

Phenomenology and Nosology of Symptoms Following Interpersonal Trauma Exposure in  
Children: A Review of Literature on Symptoms, Biology and Treatment

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Running Head: Interpersonal Violence in Children

### Abstract

Childhood exposure to interpersonal trauma is extremely prevalent, and anecdotally results in significant psychological distress. Yet, few children exposed to interpersonal trauma meet criteria for PTSD, while carry a multitude of diagnoses. This review article examines the prevalence of a variety of post-violence symptoms in children. Evidence for symptoms of affect and behavior dysregulation, disturbances of consciousness and cognition, alterations in attribution and schema, and interpersonal disruptions is reviewed. Evidence suggests that such symptoms are common in violence-exposed children, and may represent a coherent set of symptoms which are not currently captured by any existing psychiatric diagnosis. Data regarding biological correlates of such symptoms, as well as treatment outcome literature for violence-exposed children, are also reviewed. Recommendations for future research questions are made.

**KEYWORDS:** Maltreatment, violence, abuse, comorbidity, complex trauma

Childhood exposure to interpersonal trauma is extremely common. Worldwide, approximately one third of children are estimated to experience physical abuse; approximately one in four girls and one in five boys experience sexual victimization during childhood (Anda et al., 1999; Felitti et al., 1998; Frank W. Putnam, 2003; UN, 2006). Each year, one million children experience substantiated abuse (*Child Maltreatment Report, 2007*). Conservative estimates place the fiscal cost of childhood abuse and neglect in 2007 at \$103.8 billion (Wang & Holton, 2007), including foster care and residential treatment. Child-abuse related hospitalizations resulted in fatalities at tenfold the rate of non-child abuse hospitalizations, incurred twice the cost of non-abuse related hospitalizations (\$19,266 vs. \$9153 in 1999), and were twice as often paid for through Medicaid (Rovi, Chen, & Johnson, 2004). The National Institute of Justice estimates that the combined costs of mental health care, social services, medical care and police services is \$4379 per incident of childhood abuse. The financial costs of childhood trauma represent an urgent public health need which has been identified as the most significant public health issue in the country (Anda et al., 2006).

Numerous studies have shown that exposure to interpersonal trauma can chronically and pervasively alter social, psychological, cognitive and biological development (Burns et al., 1998; Cook et al., 2005; Spinazzola et al., 2005). No single current psychiatric diagnosis begins to accurately capture the cluster of symptoms that research has shown to commonly occur in children exposed to interpersonal trauma. PTSD may not fully capture the spectrum of children's post-interpersonal trauma symptoms: less than a quarter of children in treatment for trauma-related psychopathology with the National Child Traumatic Stress Network meet criteria for PTSD (Pynoos et al., 2008). In absence of a developmentally sensitive trauma-specific diagnosis

for children, such children are instead diagnosed with an average of 3-8 co-morbid Axis I and II disorders (F.W. Putnam, 2008).

However, evidence has documented specific adverse outcomes associated with childhood interpersonal trauma. Studies on the sequelae of childhood trauma in the context of caregiver abuse or neglect demonstrate chronic and severe co-existing problems with emotion regulation, impulse control, attention and cognition, dissociation, interpersonal relationships, and attributions and schemas. In accord with that symptom set, several investigators and national organizations have called for revisions to the current diagnostic system. In light of the development of the DSM-V, it seems timely to consider the evidence for diagnostic revisions. The goal of this review is to examine the phenomenology of complex trauma symptoms in children and adolescents in order to facilitate consideration of alternative nosologies. In order to explore the possibility of an alternative for child-focused trauma-specific diagnosis, we review evidence for the following premises: 1) childhood interpersonal trauma results in a coherent set of symptoms; 2) these symptoms have specificity and are not accounted for by any existing DSM-IV diagnosis, including PTSD; 3) research on the biological systems disrupted by childhood trauma are consistent with the spectrum of behavioral, affective, cognitive and relational symptom presentation; 4) the application of nonspecific diagnoses to maltreated children reduces the likelihood of positive treatment outcomes, while interventions that comprehensively address the spectrum of problems of children exposed to interpersonal trauma increases the likelihood of positive treatment outcome. Therefore, the goal of this review is to examine the phenomenology of childhood maltreatment in order to examine an approach for possible improvements to the current diagnostic system.

## Review of Published Research

*Does Childhood Interpersonal Trauma Result in a Coherent Set of Symptoms?*

Numerous studies have documented that exposure to interpersonal trauma during childhood is related to increased incidence of affect and impulse dysregulation, alterations in attention and consciousness, disturbances of attribution and schema, and interpersonal difficulties. First, we will review studies documenting disruptions in each of these areas. Studies documenting co-occurring disruption across multiple domains are subsequently reviewed.

*Dysregulation of Affect and Behavior.* A variety of symptoms may represent affective and behavioral dysregulation. Such affective symptoms commonly found in children exposed to interpersonal violence include lability, anhedonia, flat or numbed affect, explosive or sudden anger, and incongruous or inappropriate affect. Behavioral expressions of affect regulation may include withdrawal, self-injury, aggression, oppositional behavior, substance use or other compulsive behavior. Behavioral dysregulation may represent analogs to affective overload as well as attempts to dispel or reduce negative affect. Data from Cicchetti and colleagues (Cicchetti & Rogosch, 2007; Maughan & Cicchetti, 2002; Rogosch & Cicchetti, 2005; Shields & Cicchetti, 2001), as well as other investigators, have been instrumental in exploring affect dysregulation in maltreated children compared with non-maltreated peers. In a series of studies, maltreated children were shown to have increased negative affect, lability, general emotion dysregulation (e.g., emotional reactivity, inability to temper emotional responses) and inappropriate emotional responses (Lewis, Todd, & Honsberger, 2007; Shields & Cicchetti, 1998, 2001). Maltreated children also showed difficulty understanding and expressing emotions in experimental settings (Pollak, Cicchetti, Hornung, & Reed, 2000). Studies have documented that maltreated children are either hyper-sensitive or avoidant in response to negative emotional

stimuli, or are likely to interpret positive emotions as ambiguous (Pine et al., 2005; Pollak et al., 2000). Such data signifies a linkage between internal affect dysregulation and the behavior dysregulation for which maltreated children are notorious. Children with difficulties interpreting emotions, paired with impulsivity, may be at risk for aggressive behavior. Not surprisingly, juvenile justice and delinquent youth have a disproportionately high rate of maltreatment with subsequent aggression, self-injury, substance abuse, sexual risk-taking and oppositional behavior (Hennessey, Ford, Mahoney, Ko, & Siegfried, 2004; Jainchill, Hawke, & Messina, 2005; Kenny, Lennings, & Nelson, 2007). It is of note that dysregulated affect and behavior are not only manifested in florid externalizing symptoms, but also in internalizing symptoms. Less frequently documented symptoms may mimic “freeze” responses and behavioral and affective collapse. Avolition, anhedonia, withdrawal and unresponsive affects are also documented in childhood interpersonal trauma survivors (Atlas & Hiott, 1994; Lumley & Harkness, 2007).

*Disturbances of attention/consciousness.* Disturbances of attention and consciousness following exposure to interpersonal trauma may manifest as dissociation, depersonalization, memory disturbance, inability to concentrate (regardless of whether the task evokes trauma reminders) and disrupted executive functioning (e.g., ability to plan, problem solve). Early studies on cognition following childhood trauma exposure focused on dissociation as a key symptom, leaving little doubt that dissociation is a consequence of early traumatization. More recently, the literature has turned to general inattention as it manifests in trauma. Several researchers have hypothesized that dissociation may mask as inattention in traumatized children (Cromer, Stevens, DePrince, & Pears, 2006; Endo, Sugiyama, & Someya, 2006; Kaplow, Hall, Koenen, Dodge, & Amaya-Jackson, 2008). For example, in a study on the impact of dissociation on cognition, Cromer et al. (2006) examined executive control of 24 5-8 year old children in

foster care. They found that deficits in tasks requiring response inhibition were related to children's dissociation. Similarly, Endo et al. (2006) found that dissociative children appeared to meet criteria for ADHD, but non-maltreated children with ADHD did not appear to meet criteria for dissociative disorders. Kaplow (2008) found that PTSD symptoms did not account for inattentiveness in maltreated children. As yet, the dividing line between dissociation and attention is unclear. However, both are documented sufficiently frequently following childhood interpersonal trauma to merit exploration as key manifestation of post-abuse symptomatology.

Studies examining the relationship between cognitive functioning and childhood trauma exposure have relied upon neuropsychological tests and experimental paradigms (Ayoub et al., 2006; Nolin & Ethier, 2007; Pine et al., 2005; Porter, Lawson, & Bigler, 2005; Rieder & Cicchetti, 1989; Savitz, van der Merwe, Stein, Solms, & Ramesar, 2007). Rieder and Cicchetti (1989) found that compared to non-maltreated children, maltreated children showed poorer executive functioning even in emotionally neutral contexts. Executive functioning worsened for maltreated children in contexts which primed for aggression. Porter and colleagues (2005) found that abused children performed less well on neuropsychological tests that assessed attention and concentration. Pine and colleagues (2005) found that physical abuse severity was associated with attention biases away from threatening stimuli, indicating that emotional overload occurs in response to material only tangentially related to trauma. Nolin and Ethier (2007) examined attention and cognition in physically abused and/or neglected children. Compared to a control group, the abused/neglected group showed disturbances of auditory attention, response set and visual-motor integration. With respect to studies of cognitive capacities, Ayoub and colleagues (2006) found that maltreated children were less able to problem solve as compared to their non-maltreated peers, and that interpersonal trauma severity predicted the complexity of problem-

solving capabilities. Diminished general cognitive capacities have been documented by several other studies. In a sample of 350 children, Savitz (2007) found that sexual abuse severity was associated with poorer memory performance. Taken together, these studies document a clear disruption in the maltreated child's ability to maintain attention and integration of cognitive functions, even when environmental challenges are not explicitly trauma-linked.

*Distortions in attribution.* Children exposed to interpersonal violence appear to have distortions in world view in a way that may set the stage for globalized shame and guilt, a negative cognitive style, distorted locus of control and poor self-efficacy (Bolger, Patterson, & Kupersmidt, 1998; Burack et al., 2006; Daigneault, Hébert, & Tourigny, 2006; Gibb & Abela, 2008; Kim & Cicchetti, 2006; Valentino, Cicchetti, Rogosch, & Toth, 2008). For example, Bolger, Patterson and Kupersmidt (1998) found that abuse severity and chronicity predicted children's self-esteem. Kim et al. (2006) prospectively examined self-esteem in 251 maltreated and non-maltreated children. They found that physical and emotional abuse predicted initial levels of self-esteem and decreases in self-esteem over time. Burack (2006) found that maltreated children had lower self-worth than their peers; similarly, Valentino (2008) found that abused child were more likely to recall false negative information about themselves. Gibb and Abela (2008) found that verbal abuse predicted a negative inferential style in children. Taken together, these data represent a pervasive difficulty with understanding responsibility for one's own behavior and the behavior of others in maltreated children. Though a poor sense of self-worth and self-efficacy are symptoms worthy of clinical attention in and of themselves, they set the stage for problematic interactions with others and worse mental health over time. Self-blame and poor self-worth may decrease the likelihood of engaging in self-protective behavior, which may

in turn increase psychopathology. For example, Daigenault (2006) found that poor self-esteem in maltreated children was a risk factor for adolescent psychopathology.

*Interpersonal Difficulties.* Interpersonal difficulties in children following abuse/neglect may include disrupted attachment styles, difficulties with trust, low interpersonal effectiveness, diminished social skills, inability to understand social interactions, poor perspective-taking abilities, expectations of harm from others and poor boundaries (DePrince, Chu, & Combs, 2008; Elliott, Cunningham, Linder, Colangelo, & Gross, 2005; Kernhof, Kaufhold, & Grabhorn, 2008; Kim & Cicchetti, 2004; Perlman, Kalish, & Pollak, 2008). These data have been drawn from both self-report studies and experimental paradigms. Given the central role that attachment appears to play in developing socio-emotional skills, it stands to reason that children who have experienced direct assaults to their caregiving system would experience further disruptions in social development. Other studies have documented social interaction difficulties in maltreated children, such as interpersonal conflict and poor social skills. In a sample drawn from the National Youth Survey, Elliot (2005) found that exposure to interpersonal trauma predicted social isolation in children. Experimental paradigms have documented cognitive styles and schemas which may influence social behavior in maltreated children. Perlman (2008) found that maltreated children attributed sadness to both positive and negative social situations, which may disrupt their abilities to successfully engage with others. DePrince (2008) found that maltreated children showed errors in judgment for interpersonal reasoning situations, which may lead to inappropriate or odd social behavior and social rejection. Burack (2006) found that maltreated children had more difficulties with social perspective-taking, which may generate a defensive interpersonal style that leads to conflictual relationships.

*Co-occurring symptoms following childhood interpersonal trauma.*

Because some symptoms appear to be common among maltreated children, it seems pertinent to inquire whether these symptoms tend to co-occur or represent independent phenomena. A number of studies have examined the appearance of a broad array of symptoms within a single sample (Bailey, Moran, & Pederson, 2007; Bradley, 1986; J. T. F. Lau, Liu, Cheung, Yu, & Wong, 1999; Spinazzola et al., 2005; Teisl & Cicchetti, 2008). In an early study on maltreatment, Bradley (1986) found decreased cognitive functioning, poor social competence and oppositional behavior in maltreated children. Lau, Liu, Cheung, Yu and Wong (1999) examined physical abuse outcomes in 3355 adolescents, and found an increased incidence of poor physical health, poor interpersonal relationships, and increased impulsive risk-taking behavior. Spinazzola et al. (2005) found that affect dysregulation, inattention, poor self-image and poor impulse control were all prevalent in over half of their sample, indicating that these symptoms co-occur. Teisl and Cicchetti (2008) examined the impact of physical abuse on domains of functioning on children. Children with histories of interpersonal trauma showed difficulties with cognitive processing, affect regulation, aggressive cue interpretation compared to non-maltreated peers. Bailey (2007) found difficulties with self-regulation, interpersonal relations, attributions and cognition in a sample of 62 at-risk youth. In particular, the maltreated group showed an increased incidence of self-harm, interpersonal conflict, identity confusion and dissociation. Other researchers have documented similar symptom clusters in maltreated children (Briscoe-Smith & Hinshaw, 2006; Kisiel & Lyons, 2001; Tarren-Sweeney, 2008; Tsuboi, 2005). Furthermore, outcomes of childhood interpersonal trauma have been the subject of several meta-analytic investigations (Evans, Davies, & DiLillo, 2008; Kitzmann, Gaylord, Holt, & Kenny, 2003). Evans, Davies and DeLillo (2008) meta-analyzed the effects of domestic trauma on

children across 60 studies and found a moderate effect size on both internalizing and externalizing symptoms. Kitzman, Gaylord, Holt and Kenny (2003) found that witnessing domestic trauma was significantly related to affective disturbances, negative world-views, externalizing behavior and aggression, and social problems.

As with PTSD, several studies have documented that the symptom clusters in complex trauma are inter-related to one another (Praver, DiGiuseppe, Pelcovitz, Mandel, & Gaines, 2000; Rogosch & Cicchetti, 2005; Shapiro, Leifer, Martone, & Kassem, 1992; Shields & Cicchetti, 1998). Shapiro (1992) found that cognitive disturbance, interpersonal disruptions and oppositional behavior were inter-related in maltreated children. A study by Shields and Cicchetti (1998) examined the interplay of aggression, attention and emotion regulation in 228 children with and without interpersonal trauma histories. Maltreated children were more likely to show aggressive behaviors, attention deficits, dissociation, emotion dysregulation and lability, and socially inappropriate behavior. Attention and emotion dysregulation placed maltreated children at increased risk for aggressive behavior. Praver (2000) interviewed 208 children categorized by intrafamilial trauma, extrafamilial trauma, combined trauma or no trauma and found that children with intrafamilial and combined trauma had significantly more complex trauma symptoms across all proposed diagnostic domains. The symptoms showed strong internal consistency amongst symptoms in maltreated children. Rogosch (2005) demonstrated that symptoms of affect and behavior dysregulation, attention/consciousness, attributions and schemas and interpersonal conflict showed were strongly inter-correlated amongst maltreated children. In particular, maltreated children were likely to present with the following inter-related symptoms: aggression, lability, negative affect, self-injury, inattention, decreased self-worth, and high interpersonal conflict.

*Biological Correlates of Symptoms Commonly Occuring in Maltreated Children*

To date, several studies have examined CNS abnormalities in maltreated children and adults maltreated as children (Bevans, Cerbone, & Overstreet, 2008; Curtis & Cicchetti, 2007; De Bellis et al., 2002; Ito, Teicher, Glod, & Ackerman, 1998; Ito, Teicher, Glod, & Harper, 1993; King, Mandansky, King, Fletcher, & Brewer, 2001; Linares et al., 2008; Taylor, Eisenberger, Saxbe, Lehman, & Lieberman, 2006; Tupler & De Bellis, 2006; Weems & Carrion, 2007). Tupler and De Bellis (2006) found that interpersonal trauma was associated with increased hippocampal volume in PTSD, and that increased hippocampal volume was in turn associated with age of trauma and externalizing behaviors. Cortisol may be specifically implicated in hippocampal atrophy. Weems and Carrion (2007) found that cortisol elevations related to childhood interpersonal trauma predicted hippocampal volume reduction over time. De Bellis et al. (2002) found decreased volume in the corpus callosum, prefrontal cortices, and temporal lobe, and increased volume in the superior temporal gyrus, in maltreated children with PTSD as opposed to those without PTSD. Age of trauma and duration of abuse were significantly positively correlated with brain volumes.

In studies which did not focus on specific diagnoses, Ito (1993) found that abused children had left hemisphere EEG abnormalities in anterior, temporal and parietal areas. Ito et al. (1998) found that abused children had increased left hemisphere coherence compared to controls. Taylor et al. (2006) found that children who experienced harsh or cold parenting showed decreased amygdala activation during an emotion observation task and a strong relationship between amygdala activation and right ventrolateral prefrontal cortical areas during an emotion labeling task, which indicates poor inhibition of the amygdala. Curtis and Cicchetti (2007) found that maltreated children categorized as nonresilient had decreased left hemisphere activation

when compared to resilient maltreated children, and decreased left parietal activity compared to nonmaltreated children. EEG asymmetries were associated with observed emotion regulation. Similarly, neuroendocrine changes have been documented in the aftermath of childhood interpersonal trauma. Bevans et al. (2008) found that exposure to childhood trauma was related to alterations in diurnal cortisol variation. Young children who experienced abuse had lower cortisol than their non-abused peers (King et al, 2001; Linares et al., 2008). Though biological findings have not been consistent, they do indicate a possible broad array of disruptions in the development neuroanatomical structures following maltreatment.

Several studies have examined the relationship symptoms to biological changes in maltreated children (Cicchetti & Rogosch, 2001, 2007; Hart, Gunnar, & Cicchetti, 1995; Murray-Close, Han, Cicchetti, Crick, & Rogosch, 2008). Murray-Close et al. (2008) found that maltreated experiences moderated a relationship between blunted cortisol diurnation and aggression in children. Cicchetti and Rogosch (2007) found that lower morning cortisol was related to decreased resilience and increased affect dysregulation in maltreated children. Hart, Gunnar and Cicchetti (1995) found that maltreated children had blunted cortisol reactivity, which was in turn related to lower social competency. Cicchetti and Rogosch (2001) found that maltreated children with internalizing problems and co-existing internalizing and externalizing problems had elevated cortisol compared to non-maltreated children.

Studies of other forms of psychopathology following interpersonal trauma have found that neurobiological changes may be more specific to childhood abuse than to any particular form of psychopathology (De Bellis & Kuchibhatla, 2006). In a sample of children with PTSD, De Bellis and Kuchibhatla (2006) found that maltreated children had decreased cerebellar

volumes, which were also associated with earlier and more chronic trauma. Findings held when contrasting the maltreated group to a non-maltreated group with GAD.

*Treatment issues in complex trauma exposure*

The data on symptoms suggests that a cluster of symptoms commonly co-occur in maltreated children which do not appear to be accounted for by any existing diagnosis. An examination of the treatment literature may help to delineate whether these symptoms are coherent. If they are, one might expect that the application of nonspecific diagnoses to maltreated children leads to differential treatment outcome, while the use of trauma-focused interventions with maltreated children given nonspecific diagnoses improves treatment outcome.

*Treatment resistance in traumatized children given diagnoses unrelated to trauma exposure.* Because trauma may often be overlooked in children, it is important to examine how trauma exposure may impact treatment response in “non-trauma” diagnoses. Several studies have investigated this topic (J. D. Ford, Steinberg, Moffit, & Zhang, 2007; Grella & Joshi, 2003; Jacobs et al., 2008; Jaycox, Ebener, Damesek, & Becker, 2004; A. S. Lau & Weisz, 2003; Pavuluri et al., 2006). Pavuluri (2006) examined responses to lithium treatment in a sample of youth diagnosed with bipolar disorder. History of physical or sexual abuse predicted treatment nonresponse. In a sample of children referred for intervention, Lau et al. (2003) found that compared to non-maltreated children, children with histories of interpersonal trauma were more likely to prematurely terminate therapy and show continued externalizing behaviors two years after termination. Jacobs et al. (2008) found that in a sample of children participating in a school-based intervention, nonresponders more likely had experienced sexual abuse and had comorbid diagnoses. Grella and Joshi (2003) found that maltreated adolescents fared poorer than their nonmaltreated peers in substance abuse treatment which was not trauma-focused. Ford et al.

(2007) report that DTD symptoms predicted poor substance abuse treatment outcomes in adults. Similarly, Jaycox et al. (2004) found that compared to adolescents with PTSD and adolescents with no trauma exposure, trauma-exposed adolescents who were not diagnosed with PTSD were more likely to prematurely terminate substance abuse treatment. One possible explanation for this finding is that adolescents with PTSD had interventions which emphasized the role of trauma in substance abuse. In the absence of PTSD, the significance of trauma exposure may not have been factored in to treatment processes.

*Treatment outcomes of maltreated children when using trauma-informed interventions.*

Even when not diagnosed with PTSD, trauma-exposed children may fare well when given trauma-informed care (Becker-Weidman, 2006; Copping, Warling, Benner, & Woodside, 2001; Dozier et al., 2006; Greenwald, 2002; Timmer, Urquiza, & Zebell, 2006). Copping et al. (2001) found that amongst children who experienced childhood interpersonal trauma, an intervention which targeted trauma reactions and attachment had improvements in DTD symptoms. Soberman, Greenwald and Rule (2002) found symptom improvement using trauma-focused EMDR in a sample of boys with conduct disorder. The group with standard care showed only minimal improvement. In an examination of interventions for Reactive Attachment Disorder, Becker-Weidman (2006) found that their entire sample (N = 64) had histories of severe interpersonal trauma, but that symptoms of DTD (attention, social, behavioral, cognitive and internalizing problems) improved during an intervention which focused on improving attachment through dyadic therapy with caregivers. Timmer, Urquiza and Zebell (2006) found that amongst maltreated children, an attachment-focused treatment (Parent-Child Interaction Therapy) reduced behavioral problems. Dozier et al. (2006) found that an intervention which targeted attachment

and self-regulation in maltreated toddlers showed improved cortisol and behavior compared to maltreated children in a control intervention condition.

*Do complex trauma symptoms in children have specificity not accounted for by any existing DSM-IV diagnosis?*

Though multiple psychiatric diagnoses have overlapping symptoms (e.g., anxiety and depression may both feature psychomotor agitation), each diagnosis generally manifests with a unique constellation of symptoms. So, too, is the case with the sequelae of childhood interpersonal trauma. Though a childhood interpersonal trauma diagnosis may share overlap with existing diagnoses, its conceptual specificity distinguishes it from existing diagnoses. The National Child Traumatic Stress Network has proposed a child-specific interpersonal trauma diagnosis, referred to as Developmental Trauma Disorder (DTD), consistent with the symptoms reviewed here. Developmental Trauma Disorder includes symptoms of affect and behavioral dysregulation, distorted schemas of self and others, disrupted interpersonal relationships, and disturbances of cognition and consciousness. Elaboration follows of how a childhood interpersonal trauma diagnosis is distinct from conditions which occur frequently following trauma.

The disorder which shares the most overlap with DTD is PTSD. DTD accounts for the associated features of PTSD, which include dissociation and survivor guilt. Hyperarousal in PTSD overlaps with affect/impulse dysregulation in DTD; however, PTSD-related hyperarousal does not include affect dysregulation around shame and general affect. Furthermore, hyperarousal in PTSD differs from impulsivity in DTD in that risky or hypervigilant behaviors do not function as a means of self-soothing as they are hypothesized to in DTD. Though people with PTSD may experience interpersonal difficulties as a result of their PTSD symptoms, a long-

standing insecure attachment style and distorted perception of others as conceptualized in DTD does not characterize PTSD.

Given that a complex trauma diagnosis features alterations in attention, consciousness and cognition as key symptoms, ADHD and DTD share some overlap. ADHD and DTD are both similar in that chronic dissociation found in DTD shares features with inattention in ADHD; risk-taking and dysregulation in DTD shares similarity with hyperactivity and impulsivity in ADHD. However, these two syndromes differ in the nuances of these shared symptoms. For example, though a dissociative child may have difficulty attending to a classroom setting, the sense of depersonalization, derealization, and “freeze” behavior which characterize dissociation differ from the general deficit in focus and attention shifting of a child with ADHD. Indeed, trauma-exposed children are distinguished from ADHD-diagnosed children without trauma exposure on the basis of dissociation (Reyes-Perez, Martinez-Taboas, & Ledesma-Amador, 2005). While a child with ADHD may engage in risky behavior through dysregulated impulses, a child with DTD may engage in impulsive or risky behavior due to affective instability and attempts to self-soothe. Outside of these overlapping symptoms, ADHD and DTD diverge in several significant ways. ADHD is not characterized by affective, interpersonal or somatic dysregulation which characterizes DTD. Inattention and hyperactivity in ADHD are not thought to result from emotional distress as they may with DTD. Though self-esteem may be impacted as a result of ADHD, poor self-schema, identity development and negative expectations of caregivers are not core features of ADHD as they are with DTD. Furthermore, children with DTD may alter drastically, appearing impulsive and hyperaroused in one minute, and withdrawn and flat in another.

Nonetheless, diagnoses of ADHD are more frequent in survivors of interpersonal trauma (Briscoe-Smith & Hinshaw, 2006; Davids & Gastpar, 2005; Endo et al., 2006; Husain, Allwood, & Bell, 2008; Mulsow, O'Neal, & Murry, 2001; Weinstein, Staffelbach, & Biaggio, 2000). Given the prevalence of ADHD in environments where community trauma is common (T. Ford, Goodman, & Meltzer, 2004; Heiervang et al., 2007; Luna, 2006; Perry-Burney, Logan, Denby, & Gibson, 2007), the dysregulated affective and behavioral patterns found in ADHD following interpersonal trauma may be better conceptualized as one facet of an adaptation to extreme stress. This distinction may be particularly relevant when inattention appears to arise from dissociation and impulsivity or hyperactivity arise from affective dysregulation.

The impulsivity, affect dysregulation and breaks with reality found in Bipolar Disorder share some overlap with DTD. However, the impulsivity associated with Bipolar Disorder does not share the tension-reduction goal of impulsive risk-taking in DTD. The affect dysregulation associated with even rapid-cycling Bipolar Disorder occurs on a much slower time course than the lability and moment-to-moment state shifts expected in DTD. Similar to depression, the psychotic symptoms associated with Bipolar Disorder are mood-congruent, and not characterized by the fragmentation, depersonalization and derealization associated with dissociative states. While manic states are characterized by grandiosity, DTD is characterized by a sense of the self as damaged or defective. DTD is not characterized by increases in goal-directed behavior or decreased need for sleep (though other sleep disturbance may be present) found in Bipolar Disorder. Finally, DTD is characterized by impaired interpersonal functioning and altered expectations of others, which are not expected in Bipolar Disorder.

### Conclusions and Recommendations

The available evidence suggests that a child-specific interpersonal trauma diagnosis may represent a coherent set of symptoms. A diagnosis based upon exposure to developmentally adverse interpersonal trauma, maltreatment and neglect during childhood has the potential to alert clinicians to the influential role of childhood trauma in psychopathology. These symptoms are distinct from PTSD and show significant biological correlates. One possible version of a child-specific post-trauma diagnosis may include 1) exposure to childhood interpersonal trauma, including emotional abuse, neglect and other disruptions in caregiving and 2) symptoms in the areas of a) affect and behavior regulation; b) attention, cognition and consciousness; c) attribution and schema; and d) interpersonal relationships.

With respect to biological data, Childhood interpersonal trauma has documented associations with structural and functional abnormalities in the prefrontal cortex, corpus callosum, amygdala, hippocampus, temporal lobe and cerebellar vermis. Taken together, these areas represent key pathways for the regulation of consciousness, affect, impulse, sense of self, and physical awareness. Further maladaptive reactions have been documented in stress hormone reactivity, which may in turn exacerbate susceptibility to the physiological manifestation of emotional distress.

The treatment outcome literature lends additional credence to both the specificity and necessity of a complex trauma diagnosis. Numerous studies have documented that treatment resistance versus success in diagnoses such as conduct disorder, bipolar disorder and ADHD can be attributed to childhood interpersonal trauma. Furthermore, trauma-focused intervention is often beneficial to the subset of children whose diagnoses are not trauma-specific but whose histories feature complex trauma. In contrast, therapies which focus on addressing the core disturbances of affect dysregulation, attention and consciousness, interpersonal skills and

attributions and schemas show significant treatment gains in trauma survivors. These findings suggest that other diagnoses may be serving as “stand-ins” for a child trauma diagnosis to the detriment of traumatized children to whom such diagnoses are applied.

An appropriate diagnosis is imperative for children exposed to interpersonal trauma.

Much more than a scientific taxon, psychiatric diagnoses guide the development of interventions, insurance reimbursement and scientific inquiry. According to the DSM-IV, a mental disorder is

“conceptualized as a clinically significant behavior or psychological syndrome or pattern that occurs in an individual and is associated with present distress or disability or with a significantly increased risk of suffering death, pain, disability or an important loss of freedom...Whatever its original cause, it must currently be considered a manifestation of a behavioral, psychological or biological dysfunction in the individual” (DSM-IV, xxxi).

Problems arising from abuse and neglect have been documented using a variety of research methodologies: retrospectively and prospectively; with children and adults abused as children; across economic, cultural and racial strata; in large national samples; and by multiple independent investigators using a variety of psychometric, experimental and biological assessment methods. The continued practice of applying multiple distinct co-morbid diagnoses to traumatized children has grave consequences: it defies parsimony, obscures etiological clarity, and runs the danger of relegating trauma-informed treatment and intervention to a small aspect of the child’s psychopathology rather than promoting a comprehensive treatment approach. In order to delineate a new diagnosis, more data is necessary. In particular, it is necessary to determine 1) whether these symptoms are particular to ongoing interpersonal trauma, or might also apply to ongoing non-interpersonal trauma, such as chronic life-threatening illness; 2) whether disturbances in attachment that are nonviolent, such as death of a caregiver, result in similar symptoms; 3) how such symptoms might evolve over developmental trajectories; and 4) the specific details of which symptoms represent the most coherent diagnosis to minimize both false

positive and false negative diagnoses. Taken together, the literature represents a clear need for further investigation into the merits of a child-specific trauma diagnosis.

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