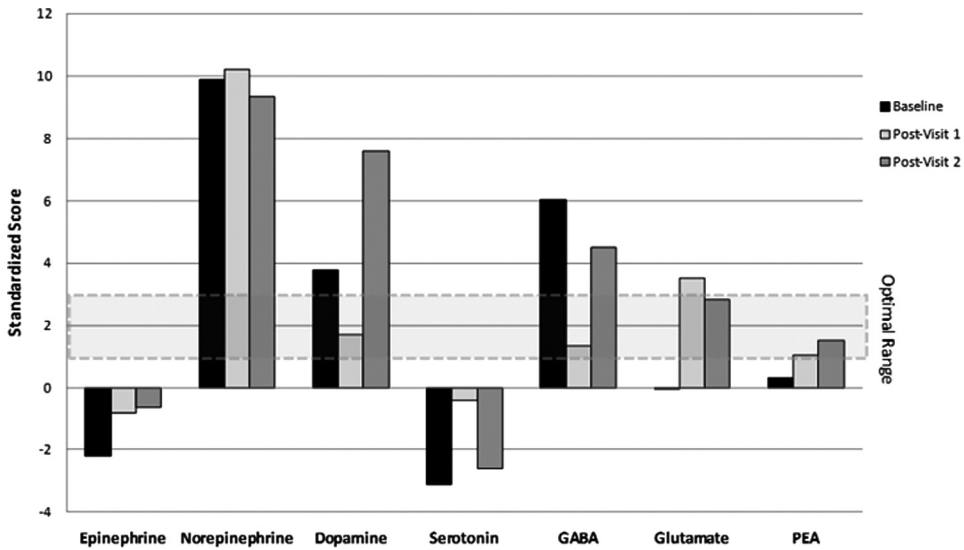


FIGURE 1 Standardized scores of child's neurotransmitter levels at baseline and after two separate visits with biological mother.

were indicative of less than optimal neurobiological functioning (as defined by the optimal ranges provided by Neuroscience, Inc.).

The AAI scores for Jamie's mother and the mother's boyfriend also helped to elucidate the potential interaction styles that were prevalent in the home prior to her placement in foster care. The boyfriend was classified with a *free/autonomous* attachment style with some low levels of detachment, a style that indicates healthy interaction in interpersonal relationships even though he may be slightly removed from attachment related issues. In contrast, the mother was found to be primarily *unresolved* (U/d) with a secondary classification of *dismissing* (Ds), an insecure classification. A classification of U/d is indicative of past loss or trauma that, having never been properly addressed and processed, continues to invade upon an individual's current interpersonal relationships and prohibits healthy interaction. A parental U/d classification is also potentially predictive of a disorganized/disoriented classification for their infant; disorganized infants display behaviors similar to those which prompted the concern over Jamie potentially experiencing psychogenic seizures. Combined with the mother's secondary Ds classification, one in which the individual is unable to evaluate and address attachment-related issues, the U/d classification indicates that the mother is potentially incapable of assessing and meeting Jamie's emotional and psychological needs; U/d classifications are often associated with abuse and were developed to explain the caregiving received by infants who were classified as disorganized. Though there is not a one-to-one correlation between U/d parental attachment and disorganized infant attachment, the

mother's U/d/Ds classification denotes greater risk for the child. Even though the mother's boyfriend was classified as secure, it is unlikely that his influence would be sufficient to counter the detrimental effects of the mother's inability to supply Jamie with basic psycho-emotional needs.

Once all of the data available to the evaluator was considered (i.e., observational, NT tests, and AAI), the evaluator once again interviewed Jamie's mother to inform her of the findings: (a) the spikes in NT tests post-visitation indicated that Jamie exhibited what appeared to be a dramatic stress response to being in physical proximity to her, (b) that her AAI revealed an unresolved status and the potential inability to be present to Jamie, and (c) the observational interpretations of the interactions during visitation. After being presented with these indicators, the mother acknowledged, privately to her attorney, that she had indeed physically abused Jamie. This admission was volunteered by the mother in the absence of any documentation of there ever being any physical abuse perpetrated upon Jamie in the past. She subsequently relinquished her bid to regain custody of the child who remained in the care of her foster family until she was placed with an adoptive family. Due to the mother's cooperation with the Court, she was able to help choose Jamie's adoptive placement.

DISCUSSION

Custody evaluators face weighty challenges in determining placement recommendations for child custody cases. In the current case, the AAI and neurotransmitter testing were added to the more traditional instruments of measurement and observation in order to gain insight about the relationship between the child and caregiver. Jamie, like many other children who have suffered abuse and/or neglect, exhibited numerous aberrant behaviors but had no clear history of abuse. These children are often unable to report any abuse due to lack of cognitive ability, memory, or an unwillingness to expose the family to repercussions. With the lack of evidence in some of these cases, evaluators often must employ subjective interpretations to assess the safety of the child's milieu.

Most court evaluators work diligently to appropriately assess the best interest of the child, especially in emotionally laded cases of abuse and neglect. However, some practitioners and social workers may struggle with biases, believing that placement in foster care is the safest option until evidence of safety at home can be established, while others may lean toward the historically prevalent ideal that a child is always better off at home unless concrete evidence of abuse and neglect is present. In the absence of concrete evidence either for or against the presence of abuse and/or neglect, the courts may rely upon the judgment of these same social workers and mental health professionals who may possess one of the aforementioned biases. The

case presented is an effort to suggest possible new objective additions to the assessment of a child's safety and their cognitive/psycho-emotional functioning.

As noted by Bow et al. (2006), some child custody evaluations are not employing measures that meet *Daubert* standards: (a) the underlying theory or technique has been tested or falsifiable, (b) the underlying theory or technique has been subjected to peer review and publication, (c) the underlying theory or technique has a known or potential error rate and maintenance of standards controlling the technique's operation, and (d) the underlying theory or technique is generally accepted. The AAI is an invaluable tool for gaining an unpolished glimpse into the true attachment abilities of the caregiver. This ability or inability has been empirically linked to a caregiver's capacity to meet the most basic safety and psycho-emotional needs of a child.

While the validity and reliability of the AAI has been well established and meets the aforementioned criteria, the use of NT testing in this area is new, does not currently meet *Daubert* standards, and should not be used as a stand-alone assessment. A growing body of research has evaluated the psychopathological correlates of NT levels in both humans and animals but the case study reported here is a novel application of this technique. Neurotransmitter testing can supply insight into the child's ability to engage and process their world and relationships, adding to the information supplied by other measures that do meet *Daubert* standards. By assessing NT levels in conjunction with other measures, a more complete and objective picture can be constructed of the child's level of functioning and the turmoil they may be experiencing.

The coherence of Jamie's case was improved by employing these objective measures (e.g., AAI and NT testing) in addition to clinical observations. The decisions made with regard to placement were thus grounded in empirical evidence and less influenced by supposition or bias. The use of the AAI gave the evaluator a clear picture of the mother's inability to meet the needs of her child. The NT results provided evidence that the child was experiencing a dramatically increased stress response to interaction with the mother—a response that was not reported by the child and often may not be reported by young and/or vulnerable children. The use of these measures ensured that Jamie was not returned to a home in which she had been enduring unreported physical and emotional abuse. Not only would this have been a detrimental experience for Jamie, but may have potentially altered her developmental pathway across the lifespan.

We believe that the incorporation of objective (NT assays) and empirical (AAI) measures in this custody evaluation is a novel approach to child custody evaluation. Additionally, the added information provided by these measures allowed for a clearer picture of the case. The use of such empirically based tools and approaches, in conjunction with clinical observations, may allow for potentially greater empiricism in the area of child custody evaluation.

REFERENCES

- Achenbach, T. M. (1991). *Manual for the child behavior checklist/4-18 and 1991 profile*. Burlington: University of Vermont, Department of Psychiatry.
- Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASERBA school-age forms & profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation*. Hillsdale, NJ: Erlbaum.
- Bow, J. N. (2006). Review of empirical research on child custody practice. *Journal of Child Custody*, 3(1), 23–50.
- Bow, J. N., Gould, J. W., Flens, J. R., & Greenhut, D. (2006). Testing in child custody evaluations-selection, usage, and daubert admissibility: A survey of psychologists. *Journal of Forensic Psychology Practice*, 6(2), 17–38.
- Bow, J. N., & Quinnett, F. A. (2001). Psychologists' current practices and procedures in child custody evaluations: Five years after APA guidelines. *Professional Psychology: Research and Practice*, 32, 261–268.
- Bow, J. N., & Quinnett, F. A. (2004). Critique of child custody evaluations by the legal profession. *Family Court Review*, 42, 115–127.
- Bowlby, J. (1969/1982). *Attachment and loss: Vol. 1: Attachment*. New York: Basic Books.
- Bowlby, J. (1973). *Attachment and loss: Vol. 2: Separation*. New York: Basic Books.
- Bowlby, J. (1980). *Attachment and loss, Vol. III, Loss: Sadness and depression*. New York: Basic Books.
- Cross, D. R., Purvis, K. B., Kellermann, G., Kellermann, M., & Huisman, H. G. (2010). Neurotransmitter Profiles and Behavior Problems in a Sample of Special Needs Adopted Children. (Manuscript submitted for publication).
- Delgado, P. L., & Moreno, F. A. (2000). Role of norepinephrine in depression. *Journal of Clinical Psychiatry*, 61(Suppl. 1), 5–12.
- Fraley, R. C. (2002). Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, 6(2), 123–151.
- Madigan, S., Bakermans-Kranenburg, M., van Ijzendoorn, M., Moran, G., Pederson, D. R., & Benoit, D. (2006). Unresolved states of mind, anomalous parental behavior and disorganized attachment: A review and meta-analysis of a transmission gap. *Attachment and Human Development*, 8, 89–111.
- Main, M., & Goldwyn, R. (1985). Adult attachment scoring and classification system. Unpublished manuscript, Department of Psychology, University of California, Berkeley.
- Main, M., Goldwyn, R., & Hesse, E. (2002). Adult attachment scoring and classification systems. Unpublished manuscript, Department of Psychology, University of California, Berkeley.
- Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the ainsworth strange situation. In M. T. Greenberg, D. Cicchetti, & M. Cummings (Eds.) *Attachment in the preschool years: Theory, research, and intervention* (pp. 121–160). Chicago: University of Chicago Press.

- Neuroscience, Inc., Institute of Education (2006). *Introduction to the nervous system*. Retrieved January 8, 2008, from <https://www.neurorelief.com>
- Pickar, D. B. (2007). On being a child custody evaluator: Professional and personal challenges, risks, and rewards. *Family Court Review*, 45(1), 103–115.
- Pliszka, S. R., McCracken, J. T., & Maas, J. W. (1996). Catecholamines in attention-deficit hyperactivity disorder: current perspectives. *Journal of the American Academy of Child and Adolescent Psychiatry*, 35(3), 264–272.
- Purvis, K. B., Cross, D. R., & Sunshine, W. L. (2007). *The connected child: Bring hope and healing to your adoptive family*. New York, NY: McGraw-Hill.
- Purvis, K., Kellermann, G., Cross, D., Kellermann, M., Huisman, H., & Pennings, J. (2006). An experimental evaluation of targeted amino acid therapy with at-Risk children. *The Journal of Alternative and Complementary Medicine*, 11, 591–593.
- Siegel, D. J. (1999). *The developing mind*. New York: Guilford.
- Simpson, J. A. (1999). Attachment theory in modern evolutionary perspective. In J. Cassidy & P. R. Shaver (Eds.) *Handbook of attachment: Theory, research, and clinical applications* (pp. 115–140). New York: The Guilford Press.
- Spoont, M. R. (1992). Modulatory role of serotonin in neural information processing: Implications for human psychopathology. *Psychological Bulletin*, 112, 330–350.
- Webster, R. A. (2001). *Neurotransmitters, drugs and brain function*. New York: Wiley.
- Zeanah, C. H., Keyes, A., & Settles, L. (2003). Attachment relationship experiences and childhood psychopathology. *Annals of the New York Academy of Sciences*, 1008, 22–30.

APPENDIX A: NEUROTRANSMITTER PATTERNS AND BEHAVIORAL CORRELATES

Neurotransmitter	Levels	Correlated effects
Epinephrine	<i>At</i> optimal levels	Optimal Levels of Energy, Attention, Focus, Learning, Clear Thought, Appropriate Fight-or-Flight Responses
	<i>Above</i> optimal level	Anxiety, Hyperactivity, Stress, ADD/ADHD
	<i>Below</i> optimal level	Fatigue, Poor Concentration, ADD/ADHD
Norepinephrine	<i>At</i> optimal levels	Optimal Levels of Attention, Appropriate Fight-or-Flight Responses, Emotional Balance, Focus, Activity of Sympathetic Nervous System
	<i>Above</i> optimal level	High Blood Pressure, Insulin Resistance, Stress, Obesity, Aggression, Anxiety, Emotional Lability, Mania, Immune Suppression, ADHD
	<i>Below</i> optimal level	Fibromyalgia, Pain Disorders, Mood Disorders, Lack of Energy, Focus, Memory, Motivation, Difficulty losing weight.

(Continued)

APPENDIX A Continued

Neurotransmitter	Levels	Correlated effects
Dopamine	<i>At</i> optimal levels	Fluid Body Movement, Clear Thinking, Enjoyment, Pleasure, Proper GI function
	<i>Above</i> optimal level	Autism, ADD/ADHD, Compulsions, Thinking Disorders, Mood Disorders, Aggression, Seizure
	<i>Below</i> optimal level	Sleep Disorders, Lack of Motivation or Joy (Avolition or Anhedonia), Parkinson's Disorder
Serotonin	<i>At</i> optimal levels	Sense of Contentment, Sense of Well-being, Positive Affect, Effective Digestion
	<i>Above</i> optimal level	Overuse of Anti-Depressants, Errors in neurotransmitter metabolism, High stress
	<i>Below</i> optimal level	Depression, Insomnia, Stress, GI Problems, Fatigue, PMS, Hypoglycemia, Insulin Resistance, Irritability, Chronic Fatigue
GABA	<i>At</i> optimal levels	Calm Affect, Consolidation of Memory, Regulation of other Neurotransmitters
	<i>Above</i> optimal level	Anxiety, Nervousness, Panic Attacks, Insomnia, Compulsive Eating, ADHD, Low Impulse Control, Seizures
	<i>Below</i> optimal level	Schizophrenia, Epilepsy, Lack of Coordination
PEA	<i>At</i> optimal levels	Creative Thinking, Clear Cognitive Function, Energy, Elevated Mood
	<i>Above</i> optimal level	Mood Disorders, Autism, Seizure, Migraine, Schizophrenia, Sleep Disorders, Headaches, Autism
	<i>Below</i> optimal level	Depression, Fatigue, Lethargy, Poor Concentration, Reduced Motivation, Attention Problems, Cognitive Problems, Developmental Delays,
Glutamate	<i>At</i> optimal levels	Memory, Learning, Synaptic Formation, Neural Regeneration, Neurotransmission in the Brain
	<i>Above</i> optimal level	Aggression, Violence, Seizure, Obsessive Tendencies, Headaches, Low Mood, Developmental Delays, Excitotoxicity
	<i>Below</i> optimal level	Fatigue, Errors of Amino Acid Metabolism

Note: Chart is reproduced with permission from Neuroscience Inc., www.neuroscience.com