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Disturbances of Attachment and Parental Psychopathology in Early Childhood

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Synopsis

As the field of attachment has expanded over the past four decades, the perturbations in the relational context which give rise to disturbances of attachment are increasingly, though by no means conclusively, understood. In Part I, this article reviews the historical and current state of research regarding normative attachment classification, the diagnosis of Reactive Attachment Disorder, and the proposed categories of Secure Base Distortions and Disrupted Attachment Disorder. In Part II, the article explores the role of parental psychopathology and the manner in which disturbed caregiver self-regulation leads to disturbances in the mutual regulation between caregiver and infant. The question of the relationship between particular types of maternal pathology and particular forms of attachment disturbance is examined through recent research on the association between maternal PTSD, Atypical Maternal Behavior, and child scores on the Disturbances of Attachment Interview (DAI). The authors present original research findings to support that the presence and severity of maternal violence-related PTSD were significantly associated with secure base distortion in a community pediatrics sample of 76 mothers and preschool-age children. Clinical implications and recommendations for treatment of attachment disturbances conclude the article.

Keywords

Disturbances of Attachment; Secure Base Distortions; Reactive Attachment Disorder; Parental PTSD; Parental Psychopathology; Mutual Regulation

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PART I: Perspectives on the Child and Relational Psychopathology

Origins of Attachment Theory

The study of “Attachment” now spans four decades and multiple domains; theory, research, psycho-biology, and clinical application. This ever expanding field of study owes its inception to John Bowlby. Synthesizing object-relational and ethological perspectives, Bowlby theorized that the evolutionary interests of the species are best served by a bio-behavioural caregiver-infant system that ensures the safety of the vulnerable human infant.^{1, 2} To that end, the human infant is biologically predisposed to engage in proximity seeking behaviours toward the caregiver in times of distress. In this conceptualization, Bowlby radically departed from the Freudian paradigm of primary drives (e.g. the pleasure principle) that operate independently of the object. By contrast, attachment theory was based upon “a new type of instinct theory” (p. 17),¹ one that viewed the formation of relational bonds as a primary human instinct. Attachment theory additionally departed from traditional psychoanalytic models in its attention to the direct observation of caregiver-infant interaction rather than adult retrospection and fantasy concerning childhood experience (e.g. the “seduction theory”).

Bowlby proposed that infant motivation operates according to four principle systems; attachment, exploration, affiliation, and fear/wariness.³ The attachment and exploratory systems are understood to operate inversely in order to maintain a homeostatic goal of felt security. Proximity seeking attachment behaviours are activated, and exploratory behaviours deactivated, by fear or distress. Upon the re-establishment of felt-security, attachment behaviours deactivate and exploratory behaviours can once again emerge. Bowlby suggested that based on the caregiver’s actual history of providing comfort and safety, the infant constructs an Internal Working Model (IWM) of self and attachment figure that will subsequently guide the infant’s behaviour and expectations of attachment figures, most significantly in times of stress. This internal mental representation, termed “object constancy” by Mahler, Pine, and Bergman,⁴ is theorized to remain stable over time, but may be susceptible to alteration later in life through ameliorative attachment relationships.^{5, 6}

Observable attachment behaviours change phenotypically as development proceeds over the first years of life. In early infancy, behaviours such as crying, clinging, and smiling are mechanisms by which the infant seeks proximity. The emergence of stranger wariness and separation protest, beginning at approximately 7-9 months of age and consolidating by the end of the first year of life, signals the establishment of the attachment system with its discrimination of, and preference for, the primary attachment figure. Following the attainment of mobility beginning at approximately 12 months, attachment behaviours are reflected in the toddler’s balancing of proximity seeking and exploration, returning to the caregiver as a “secure base” or “safe haven” when external or internal factors become stressful or frightening.¹

The core component of attachment theory, that the quality of infant attachment is directly related to the quality of experienced caregiving (the provision of felt-security), was operationalized by Mary Ainsworth and colleagues in a laboratory paradigm known as the Strange Situation Procedure (SSP).⁷ Observing 12 month old infants in a structured series of 8 standardized episodes which included separations and reunions between caregiver and infant, Ainsworth coded and categorized infant behavioural adaptations in response to the reintroduction of the attachment figure during the reunion episode. Ainsworth delineated three attachment classifications: 1) Secure (B) in which the infant actively seeks and effectively derives felt security from proximity to and interaction with the attachment figure, 2) Insecure-Avoidant (A) in which the infant “conspicuously” avoids proximity seeking or interaction with the attachment figure, and 3) Insecure-Resistant (Ambivalent) (C) in which the infant simultaneously seeks and resists proximity and interaction with the attachment figure.

Attachment Organization and Disorganization

The secure and insecure attachment classifications first identified by Ainsworth represent behavioural strategies related to the internal working model (internal representation) the infant holds of the availability, reliability, and responsiveness of the attachment figure in times of distress. Whether optimal or not, the B, A, and C strategies are adaptive and, indeed, organized. Over repeated interactions with the caregiver, the infant has learned what they may reliably expect in terms of comfort and security and has modified their attachment behaviour accordingly. For example, the avoidant infant appears to have learned that very little or nothing will be offered by the caregiver and adaptively suppresses overt proximity seeking behaviours.

As attachment research progressed, investigators observed that a sub-set of infants exhibited reunion behaviours that did not fit into any of the extant categories.^{8, 9} Main and Solomon^{10, 11} added the classification “Disorganized-Disoriented” (sub-type D) for these children and described their behaviour as odd, chaotic, interrupted, mistimed, and incoherent with respect to stress and separation during reunion with their parents. In addition to discrete behaviours characteristic of the other sub-types, upon reunion such infants exhibited fearful responses, contradictory but simultaneous movements (e.g. approaching a parent while moving in circles), or freezing in place with a ‘trance-like’ expression. Main and Hesse^{12, 13} have suggested that the source of this behavioural presentation may be caregivers who display frightening and/or frightened behaviour, creating an impossible bind for the infant. Proximity seeking and avoidance/flight are simultaneously activated since the caregiver is the source of both fear and comfort. Main¹⁴ has termed this bind “fright without solution” such that any and all strategies are rendered ineffective, and the attachment behavioural system is effectively derailed.

Correlates of Attachment

In her original study of non-clinical middle-class infants, Ainsworth found attachment distributions of 66% secure (B) and 34% insecure (A & C). Early meta-analytic reviews of infant attachment studies using the SSP showed distributions of 62% secure and 38% insecure in U.S. samples,¹⁵ and 65% secure and 35% insecure internationally.¹⁶ Subsequent reviews continued to find only up to 40% insecure attachment in general population samples.¹⁷ However, the rate of insecure attachment was found to rise dramatically in samples of maltreated infants with insecurity ranging from 70%-100%.¹⁸ The development and utilization of the Type D classification confirmed a robust association between maltreatment and disorganized attachment, with disorganized attachment rates as high as 82% found in maltreated infant samples.¹⁹

Security of attachment has been found to predict personal and interpersonal competence in early childhood²⁰⁻²² and middle childhood.^{23, 24} Insecure attachment has been generally associated with factors such as increased dependence, impaired social competence, and decreased ego resilience in later childhood.^{24, 25} Given the association between maltreatment and disorganized attachment, however, the well documented negative sequelae of maltreatment alone become of particular interest. These impairments span the domains of development, self-perception, social interaction, internalizing, and externalizing behaviours.²⁶⁻³²

The research findings that link (a) insecure attachment, particularly disorganized-disoriented attachment, with maltreated populations and (b) maltreatment with negative outcomes, raise the question of the relationship between attachment and early childhood psychopathology. At such a juncture, it is critical to remember that the construct of attachment belongs to the field of developmental psychology. Classifications of secure and insecure attachment, including disorganized-disoriented, were conceived as descriptive, *not* diagnostic, categories.³³ Zeanah and Smyke³⁴ warn against the tendency to relate attachment classifications directly to

pathology, “there is no clear association between classifications of attachment and specific psychiatric sequelae” (p.221). Attachment classifications are better thought of as risk and protective factors for concurrent or later pathological disorders.³⁵ Indeed, strong evidence continues to mount for the risk conferring nature of the disorganized classification. Investigators have documented associations between disorganized attachment and internalizing, externalizing, anxiety, and dissociative disorders.³⁶⁻⁴²

Disorders of Attachment – Historical Background

In contrast to the plethora of research on correlates of attachment classifications, until very recently scant research existed regarding actual psychiatric “disorders of attachment.” Early descriptive studies by Bowlby,⁴³ Robertson,⁴⁴ and Spitz⁴⁵ indicated that “extreme” or “pathogenic” caregiving environments, such as found in cases of maltreatment or institutional settings, were necessary precipitants of attachment disturbances. Yet the problem with diagnosis of infant psychopathology is unusually complicated by several factors specific to infancy and early childhood. Infants and young children are inherently changing entities, their range of behaviours are limited relative to developmental age, they cannot report on their experiences, observers often know them only in certain contexts, infant behaviour exists within a relational context, and attachment is a normative developmental pathway.⁴⁶ Thus progress in delineating and validating criteria for disorders of attachment has been a “slow” and “limited” process.³³

The first formal inclusion of criteria for a disorder of attachment occurred with the publication of the *Diagnostic and Statistical Manual of Mental Disorders III* (DSM-III).⁴⁷ Criteria were based on the research of Tizard & Rees⁴⁸ on attachment abnormalities in 4 year olds raised since birth in residential nurseries in England. Tizard and Rees had found that a majority of the children exhibited either withdrawn/unresponsive behaviours *or* indiscriminate/attention seeking behaviours. The original DSM-III version also included failure to thrive, lack of social responsivity, and onset prior to 8 months of age as criteria. In the DSM-III-R edition,⁴⁹ failure to thrive was removed and the age of onset expanded to within the first 5 years of life. Additionally two sub-types were formalized; Inhibited and Disinhibited.

The nomenclature, definition, and criteria for these sub-types were maintained through DSM-IV⁵⁰ and ICD-10,⁵¹ with slight variations existing between DSM-IV and ICD-10 regarding social relatedness across contexts. Importantly, both DSM-IV and ICD-10 continued to recognize the disorder as a reaction to pathogenic caregiving, and excluded children meeting criteria for Pervasive Developmental Disorder (PDD).³³ They differed in that DSM-IV grouped both subtypes and a mixed sub-type under RAD whereas in ICD-10, RAD referred to the inhibited subtype only, with the disinhibited sub-type termed “Disinhibited Attachment Disorder”. DSM-IV-TR⁵² maintained the centrality of abnormal social relatedness across contexts - that is not accounted for by PDD or developmental delay - and the etiology of pathogenic care.

Boris et al.⁵³ noted that the development and revision of these criteria were carried out independent of substantiating research since no published data existed on the topic between 1980 and 1994. In a critique concerning the state of attachment disorder diagnoses at the time, Zeanah and colleagues⁵⁴ suggested that the DSM-IV’s characterization of RAD as a disturbance of *nonattachment* did not properly take into account children who have observable, focused attachment relationships, albeit ones that are highly disturbed. Moreover, in more recent work with a Romanian orphanage sample, Zeanah, Smyke, and colleagues⁵⁵ have pointed out that traditional measures of attachment behaviour such as the Strange Situation Procedure, among other measures, are ill-suited to assess relational behaviour in children who have never discriminated a preferred attachment figure due to institutional care.

In 1994, the Zero to Three National Center for Clinical Infant Programs published the *Diagnostic Classification: 0 to 3* (DC:0-3)⁵⁶ in an attempt to provide a more developmentally based and comprehensive classification system for mental health and developmental disturbances of early childhood. DC:0-3 termed its version of RAD, “Reactive Attachment Deprivation/Maltreatment Disorder of Infancy and Early Childhood” with an emphasis on the association between early abuse or neglect and later relational disturbance. The revised version (DC: 0-3R)⁵⁷ included criteria based on the work of Boris, Zeanah and colleagues,⁵³ removed the term “reactive attachment”, and defined “Deprivation/Maltreatment Disorder” as follows:

“This disorder occurs in the context of deprivation or maltreatment, including persistent and severe parental neglect or documented physical or psychological abuse. The disorder may develop when a child has limited opportunity to form selective attachments because of frequent changes in primary caregiver(s) or the marked unavailability of an attachment figure, as in institutional settings.” (DC: 0-3R, p.17)
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An alternative model of attachment disorders has been proposed,^{33, 58} one that more closely reflects both developmental research into attachment and clinical descriptions of “secure base distortions.”⁵⁹ The model delineates three types of attachment disorders: (1) Disorders of Nonattachment (similar to DSM and ICD), (2) Secure-Base Distortions, and (3) Disrupted Attachment Disorder. Where the psychiatric perspective of a one-person (one-child) pathology characterizes the first of these categories, the second and third are intended to capture pathology that may exist within a two-person context, pathology that is relationship (attachment) specific.
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Reactive Attachment Disorder (RAD): Disorders of Nonattachment

In times of distress or uncertainty, typically developing young children desire proximity to their preferred caregiver, accept the overtures of that caregiver, and are effectively comforted. Disorders of nonattachment are principally characterized by the absence of any preferred attachment figure and any attachment behaviours directed toward such a figure. According to the suggested alternative criteria,³³ non-attached children must have a mental age of at least 10 months and show no variability in attachment behaviours across relationships or contexts. Additionally, a proven history of pathogenic care should not be required for the diagnosis since early histories are often unreliable or unavailable at the time of initial evaluation.

Emotionally Withdrawn/Inhibited

In this pattern, the child does not seek comfort from a preferred caregiver, does not respond, or may even resist, when comfort is offered,⁶⁰⁻⁶² and is not easily soothed. Such children exhibit severe restrictions or an absence of; affectionate displays, cooperative or collaborative interaction, reciprocal response to the social overtures of others, and reliance on a preferred caregiver for assistance or reassurance. Children with this sub-type are also characterised by disturbances in emotional regulation.⁵³ The pattern has been found in populations of institutionalized children,⁶³ neglected children,⁶⁴ and children in foster care.^{60, 61}

The matter of differential diagnosis is especially pertinent to this sub-type. Withdrawn and inhibited behaviour may also be characteristic of early childhood depressive or anxiety disorders. It is important to note that while depressive symptoms inherently accompany nonattachment, the reverse is not the case.³³ The clinician must similarly be alert to the possibility that inhibited functioning may actually be related to hyper-arousal, possibly brought on by early trauma.^{64, 65} Questions of differential diagnosis are further complicated by the fact that institutionalization has been associated with a quasi-autistic disorder that looks similar to Pervasive Developmental Disorder (PDD) as well as with the RAD Inhibited sub-type, the two disorders sharing a lack of social responsivity.⁶⁶ While PDD has been found to occur in

environments that are considered adequate, RAD is singularly found in environments of extreme deprivation.³⁴ Additionally, unlike PDD, a substantial proportion of children with quasi-autism improve after placement in an adequate caregiving environment (Rutter et al, 2007).

Indiscriminate/ Disinhibited

In this pattern, the child displays “indiscriminate sociability” toward unfamiliar adults, without the developmentally appropriate reticence young children typically exhibit around strangers. The literature has described these children as “attention seeking”, “shallow”, and “interpersonally superficial.”⁵³ In interaction with unknown adults, such children will seek comfort, accept comfort when offered, and even protest upon the departure of the strange adult. The indiscriminate child will wander away from their caregiver without checking back. There is even recent evidence that these children are at particularly high risk for ‘going off with a stranger.’⁶⁷ In a comparative study using the “Stranger at the Door” Procedure, the investigators found that institutionalized children were the most likely to go off with a stranger, children in foster care were ‘intermediate’ and the least likely were the control sample children who belonged to neither group. The indiscriminate sub-type has been found in children who have experienced frequent placement changes while in foster care or institutionalization.^{63, 68}

Course and Amelioration of RAD

The preponderance of research into attachment disorders conducted over the past decade has concerned the outcomes of children reared in institutions. Data from studies following children adopted from Romanian orphanages has lead to new insights concerning the nature and variations of RAD. The data from these studies do not appear to support the notion of a critical period in the formation of human attachment bonds.⁵³ Romanian children initially assessed as non-attached were found to develop attachment behaviours with their British adoptive parents, assuming that the new caregiving environment was normative.^{69, 70} Among both British and Canadian adoption studies no children were found to meet criteria for the withdrawn/inhibited subtype following adoption, although the quality of their attachments could be atypical, insecure, and/or disorganized.^{71, 72} Additional data from foster care studies⁷³ support the conclusion that remediation of the emotionally withdrawn/inhibited sub-type is possible.

By contrast, studies specifically focused on the course of indiscriminate sociability have yielded the fascinating outcome that this feature appears to persist regardless of child placement into adoptive homes, return to biological families or continued institutionalization.⁷⁴ Romanian children adopted by Canadians continued to exhibit indiscriminate friendliness at both 11 months and 39 months post adoption, despite increases in attachment security with their caregiver during the same time frame.^{71, 75} Zeanah and Boris³³ conclude that the persistence of indiscriminate sociability in children adopted from institutions may be a “long-term complication” of early institutionalization.

Although the overall prevalence of RAD is extremely low (less than 1%),⁷⁶ as many as 38% of children in foster care studies have been found to exhibit symptoms of RAD⁷⁷ and 40% of institutionalized Romanian children were found to meet criteria for RAD with an additional 33% evidencing features of RAD.^{62, 78} The Romanian studies have further suggested that the presentations of the two sub-types may not be as mutually exclusive as initially thought, and as defined in DSM-IV-TR. Rather, institutionalized children may display features of both subtypes.^{62, 78}

Secure-Base Distortions

Although validation for the disorders of attachment known as secure-base distortions is not well established⁵³ these relational pathologies may be more closely related to what clinicians encounter in referred populations. In fact the behaviors described in this category are reminiscent of childhood disturbances described by Fraiberg, Adelson, and Shapiro as early as 1975.⁷⁹ The presentation of these symptoms is observed almost exclusively in the context of a specific attachment relationship. The sub-types are Attachment Disorder with: Self-Endangerment, Clinging/Inhibited Exploration, Vigilance/Hypercompliance, and Role Reversal.³³ It is of interest that the sub-types for secure base distortions are remarkably similar to behaviours observed among peer-reared primates who did form attachment bonds, but problematic ones.⁸⁰

The *Self-Endangering* sub-type refers to behaviours in which the child impulsively engages in exploratory behaviours unfettered and un-modulated by the opposing activation of attachment behaviours (e.g. proximity seeking, checking back). Aggression toward the self or caregiver is often present, as is significant risk-taking or self-endangering behaviour (e.g. running away from the caregiver in a public place, running into traffic, climbing to dangerous heights). Such children frequently come from homes where interpersonal violence has occurred and their behaviour suggests an attempt to activate the protective instincts of a caregiver who may be preoccupied, dissociative, passive, or unavailable in some other manner.^{58, 59, 81}

The *Clinging/Inhibited Exploration* sub-type describes a child for whom the attachment system is hyper-activated, to the detriment of the exploratory system. These children stick close to the parent but particularly when in unfamiliar settings. It remains unclear at what point such behaviour constitutes an actual disorder rather than a temperamental disposition.³³ The sub-type of *Vigilance/Hyper-compliance* describes a pattern in which the child is hyper-vigilant regarding the caregiver, hyper-compliant with caregiver requests, and emotionally constricted. The child impresses as frightened of displeasing or provoking the caregiver. This pattern has been previously described as “frozen watchfulness”⁸² in the literature on child abuse.

In the *Role Reversal* sub-type the child is observed to be preoccupied with the caretaking of the parent. In a manner that is developmentally inverted, the child seems to take on the responsibility of managing the parent’s emotional wellness, providing nurturance, empathy, even protection. In studies of children at age 6, role reversed controlling behaviours, frequently with an aggressive or threatening quality, were associated with disorganized-disoriented attachment classifications in infancy.^{23, 83}

Disrupted Attachment Disorder

The third alternative criteria for attachment disorders proposed by Lieberman, Zeanah and colleagues addresses the sudden loss of an important attachment figure during early childhood. It was James and Joyce Robertson⁸⁴ who first described a sequence of protest, despair, and detachment in children experiencing prolonged separations from their caregivers. This sub-type is intended to acknowledge the centrality and profound impact of such a loss for very young children. The clinical literature is rich with descriptions concerning the deleterious effects of the death of a parent⁸⁵ and of the attachment disruptions inherent in foster care placement.⁸⁶ Questions regarding risk and protective factors as well as empirical validation efforts remain regarding this disorder.³³

Attachment Based Interventions for Disturbances of Attachment

A number of interventions have been developed over the past several years with the explicit intent of addressing disturbances of child-parent attachment. Several of these interventions are reviewed elsewhere in this volume: Child-Parent Psychotherapy (CPP)⁸⁷ See....; Interaction

Guidance⁸⁸ See..., Clinician Assisted Videofeedback Exposure Session (CAVES)⁸⁹ See..., Circles of Security (COS)⁹⁰ See... In addition to those already described in this volume, some additional interventions which are specifically targeted at attachment disorders include the following:

Minding the Baby^{91, 92} is a relationship based weekly home-visiting program for young high-risk and first-time mothers, many with a history of trauma, that incorporates the Reflective Functioning, or mentalization, component of certain infant-parent psychotherapy models. Program outcomes have shown increases in maternal reflective functioning, decreases in maternal depression and PTSD symptoms, and no children exhibiting disorganized attachment.¹⁰⁵

Cicchetti, Rogosch, and Toth⁹³ have used a modified version of Infant-Parent Psychotherapy (IPP)⁷⁹ in an effort to increase infant security of attachment in maltreating families. This intervention emphasizes increasing sensitive maternal responsivity via attention to disturbed maternal attachment representations. Outcomes have revealed increased rates of secure attachment, from 3.1% at baseline to 60.7% at follow up.

Mary Dozier and colleagues in Delaware have developed an evidence-based intervention for very young children in foster care titled "Attachment and Biobehavioral Catch-Up" (ABC).⁹⁴ ABC is a manualized 10 session training program for foster parents and in a controlled trial has been found to be associated with lowered cortisol values, and fewer behavioral problems as reported by foster parents.

In Louisiana, the Tulane-Jefferson Parish Human Services Authority Infant Team has partnered with child welfare, judicial, educational, and health care systems to provide assessment and intervention for abused and neglected infants and toddlers (under 48 months) placed into foster care.⁹⁵ Following treatment, very young children's rate of risk for a subsequent incidence of maltreatment was reduced by up to 68%.

Finally, in Romania, Zeanah, Smyke, and colleagues have described interventions that result in significant overall improvement in functioning and developmental markers for those children with profound disorders of non-attachment. Children who entered the Budapest Early Intervention Program (BEIP),⁶⁷ a foster care placement program with attachment and development sensitized families, demonstrated substantial reduction or remission of emotionally withdrawn/inhibited symptoms. Children living in institutions but enrolled in an enriched attachment oriented "pilot unit"⁶² showed significantly reduced signs of both RAD sub-types compared to the institutional care-as-usual group.

PART II: Perspectives on the Caregiver and the role of Parental Psychopathology

The Role of the Caregiver in Mutual Regulation / Attachment

Hofer⁹⁶ first described what he called "hidden regulators," that is multiple micro-systems that subserve the larger macro-system of what Bowlby had termed "attachment". Hofer discovered that in rodents a bidirectional process of regulation, a mechanism for relational feedback, would help the infant maintain basic physiologic homeostasis with regard to body temperature, arterial blood pressure, as well as sleep, feeding, and elimination patterns. In humans, Stern⁹⁷ has referred to "affective attunement" and Tronick and Gianino⁹⁸ to "mutual emotion regulation" as psychological extrapolations of hidden physiologic regulation.

In a laboratory paradigm known as the "Still-Face" procedure, infants within the first-half of the first year of life are seen to express a range of positive affects that are perceived, mirrored,

and modulated by the caregiver under normal circumstances.⁹⁸ In the procedure, after a prescribed period of typical interaction, the caregiver is instructed to now maintain a poker-face, and therefore fails to mirror and modulate the infant's affect. The infant initially responds by trying desperately to elicit the caregiver's feedback. When these bids for engagement are unsuccessful, the infant becomes frustrated, agitated, and finally turns away in resignation with visibly flattened affect. In normative dyads, when the caregiver is then instructed to resume interaction, the infant is seen to re-engage as well—some infants more eagerly than others.

The Still-Face paradigm has thus become an exquisite measure of maintenance, rupture, and repair of mutual emotion regulation. While the child-parent attachment, and the many hidden regulators that subserve it, clearly operate within a bidirectional system, the Still-Face paradigm demonstrates the overall *asymmetry* of this system. By definition the adult caregiver has emotional, cognitive, and physical capacities that permit psychological availability to, understanding of, and communication with the infant or toddler that cannot be reciprocated due to the developmental limitations of the young child. Thus, the caregiver's capacity to self-regulate her own emotion, attention, and behaviour is essential to her ability to assist her baby with regulation of his emotion, arousal, attention, and bodily control.

Indeed, the critical role of the caregiver in determining infant attachment classification was empirically established following the development of the Adult Attachment Interview (AAI) by Mary Main and colleagues.^{6, 99} Main's group found that the degree of coherence and integration characterizing caregiver narratives about their past attachment relationships, on the AAI, could be reliably coded into attachment categories. These adult categories were subsequently found to be highly correlated with infant attachment.¹⁷ "Secure/Autonomous" attachment in the parent was associated with secure attachment in the infant, "Dismissive" with avoidant, "Preoccupied" with resistant, and "Unresolved", with respect to trauma and loss, with disorganized. Attachment theorists suggested that the mechanism responsible for this intergenerational transmission was the caregiver's quality of mental representation of others and self-in-relation to others.^{100, 101} In the language of attachment, the infant's "internal working model" of self and other is influenced by the quality of the caregiver's internalized attachment representations via interactions with the infant that arise from those representations.

Fonagy et al.,^{102, 103} went beyond the content and associated affects involved in caregivers' internalized attachment representations to examine an aspect of metacognitive monitoring of the self and social cognitive awareness of the other. This awareness of self and other is implicit in the more coherent and emotionally rich narrative responses among those adults characterized as "Secure/Autonomous" on the Adult Attachment Interview (AAI). Fonagy et al.¹⁰² defined this aspect that he called "mentalization" (or alternatively, in an operationalized form for research measurement, "reflective functioning" - RF), as the awareness of a meaningful relationship between underlying mental states (feelings, thoughts, motivations, intentions) and behavior in and between both self and others. Using the narrative content of the AAI, Fonagy's group found that caregiver RF was significantly predictive of infant attachment classification, even beyond that of AAI classifications. High RF was found to be strongly associated with secure infant attachment and low RF with insecure infant attachment. The caregiver's capacity to read infant mental states accurately, and with inference of meaning, allows for sensitively attuned responses that create a subjective experience of security/safety and support the infant's developing capacity for self-regulation.^{91, 104}

Slade and her colleagues¹⁰⁵ have since moved from considering the caregiver's RF as elicited by inquiring about the caregiver's mental representations of her own caregivers and her relationships with them (i.e. in the past), to considering the caregiver's RF as elicited by inquiring about the caregiver's mental representations of her child and her relationship with her child (i.e. in the present). Slade and colleagues have developed a developmentally specific

interview for parents of infants and toddlers from which transcripts of narrative are coded. A mother's high RF in this context has been associated with more balanced and coherent mental representations of her child¹⁰⁶ and less atypical maternal behaviour with her child.¹⁰⁷ Since the work of Slade and her colleagues, others have developed alternative coding schemes that can be usefully applied "in vivo" to examine parental mentalizing capacity or "insightfulness" during clinical observations of parent-child interaction as well as during interventions to address disturbances in the attachment.¹⁰⁸

Disturbances in Caregiver Self-Regulation and Disturbances of Attachment

In her writings on the intergenerational transmission of trauma, Selma Fraiberg⁷⁹ long ago noted that disturbed internal attachment representations held by the parent ("Ghosts in the Nursery") give rise to disturbed patterns of caregiving, which then result in disturbed attachment behaviours in the child. Fonagy and colleagues¹⁰⁹ suggested that when engagement in reflective functioning leads to highly negative affect, certain aspects of mental functioning may be defensively inhibited in order to protect against overwhelming affect. A caregiver in a state of defensive inhibition will be incapable of accurately responding to and reflecting the child's mental state, leaving the child to manage states of arousal and anxiety on their own.

Within a standard attachment research paradigm during the second year of life, Main and Hesse,¹² and later Lyons-Ruth and colleagues¹¹⁰ identified *dysregulated* and therefore *dysregulating* caregiving behaviour(s). Main and Hesse's original conceptualization was one of maternal behaviours that were "frightening" or fight-like, aggressive, and intrusive, and "frightened" or flight-like, withdrawing, and distancing. These behaviours were expanded upon by Lyons-Ruth and colleagues to also include "affective communication errors" (incongruence of affect between child and caregiver response), "disorientation" (freezing, depersonalizing behaviour, and dissociative discontinuity), and role reversal (parentified or otherwise adultomorphic behaviour). These behaviours, termed "atypical maternal behaviour" or "disrupted communication," have been reliably measured using the coding system known as the "Atypical Maternal Behavior Instrument" or "AMBIANCE."¹¹⁰

Across multiple studies, dysregulated maternal behaviours have been associated with unresolved trauma and loss in the caregiver's attachment history as well as with insecure, disorganized attachment in the toddler.^{111, 112} In a 20-year-long prospective study of toddlers originally seen in the Strange Situation Paradigm, atypical maternal behaviours at the time of the SSP were associated with later adolescent dissociation, borderline personality characteristics, and conduct disturbances.¹¹³ Moreover, this type of caregiving behaviour is not explained so far by genetic polymorphisms of the dopamine receptor gene DRD4 - although this marker, when measured in infants, has been shown to render those infants vulnerable to attachment disorganization when interacting with atypical caregiving behaviours.¹¹⁴

Parental Psychopathology: Attachment Implications from the study of caregiver PTSD

Any form of psychopathology, be it schizophrenia, bipolar disorder, obsessive-compulsive disorder, or substance abuse can adversely impact the caregiver's capacity to engage in mutual regulation. The nature of the interference with mutual regulation may be particular to the diagnosis and/or to the individual, but certainly it leads to a distinct effect on that individual caregiver's relationship with her child. Maternal Major Depression, as noted in the Still-Face paradigm literature¹¹⁵ is a clear example of a disorder that has been demonstrated to disrupt mutual emotion regulation with distinct and enduring bio-behavioural effects on the infant.¹¹⁶

Recent studies such as STAR*D¹¹⁷ have underscored how pharmacologic treatment of the depressed mother (only) can improve parent and child outcomes in terms of reduction of child psychiatric symptoms. This is an important point for communities lacking in early childhood mental health resources, however, attachment and interactive behaviour have not yet been examined in these studies. One would think that maladaptive patterns of attachment and disruptions of mutual regulation related to maternal depression would need to be addressed, as well as maternal psychopathology, in order to make a deep and sustained change within the parent-child relationship. It has also been empirically demonstrated that comorbidity as much as, or more than, any particular form of caregiver psychopathology is strongly associated with disturbances in attachment such that treatment for a specific disorder in one partner of the dyad may not suffice.¹¹⁸

Parental PTSD, a frequently co-morbid disorder itself, is one important example of caregiver psychopathology that can disrupt mutual emotion regulation and lead to disturbances of attachment meriting clinical attention. PTSD is of particular interest because the nature of the disorder is marked by significant affect dysregulation. The individual with PTSD, particularly interpersonal violence-related PTSD, enters a defensive, hypervigilant, self-preservative position relative to other individuals. This defended position prohibits an affiliative stance that would permit psychological availability to another, such as an infant or toddler, and it is this availability that is essential to mutual emotion regulation.¹¹⁹

Lyons-Ruth and Block¹²⁰ were first to empirically explore the associations between violence-related posttraumatic stress disorder, atypical caregiving behaviour, and attachment disorganization in low-income, high-risk, mothers and toddlers. They identified a moderate correlation ($r = .35$) between maternal hostile-intrusive (atypical) behaviour and self-reported severity of posttraumatic stress disorder (PTSD). Simple exposure to violent trauma in the absence of related psychopathology (i.e. PTSD) appears to be a necessary but insufficient predictor of atypical caregiving behaviour. Significantly, among insecurely attached toddlers, 88% of those with mothers having a history of violent trauma and PTSD symptoms exhibited disorganized attachment. In comparison, only 33% of insecure toddlers with mothers *without* such a history exhibited disorganized attachment.

Schechter et al.^{121, 122} explored the possibility that clinically-referred mothers with a history of interpersonal violence-related PTSD would display psychobiological dysregulation and that such physiologic dysregulation would also be associated with disturbances in mental representations of the child as well as caregiving behaviour. The study indeed found that greater severity of maternal PTSD was associated with lower maternal baseline salivary cortisol and greater likelihood of distorted, inflexible and negative mental representations of the child. The latter variables were in turn associated with greater atypical maternal behaviour.

But why should a history of interpersonal violence-related PTSD cause such problems for caregivers in the parenting of their very young children? Since very young children cannot regulate their emotional or behavioural responses very well, a toddler or preschooler's tantrums may appear quite violent and frightening to traumatized parents. Additionally, helpless or frightened states of the toddler's mind, such as often occur upon separation, may prove intolerable to traumatized parents. Helplessness, fear, or rage in the toddler may trigger traumatic memories of the caregiver's own (a) past experiences of helplessness and (b) curtailed rage at their abuser. Frightened or rageful states in the mind of the caregiver may be so intolerable, that they are projected onto the distressed child.⁷⁹ Such projections are observable in the motivational misattributions commonly voiced by traumatized parents (e.g. "He's just trying to control me"). Alternatively, as Schechter and Willheim have described clinically,¹²³ the caregiver may defensively inhibit any reflective awareness of the child's mental state, either via dissociation or by physically removing herself from proximity to the

child. In either case, the traumatized parent is unavailable to provide a secure base or to support affective regulation for the distressed child.

PTSD and Secure Base Distortions

The first author¹²⁴ most recently replicated and expanded his 2008 studies of violently traumatized mothers with the goal of examining whether or not secure base distortions⁵³ would be significantly associated with severity of maternal violence-related PTSD and atypical maternal behaviour. More specifically, the operant hypothesis was that atypical maternal behavior would function as a mediator between maternal PTSD and secure base distortions. As noted in Part I, there has been little if any research conducted to establish the validity of secure base distortion criteria either in isolation or relative to other variables.⁵³

In clinical and control samples of 76 mothers and their 12-48 month old children who were recruited from community pediatrics clinics in Northern Manhattan, mothers were assessed for PTSD using the Clinician Administered PTSD Scale (CAPS)¹²⁵ and Posttraumatic Symptom Checklist—Short Version (PCL-S).¹²⁶ Secure base distortions of children were measured using the Disturbances of Attachment Interview (DAI),^{55, 127} a 12-item semi-structured interview of the parent that permits observations to be made simultaneously if the child is present. The DAI consists of three sections with four items each: DSM-IV-TR RAD-Inhibited Type; DSM-IV-TR RAD-Disinhibited Type; and Secure Base Distortions. The four items in the latter category are: separation anxiety, hypervigilance, self-endangering and otherwise risky behavior, and role-reversal. Atypical maternal behavior was rated using the coding scheme from the Atypical Maternal Behavior Instrument (AMBIANCE)¹¹⁰ as applied to a video-taped laboratory mother-child interaction sequence known as the Modified Crowell Procedure.¹²⁸

Not surprisingly, few children met criteria for RAD, neither the inhibited type (1.3%) nor disinhibited type (2.6%). However, 27.3% of the sample children met criteria for secure base distortions. One of the most interesting findings was that the four factors of the secure base distortions *together* had a Cronbach's alpha of .75, suggesting strong inter-correlations between the four component items of this particular attachment disturbance. All of the children meeting criteria for any of the three attachment disturbances had mothers with a diagnosis of PTSD. Table 1 illustrates the relationship of secure base distortions to severity of maternal violence-related PTSD and atypical maternal behavior. Severity of maternal PTSD was significantly associated with the number of secure base distortion criteria met on the DAI, with roughly one third of the variance of secure base behavior accounted for by severity of maternal PTSD. Atypical maternal behavior was only weakly related to secure base distortions in this study, at a trend-level of significance.

Research Conclusions

Past research has shown PTSD to be related to atypical caregiving behavior, atypical maternal behavior has been related to disorganized attachment, and disorganized attachment has been identified as a risk factor for later pathology. However the recent data detailed above serves as an example of research investigating the relationship between particular types of maternal psychopathology and particular forms of attachment disturbance. In this case a parental pathology associated with significant affect dysregulation, namely interpersonal violence-related PTSD, has been found to be associated with secure base distortion behaviors. The fact that atypical maternal behavior was not found to be a mediator of the effects of maternal PTSD in this study alerts us to the need for further examination of the complex interaction between caregiver pathology and disturbances of attachment.

Research into Reactive Attachment Disorder and the effects of severely deprived or institutional care has made enormous progress over the past decade, however questions remain regarding secure base distortions. The category speaks loudly to clinicians who daily encounter children from trauma-ridden multi-problem families. As noted above, the four sub-types appear to be highly inter-correlated and as a whole are associated with severity of maternal PTSD. Are the four sub-types really discrete entities or do the behaviors exist on a continuum? Are secure base distortions relationship-specific or markers for disturbances that may be linked to child traumatization and PTSD? Are there caregiver pathologies that correlate more highly with some secure base distortion behaviors than with others? And what is the relationship between disorganized attachment classification and secure base distortions? Such questions await future investigation.

Summary and Clinical Implications

The clinical implications of this review are summarized by the following recommendations concerning the diagnosis and treatment of attachment disturbances. First, there is a need for careful psychiatric evaluation, diagnosis, and active treatment of three patients: the parent, the child-parent relationship, and the child - with attention to the accumulated effects of attachment disturbance on social and emotional development.¹²⁹ Interventions that address the child and parents' individual needs AND that directly focus on the child-parent relationship are most likely to interrupt intergenerational transmission of trauma and impairing disturbances of attachment.¹³⁰ Second, as has now been demonstrated across multiple studies,^{89, 102, 107} interventions that bolster parental capacities to mentalize, i.e. to think about what is going on in their own mind and the mind of their child, are likely to improve child-parent attachment. A mentalizing stance by the caregiver allows for improved caregiver self-regulation and thereby positively impacts child-parent mutual regulation, which ultimately supports the child's successful attainment of self-regulation.

Third, treating clinicians should always keep in mind the foundational concepts of attachment; the centrality of fear and distress, the need for safety and comfort, the internal working models that guide expectations and behavior, and the balance between attachment and exploratory systems. Exploration, moreover, can be understood to encompass both that of the external AND internal worlds of the child. Fourth, an additional target of intervention, especially in clinical situations in which a caregiver's mental health is significantly and chronically compromised, is that of augmentation of social support. The clinician supports the alliance between the caregiver and child but additionally maximizes the child's social-emotional development via thoughtful recruitment of familial, community, and therapeutic social supports in order to provide alternative models of attachment that foster the development of mentalization and broader social cognition.¹²⁹

This review has addressed diagnostic categories of child attachment disorder, proposed classifications for disturbances in child-parent attachment, and the manner in which certain forms of caregiver psychopathology serve to severely disrupt child-parent mutual regulation of emotion and arousal. It is clear that, in the context of early development especially, a great deal of plasticity helps the young child to adapt to new relationships, to embrace new models of complex human interaction and individual differences, and to thereby alter his or her internal working model of attachment relationships. We have seen, for example, that institutionalized children placed into enlightened foster care, or internationally adopted by a new set of caregivers, can make substantive gains in developmental and relational domains. At the same time, plasticity has its limits such that so called "indiscriminate sociability" or "glomming on to strangers" does not improve or change substantially in the majority of cases.⁵⁵

Finally, the authors hope that by now readers will have realized that any attempt to "impose" secure attachment on a child, as has been professed by so called "holding therapies", flies in

the face of what attachment theory and related research hold dear,⁵³ namely, that the process of attachment evolves. It grows and consolidates within a relationship with a caregiver who is able to provide repeated experiences of safety and protection, consistent and sensitive response in times of distress, and the capacity to mentalize the experience of the child. It is therefore essential to model for caregivers, and to provide for our patient-families, emotional constancy and availability while continuously striving to understand, follow, and communicate with the child, as an individual with his or her own mind, feelings, thoughts, intentions, desires, and beliefs.¹³¹

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Table 1

Relationship of Maternal PTSD and Atypical Maternal Behaviour to Secure Base Distortions (N=76)

Dependent Variable	Predictors	F	R ²	B
Secure Base Distortion Number of Criterion Behaviors	Maternal PTSD	32.81***	.30	.55***
	AMBIANCE	3.20 ⁺	.04	.20 ⁺
	Maternal PTSD AMBIANCE	17.32***	.32	.53*** .12

Significance values:

⁺ <.1,

* <.05,

** <.01,

*** <.001