Applying clinically-relevant developmental neuroscience towards interventions that better target intergenerational transmission of violent trauma

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Within the context of infant-parent attachment, primary caregivers provide multiple, complex, and often "hidden" regulatory functions. These functions are akin to individual colored threads, that when woven together, compose a brilliant, unique, and clearly recognizable pattern, itself the focus of the artful tapestry that is the individual infant's relationship to his primary caregivers (Hofer, 1984). One form of "hidden" regulation of critical importance to the child's capacity to form healthy relationships with others and to learn, is emotion regulation (Cassidy, 1994). The term "mutual regulation," as first used by (Tronick & Gianino, 1986), refers to a bidirectional, albeit asymmetric, process of emotion regulation between the adult caregiver and the infant.

Description of our study

Our studies, conducted both in New York and in Geneva, are aimed at understanding the interplay of factors that disrupt and facilitate mutual emotion regulation. It is well known that maternal psychopathology, such as depression (Tronick & Gianino, 1986), or anxiety (Moore, Whaley, & Sigman, 2004)) disrupts mutual regulation. It has clearly been established that maternal history of attachment security and its robust marker, reflective functioning (Fonagy, Steele, & Steele, 1991; Slade, Grienenberger, Bernbach, Levy, & Locker, 2005), both embedded in the concept of maternal caregiving sensitivity, are the main tools for repair of mismatched parent-infant communication, and thus for mutual emotion regulation.

Central to our program of research is the hypothesis that mothers with violence-related post-traumatic stress disorder (PTSD) may experience their very young child's routine distress as a trigger of pre-existing post-traumatic stress (Schechter, 2003). We have noted, via our clinical observations, the particular phenomenon in which intense displays of helplessness, frustration, rage, and terror by very young children with limited developmental capacity to regulate their emotion remind many mothers who have been victims of violence of 1) their violent perpetrators' behavioral dyscontrol, 2) the victim-mother's own fear and helplessness. As such, the young child can trigger his or her mother's PTSD symptoms.

Clearly, such a perceived interpersonal threat by the very young child in distress can shift a mother's primary preoccupation with that young child's needs to that of her own individual survival. Fraiberg and colleagues spoke of this shift among traumatized mothers in psychological terms by describing the notion that infant-parent intervention must involve the therapist's hearing the traumatized "mother's cry so that she can hear her baby's…" (Fraiberg, Adelson, & Shapiro, 1975). More recently, developmental neuroscientists have been attempting to understand under what conditions, parents are more likely to be able to be emotionally available to or "affiliative with" their babies, and when they must turn their attention to planning "fight, flight, or freeze" in the presence of danger (Porges, 2007). This redirection of attention to self-preservation, which implies activation of the sympathetic overriding the parasympathetic (i.e. vagal) arm of the autonomic nervous system in Porges' "poly-vagal theory" removes the parent from being attentive to her child's cues, with a focus on self-rather than mutual-regulation of arousal and emotion, and thus greatly increases the risk for gross misinterpretation of her child's cues.

When we started our research in this area--following from Fraiberg's pioneering work, interest in parental trauma and attachment was burgeoning (Main & Hesse, 1999, Silverman & Lieberman, 1999; Fonagy, 2000; Scheeringa & Zeanah, 2001; Laor, Wolmer, & Cohen, 2001). Despite this general interest, we and our colleagues noticed that only a single published study had systematically measured parental posttraumatic stress in relation to maternal caregiving behavior (Lyons-Ruth & Block, 1996). This study found a moderate correlation between severity of self-reported maternal PTSD symptoms that were associated with histories of maternal histories of maltreatment and hostile-intrusive caregiving behavior, the latter particularly associated with history of physical abuse (Lyons-Ruth & Block, 1996). In cases of maternal violence-related PTSD, these repeated acts of attentional redirection to mother's self preservation amplify the sense of helplessness and distress in the child. Helplessness and distress in the child, in turn, often lead the mother to further defend herself from her own feelings of helplessness and to distance herself emotionally and/or physically from the child, rather than providing contingent comfort, emotional containment, and protection.

PTSD and negative maternal attributions

Maternal attributions open to the clinician a window into the mother's mental representations of her child and her relationship with him or her. The running record of these maternal representations –"working model" in terms of attachment theory- are largely based on a mother's own relational experience and strongly predict how a mother will behave with her child (C. H. Zeanah, et al., 1993). A mother's perception of her child may be negatively skewed by the experience of interpersonal violence and subsequent triggers posttraumatic stress disorder (Lieberman, Van Horn, & Ippen, 2005; Schechter, 2003). Maternal self-reports themselves support the hypothesis that the child particularly in vulnerable and helpless states of mind poses a threat to the traumatized mother; the majority of PTSD-afflicted mothers reported that their very young child were one of the three greatest stressors in their lives rather than as sources of joy and have distorted, negative, and poorly integrated maternal mental representations of the

child (Schechter, et al., 2006).

In a previous paper (Schechter et al., 2005), we also described the association between mentalization, otherwise operationalized for measurement in research as "maternal reflective functioning (RF)" and balanced, integrated positive and negative maternal mental representations of the child. Often, caregivers with PTSD very specifically misperceived their child's separation anxiety and sense of helplessness as anger, coerciveness, or otherwise a threat. As a result, many traumatized mothers stated that they often try to avoid their child's distress by "tuning out", "blocking out the crying", or "leaving the room" so as to maintain their own emotional regulation (Schechter, Kaminer, Grienenberger, & Amat, 2003). Mental representations that were excessively angry or otherwise distorted by being excessively negative or by attributing to the child characteristics that would clearly be beyond his power or inappropriate for his age, were associated with symptoms of violence-associated PTSD (Schechter, et al., 2005).

The child as a trigger of maternal preexisting PTSD

The idea that the child himself/ herself could be a trigger of preexisting post traumatic stress for a parent emphasizes the co-constructed parent-child interaction with primacy on the child's impact on the parent in moments of distress and the parent's reaction to the distressed child in return. This is in contrast to the more frequently described and no less important effects of the parent with her history and how she affects her child (Scheeringa, Peebles, Cook, & Zeanah, 2001). While Sameroff (1975) first described a bidirectional model of parent-child interaction in which the infant impacts the parent's response, the notion that the child could represent a posttraumatic trigger for a traumatized parent emerged clearly for the first time to our knowledge in our work with interpersonal violence exposed mothers and in our work with children whose separation anxiety broke through parental defenses against the sudden loss of loved ones during the terrorist attacks on the World Trade Center on September 11, 2001 (Schechter, Coates, & First, 2002; Schechter, 2003).

One of the most well-studiedparadigms in our field that is used to study child-caregiver attachment, the Strange Situation (Ainsworth, Blehar, Waters, & Wall, 1978) as well as the Crowell Procedure as modified by Zeanah and colleagues (2000) involves parent-child separation and reunion that offer us a normative stressor that is observable in the laboratory and that, particularly within the second year of life, tends to elicit distress in both child and parent. While much attention has been paid to what happens during reunion, including the impact of the mother's state on the child, relatively little attention had been paid to what happens in mother's and child's mind during separation and the subsequent effect of the child's distress on the mother.

Joint Attention—as many of you will be more familiar with in the context of research specifically on language development and autistic spectrum disorders, is also a crucial focus of evaluation when considering emotion regulation and the development of secondary intersubjectivity beginning at age 8 to 10 months. Joint Attention is the process by which two individuals alert one another, often non-verbally such as by gaze and-or pointing, to a common focus of attention and reference each other so as to acknowledge their shared focus. It is thus a "triadic skill," in that it involves two people plus a point of reference, which may either be an external object or event or an internal state or event (Schechter, et al., 2010). With regards to internal state awareness, we have argued that this capacity is an important prerequisite to a mother's assisting her child with emotion regulation: jointly attending to the child's emotional state and being aware of the child's efforts to read mother's emotional state.

Our research questions

We wanted to study the following questions; 1. Is there is any difference in the way violently traumatized and non-traumatized mothers are affected by their child's distress at separation, and in the level of the children's distress ? 2. What happens at the moment of reunion, when traumatized mothers open the door,? How do they perceive or read their child's cues and distress? 3. How do traumatized mothers, compared to healthy mothers, tolerate and contain their own and their child's fear and anxiety, and respond to their child's bids for attention? Are the mothers able to settle down, and become emotionally available for joint attention with their child given their child's distress?

We addressed these questions with a new cohort in The New York Parent-Child Interaction Project.

THE NEW YORK PARENT-CHILD INTERACTION PROJECT (NY-PCIP)

The NY-PCIP was a National Institute of Mental Health funded study, that replicated and expanded an earlier original study of a referred sample, but this time, within a community pediatrics clinic sample. The study ran from February, 2004 until February, 2007. Analyses of the wealth of data from this study are ongoing with publications still in preparation and under review. The sample consisted of 77 mothers ages 18 to 48 (mean 29 years, SD 6.8) with children ages 12 to 48 months old (mean 28 months, SD 10.7), out of which 58% of boys. The majority of mothers and children were Hispanic (81%). The average length of maternal education was 12-13 years. Roughly 60% were single mothers. Fathers' histories were collected but the fathers themselves were not be included in this study.

Procedure

After informed consent and screening (exclusion criteria included active psychosis, intoxication, developmental or physical disabilities that would preclude performance on experimental tasks), mothers underwent three videotaped interviews and observations.

Visit 1 was focused on mother's mental state and psychopathology. Mothers were also interviewed about their mental representations of their child and relationship with their child (Working Model of the Child Interview (WMCI), (C. H. Zeanah & Benoit, 1995)). A detailed maternal life events history was obtained followed by clinician assessment of trauma-associated psychopathology (i.e. PTSD, dissociative, and depressive symptoms).

Visit 2 was focused on observation of interactions with the child and on the mother-child relationship assessment that included free-play and challenging structured play tasks that triggered maternal scaffolding, and most importantly, various stressors that remind daily sources of child distress, such as a separation-reunion,an obligatory clean-up and a novel surprising stimuli (i.e. being cared for by a stranger, meeting a furry spider toy that jumps).

Visit 3 was actually an intervention session, based on the paradigm described below, the "Clinician Assisted Videofeedback Exposure Session (CAVES; (Schechter, et al., 2006).

Imaging Sub-Study

What happens in the brains of mothers who have been traumatized by violence and maltreatment when they parent young children? With Brad Peterson and his MRI Lab at the New York State Psychiatric Institute, and support from the Sackler Institute for Developmental Psychobiology and the NIH, we conducted a small neuroimaging study that tried to get at what underlies parental perception of child emotion and parental behavioral response in the face of common stresses in parenting a young child, among the traumatized , as compared with healthy controls. The goal of this sub-study was specifically to understand how mothers' stress during separation might affect their processing of child emotional communication while watching video clips of their own and unfamiliar children both in a positive affect-eliciting or free-play condition and a negative-affect eliciting or separation condition from Visit 2. Those mothers interested and eligible to participate were offered an additional consent form and participated in a neuroimaging sub-study which took place between Visit 2 and Visit 3.

Results of the NY-PCIP

Psychological findings

Mothers response to separation and other forms of stress.

We found that mothers with IPV-PTSD reported more parenting stress in general on the Parenting Stress Index (t-test [df 1,44]: -2.35; $p<0.05$; also see (Schechter, et al., 2010). More importantly, during our post-MRI interview revealed that mothers with IPV-PTSD were significantly more stressed by seeing videos of their own and unfamiliar children during separation than controls (Schechter et al., submitted).

Mothers' reading of child emotional communication on reunion.

Mothers with IPV-related PTSD describe their children much more negatively and in terms that are age-inappropriate than healthy controls in quantitative analyses (Reliford & Schechter, 2009; Schechter, et al., 2006). We have also been analyzing qualitatively maternal interpretation of child affect upon reunion and find most often confusion between child anger, controllingness with child fear, helplessness (Schechter, 2003; Schechter, et al., 2006). This requires further quantitative study that is under way.

Behavioral findings

Mothers' response to their reading upon reunion.

In this area, we have the most findings. We have noted that IPV-PTSD diagnosis and symptom severity as mentioned above is significantly associated with parenting stress and that both measures of stress are associated with more disrupted communication on the Atypical Maternal Behavior Instrument (AMBIANCE, (Lyons-Ruth, Bronfman, & Parsons, 1999)) which in arriving at a final overall score that involves coding of the entire interactive sequence (i.e. free-play, separation, and reunion), weights more heavily the maternal behavior with her child upon reunion to determine the score. We also found that greater disrupted communication on the AMBIANCE is associated with less time spent in joint attention during play generally. Specifically, during play following separation-reunion, greater maternal PTSD severity is associated with less maternal availability to respond to child bids for joint attention (Schechter, et al., 2010) .

Disturbances of child-parent attachment.

We furthermore noted that greater maternal PTSD severity, is associated with disturbances of child-parent attachment when we analyzed data from the Disturbances of Attachment Interview (DAI) (Schechter & Willheim, 2009; Smyke, Zeanah, Fox, & Nelson, 2009). We found that four behaviors in particular: reckless self-endangering behavior, separation anxiety, hypervigilance, and role-reversal were interestingly and significantly related to one another (Cronbach's alpha=.75) to form a construct labeled in the literature as "Secure Base Distortion". This cluster of behaviors were significantly related to the severity of maternal PTSD symptoms (Schechter & Willheim, 2009).

Neuroimaging findings

What do we think is going on in the brain of traumatized mothers during separation that would account for this disruption of mutual emotion and arousal regulation? We already have found that when mothers watch videos of their own child and unfamiliar children during separation— a stimulus-condition that shows the child in a helpless, and frightening context, as compared with quiet play with mother—a stimulus-condition that shows the child in a safe and empowered context, the higher cortical areas (medial prefrontal cortex, superior frontal gyrus) that are activated in non-traumatized mothers' brains (controls) are not activated in the traumatized mothers. Traumatized mothers rather showed greater activation in limbic areas associated with hypervigilance and response to contradictory emotional input (i.e. entorhinal and anterior cingulate cortex) (Schechter, et al., submitted). These neural activation findings may well help us understand what underlies the disruption of maternal availability for joint attention after separation corresponding to maternal severity of PTSD (Schechter, et al., 2010). They also suggest that the "internal mutual regulation" that under normal circumstances takes place within the brain between higher cortical areas and limbic regions as observed through the microscope of functional brain imaging may be disrupted among traumatized mothers. So, this disruption among traumatized mothers at the level of neural activity in the brain may well be parallel to the behavioral disruption in the "external mutual regulation" of emotion and arousal with their young children that we observe with the naked eye. This is further supported by a post MRI-scan interview that we gave mothers from which we found that traumatized mothers as compared to healthy controls, rate that watching their own and unfamiliar children during separation is significantly more stressful.

These findings that suggest convergence between the psychological, biological, and neuroimaging parameters of post traumatic stress disorder, are indeed very exciting

GENEVA STUDY

Our aim is to replicate and expand the New York Study Parent-Child Interaction Project in Geneva. We are recruiting a larger sample (N=120) with 1 clinical group (Interpersonal Violence + PTSD) that is more strictly constrained to mothers who have been victims of domestic violence as well as to have multiple control groups including non-violence exposed and depressed mothers. We also lowered the upper age limit to increase the likelihood of dependence on mother for regulation of distress during separation (18-42 months). Finally, we wish to follow the different paths their children take over 3 years of follow up, more specifically the avoidant and the aggressive ones .

Clinical application: The Clinician Assisted Videofeedback Exposure Session

Given the clear disturbances in many traumatized mothers' caregiving behavior and the associated disturbances in young children's self-regulation of emotion and arousal, we must ask what we can do as clinician's to help these families.

Forms of parent-child psychotherapy that use videofeedback as a way of engaging the parent to focus with the clinician on interactive behavior have been documented to result in dramatic change in parent-child behavior in a relatively brief time-period (Robert-Tissot, et al., 1996; Rusconi-Serpa, Sancho Rossignol, & McDonough, 2009; Van den Boom, 1994; Zelenko & Benham, 2000).

An intrinsic part of evidence-based efficacious treatments for PTSD (Foa, et al., 1999) is a clinician-guided exposure to traumatic reminders, particularly avoided negative affect and arousal. Interventions for these traumatized mothers and children need to focus on helping them tolerate trauma-associated mental states in their children and supporting them read and respond to their children's emotional cues.

The Clinician Assisted Videofeedback Exposure Session (CAVES), (Schechter, et al., 2006), was designed as an experimental paradigm both (a) to test our hypothesis that traumatized mothers often misread child distress and defensively avoid helpless states of mind and normative aggression that remind them of their experience of violence; (b) to support the ability of mothers with violence-related PTSD to tolerate and integrate the negative, trauma-associate emotions stirred up by routine stresses such as separation and tantrums in stimulating and modelling mother's reflecting functioning.

This intervention combines specifically a joint attention to video feedback of mother-child interaction that involves mother and supportive clinician; the exposure of the mother to child distress during separation and possibly during reunion and novel stimuli; clinician's modelling of maternal reflective functioning (RF) during the intervention. This intervention involves also the integration of principles of Interaction Guidance (McDonough, 1995), mentalization-based parent-infant treatments (Slade, et al., 2005) and infant –parent psychotherapy that focuses on mental representations and affects (Beebe, 2003; Lieberman, et al., 2005).

This intervention was applied in NY to 32 interpersonal violence-exposed mothers of very young children (8 to 50 months) and the authors observed a significant reduction in the degree of negativity of maternal attributions towards the child. The variable "Maternal reflective functioning" the mother's capacity to think about mental states in herself and her child, accounted for 11% of the variance in reduction of maternal negativity.

Setting and technique

The video clips are drawn from the second visit during which we film the mother-child interaction paradigm. Four selected short excerpts (30-40") from videotaped mother-child interactions are viewed jointly by parent and clinician. The four excerpts alternate likely positively regarded moments (i.e. free-play and reunion) with likely stressful moments (i.e. separation and novel or otherwise distressing moments) in the following order: .

a) an optimal moment in order to establish a positive, supportive frame by showing the most joyful, contingent, and mutually responsive moment during mother-child play;

b) a moment of separation (when mother is not in the playroom) to focus the mother and therapist's attention on a situation that exposes traumatized mothers to avoided mental states of helplessness, distress, and perceived loss of protection.

c) a moment of reunion (when mother returns)

d) novel stimuli (clown and scary toys).

Following each excerpt, in order to stimulate maternal reflective functioning and evaluate changes therein, the mother is asked to think about what she and her child might be thinking or feeling in these four different moments.

We will now present a clinical vignette both to illustrate how the CAVES works and also the kind of mental representations that are elicited through the WMCI before and after the intervention.

MRS O AND HER SON SAM

Ms. O, a 25-year-old West African mother recruited from a domestic violence program participated in our study with her 15 month-old son, Sam. With only an elementary school education, and no vocational training, she worked as a cleaning lady in her native country until moving to Switzerland, where she is unemployed. She describes a long list of traumatic life-events dating back as far as she can recall, including intrafamilial sexual abuse and witnessing domestic violence. Her exposure to violence continued chronically through adolescence, into the present. She most recently reported involvement with a violent, cocaine-abusing partner, who is Sam's father. He beat Ms O countless times since they met less than a year prior to Sam's conception. Ms. O and Sam live in an anonymous domestic violence shelter to this day.

Maternal representations pre CAVES

During the interview that explored Ms. O's mental representations of Sam and her relationship with him via the Working Model of the Child Interview (WMCI), Ms. O described Sam first in negative terms, saying, "he doesn't like it when I scream, he hits me and I have no other choice than to hit him back—and then he continues to hit me!". For Ms. O, Sam's behavior is clearly difficult to manage. Why? Ms. O stated that when Sam hits, he frightens her because he reminds her of his father. She said, "He makes me think of his dad. When I see him do certain things, I am afraid of how he'll be when he grows up." She observed Sam's "violence" when he was only 10 months-old and she tried to set limits with his mischief. "You know what he did ? she remarked angrily, "He butted me with his head.." On further questioning, it is not clear in Ms.O's mind if he did this deliberately or if he flailed while distressed and, arching his back, hit her with his head accidentally.

Ms. O further described that when Sam acts "difficult" like that, she picks him up and throws him on the bed. "It's the only way I can get him to understand that I don't like his behavior!" she added. And when Sam cries at that point, Ms O, who says that she does not like it when babies cry, picks him up and hugs him. Ms. O

above all stressed that Sam, as far as she can see, understands nothing and will not until he acquires more language.

Apart from that, Ms. O described Sam as « nice » like her maternal grandmother and « lively » like her. These positive aspects in her mental representation, which we think are precious indicators of hope, turn to unrealistic expectations when Ms. O states that « Sam wasn't born for nothing, he was born to guide me on my journey in life, the journey that led me here to Geneva ! »

Maternal mentalization

Here we see that Ms. O attributes power and control to Sam and how much she avoids his dependent and vulnerable side (i.e. his need for attachment, his need for connection, his separation anxiety). Relationally, we observe the incoherent nature of her narrative, the many contradictions—at once, her child is to « guide her on her journey », clearly a role-reversal and a loss of intergenerational boundaries. And at the same time, she describes her child as domineering and abusive like his violent father. We evaluate this maternal response to contrasting behaviors of this child in terms of mentalization and can easily see that Ms. O tends to describe everything in terms of action and virtually never in terms of mental states that might motivate the action. This language-delayed toddler who "understands nothing" because he cannot yet speak, seems by mother's description to lack a mind of his own.

Intervention (CAVES)

Before showing video clips, when the clinician asked Ms. O what she remembered was most difficult about the interaction during Visit 2 with her child, she responded: "When he banged on the door." In fact, Sam, during this separation, did cry audibly while Ms. O was just behind the door; but never actually became so agitated that he banged on it. Hence, there is a disparity between what Ms. O remembers and what is recorded on the video. Here the clinician will explore Ms. O's experience while waiting behind the door and listening and will then confront this disparity of what Ms. O remembers of these experiences without a prompt vs. what she perceives with the prompting of the videofeedback. This part of the CAVES addresses the question of how does the child's distress during separation affect this traumatized mother. For the purposes of this article, we will jump immediately to this disparity by describing the videofeedback of the separation moment. However, readers should keep in mind that by that time, the clinician had already consolidated an alliance with the subject through the joint viewing of the optimal moment which in this case involved a mutual exchange of positive affect even though Ms. O stated that she could not imagine what Sam was really feeling.

Clip 1: moment of separation

Mother and child are playing. After a cuing knock at the door, mother gets up and goes towards the door to step out. On her way, she says softly, "I'll be right back." Sam runs towards the door. He displays extreme distress (i.e. sobbing, coughing, gasping). He never leaves the door during the entire period of separation (3') and cries incessantly..

C: What happened in the excerpt we just saw ?

M: I see that a child always needs his mother. One always needs that with which one is familiar. Parents cannot leave their children without telling them. Perhaps if one...if I had explained to him before leaving, he would have waited. I don't know… if he understood.

C: Did you say something to him ?

M: No !

C: But you did say something to him just before you left…

M: It's the closed door that scared him…it's that I abandoned him.

C: You think that he thinks at that moment that you abandoned him ?

M: Yes

C: From what you said, I am not sure if it is that you think that it is only he who thinks that, or that you also believe that you abandoned him?

M: Both.

We see here how this mother has trouble putting her toddler's distress into the context of the present time and space. She is unable to differentiate between what an adult and a toddler are able to understand and thus to regulate her own and her child's emotional state. When Ms. O is confronted with the avoided helplessness associated with this observation, she becomes disorganized in her narrative. She uses impersonal pronouns for child and self. She says, "A child always needs his mother…" which shows a confusion of self and son and other children. More specifically, when she says "One always needs those whom one knows.", we note that she doesn't differentiate her own sense of helplessness and her son's.

The two following excerpts focus on the mother's reading of Sam's communication and her understanding of the response she offered versus the response she would have liked to have offered.

Clip 2: moment of reunion

Mother enters the room and heads toward a chair saying, « Come along ! » As soon as he sees his mother, Sam turns his back towards her and stays immobile in front of the toys. Seated in the chair, mother spreads her arms to invite Sam to come to her. He first watches from a distance, then approaches her, and starts to cry. Once he has gotten up on her lap, she wipes his nose and face roughly with a tissue before she hugs him. His sobs stop for a moment and then she again wipes his face brusquely while watching him. However, Sam stares out into space, towards the toys, away from mother. His sobbing starts again, less intensively. This time, his mother plugs his mouth with a pacifier. She rocks him and presses him close in a tight embrace. His tears stop.

C: What happened there ?

M: I was eager to come back into the room and pick him up. And when I came in, I saw that he was angry when I was calling him to come over. And then I felt that when he came to me, the way he was crying was like he was asking me a question : « Why did you leave me like that ? » and even that he was scolding me.

C: What made you think he was scolding you ?

M: The way he was crying....

C: How did you find his crying?

M: He was getting back at me

[..]

C: You wanted to reassure him. You were feeling how then?

M: Me, I felt bad.

T: Explain that a bit.

M: Because he does not understand anything of what we were doing there. I can't explain to him so that he understands and so he could calm down. Me, I don't like it when children cry.

[..]

C: Why do you think I chose this excerpt?

M: To show a child who… I don't know…

C : Go ahead, I can see that you have something on your mind.

M: Children, they always need to be reassured. There always has to be someone who is close enough to accompany him.

In the videotaped interactions, we put mothers into situations in which they must respond to the toddler's distress. And it is this, the heart of the question : What effect do negatively valenced, highly aroused emotions communicated by infants and young children have on traumatized mothers ? And what effect does mother's response to child distress, in turn have on the child?

In response to the first question, numerous points of incoherence and confusion are revealed by mother's narrative. Sam's distress makes Ms. O feel « bad », uncomfortable physically. The perspectives of self and other become indiscernible from one another. As such, maternal reflective functioning cannot serve to help regulate Ms. O's distress nor help her help regulate Sam's. Moreover, Ms. O as many similarly traumatized mothers that participated in the New York studies, interprets Sam's distress as angry and hostile and puts Sam in a position of menacing authority (« he was scolding me ») with herself in a helpless role. In response, Sam first avoids his mother and then submits to her efforts to comfort him—not without some intrusive nosewiping, and all the time while avoiding looking at each other directly. Sam stops crying but remains sullen and tense. Maternal regulation of his negative state is not apparent..

Clip 3: novel stimuli

The clinician enters with various scary toys : a dinosaur robot, a rubber snake, and a furry spider. Mother is sitting on the floor with her son sitting up on her lap. With a playful tone to his voice, the clinician speaks of the toys as her "friends" who do odd things but are nonetheless friendly and harmless. She then shows the dinosaur robot that moves towards the child while making roaring sounds and opening its mouth by remote-control. The child frozen with fear, carefully watches the robot advance toward him. He remains visibly tense but does not cry. His mother chuckles and then displays a big smile. The child moves closer to his mother, nervously pulling in his feet so as to avoid any possible contact with the robot. The clinician stops the robot and pets it on the head gently, inviting the child to do the same. The child watches vigilantly but keeps his hands close to his body. His mother tries to take his hand and move it toward the dinosaur robot but Sam startles, then tenses up further. Mother does not insist. She continues to smile uninterruptedly while watching the robot.

C: What just happened in what you saw ? What did you see?

M: I saw that what was shown to him, he did not like…

C: And you, do you remember what you were feeling when you had Sam on your lap then as the dinosaur was coming towards him?

M: I was happy that he sees all those toys… and I was disappointed because they did not interest him.

C: And about Sam, what do you think he was feeling when he saw the dinosaur approaching?

M: He was afraid.

C: What do you think frightened him then?

M: I saw that he pulled in his feet… towards me… and the thing kept coming…

We see that Ms. O identifies for the first time that Sam was afraid based on his avoidant behavior. This signifies a heightened level—perhaps progress within the session given the three clips preceding, of her reading of Sam's affective communication as well as of his likely feelings of helplessness and vulnerability.

Maternal representations post CAVES

These small changes are of fleeting nature as illustrate her responses during the WMCI interview, immediately after the CAVES.

C : You said you think that Sam is not afraid of anything ?

M : Sam is not afraid of anything at all!

C : But in the clip that we just saw, you said that Sam was afraid of the dinosaur robot and that you were a bit disappointed…

M : Yes… yes, he was afraid of the dinosaur in that moment, he was… or maybe… he just found it strange ?

We thus see how Ms. O made rather fragile progress that is not sustained within this single session. It would take more work over multiple sessions of clinician-assisted exposure to avoided affects to understand what blocks Ms. O's capacity to continue to view her child with this level of sensitivity.

When we investigate which aspects of Sam are the most difficult for the Ms O, it is clearly Sam's dependence on his mother and his continuous bids for her attention that she finds difficult to manage. She states, "I tell him: Live your life and let me live mine!" Clearly, this is something one would say to a parent, partner, or peer, but not to one's 1 1/2 year-old child. But with his needs, his demands, and the emotions and arousal that he cannot yet himself regulate, Sam, much as for the 60% of mothers in the New York clinical sample, represents a major life-stress and a menace to his mother as shown further by the following exchange:

C : [When he cries like that]… what do you feel like doing in those moments… when he interrupts you in the middle of doing something you need to get done ?

M : I want to smack him!! (Mother laughs)

C : Does he know that you don't like it when he acts that way that you described ?

M : Sure he knows because he always does the same thing over and over.

C : Why do you think he does it over and over ?

M : 'Cause he couldn't care less about me ! (Mother smiles)

C : What do you think is going on in his mind then?

M : He's like: "You can't do anything… you are small and weak. I'll do what I want!" (Mother smiles)

There is clearly a reversal of parent-child roles that creates confusion—some would call a projective psychological defense, in the above exchange when Ms. O states reports in response to being asked what is going on in her child's mind, that he speaks of her as "small and weak"! At the point, Sam who was playing in another room during the interview comes back and we see before us a little boy of 20 months who walks clumsily and approaches his mother looking for comfort and his pacifier. With this stark contrast between our point of view and that of Ms. O already crystal clear, she adds just then: « When he grows up, I think I am going to end up taking a few slaps in the face."

Conclusions

The goals of the program of research discussed in this article are (a) to understand how normative child distress with its component negative emotions, hyperarousal, and helpless state of mind affects the minds and bodies of traumatized caregivers; (b) how then these caregivers read child affective communication and respond to their children ; (c) how these responses affect their child during this formative period of social and emotional development (below age 5).

Our results from prior research in New York and preliminary findings from our current study in Geneva support the need for the development of specific interventions to help traumatized caregivers confront safely that which they try so hard to avoid: the affects and memories that are associated with the caregiver's experience of interpersonal violence. We are working on the development of such interventions also to support, to elicit and to model the caregiver's capacity to jointly attend to child interactive behavior and the mental states that motivate such behavior (i..e parental reflective functioning), with the aim of repairing ruptures in mutual emotion regulation.

Towards this end, we want to carry forward what we observe to be the connection of a very specific error in the reading of child distress : the mistaking of helplessness and fear for rage and willfulness. We think that this specific alexithymic error is particularly salient to IPV-PTSD as opposed to other forms of parental psychopathology that impact the parent-child relationship.

Finally, we are currently manualizing a CAVES-based intervention consisting of at least six to ten sessions. Subsequent research will examine whether observed effects on maternal representations as signaled by her attributions towards her child are sustained and what dosage of frequency as well as whether such changes correspond to measurable changes in caregiver's reflective functioning, her behavioral response to child distress and the child's behavioral outcome.

We do not assume that such an intervention specifically for high risk and for intergeneration violent trauma parenting replace a deeper, more comprehensive long term child-parent psychotherapy that relies mainly on in vivo use of words and behavioral observation. Therefore we consider the CAVES to be a potential catalyst or jumpstart to further and deeper psychotherapeutic treatment. We do think that, based on our experience with highly traumatized often dissociative caregivers and their young children, such caregivers must first be able to attend jointly with the therapist to avoided affects and child behaviors that elicit those affects before they can enter into a deeper psychotherapeutic process that will result in meaningful change in interactive behavior at a pace that can match the child's developmental needs.

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