Early Traumatic Events & Implications for the Development of Emotional Connection: Two Case Studies Using Trauma Play Therapy with Children

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Abstract: In the last few decades, attachment theory has been embraced by a large scientific community in order to find a scientific explanation for secure and insecure attachment behaviors. This article aims to illustrate the importance of the early psychological context in which a prenate and infant develops interactions with the caregiver. Two case vignettes illustrate this way of looking at behavioral difficulties and show how prenatal and birth representations appeared during therapy sessions and were contained and expressed through trauma play therapy with the children.

Keywords: early experience, attachment, brain, early memory, implicit memory, trauma play therapy

An impressive body of research illustrates the neurobiological mechanisms of attachment as well as the importance of attachment patterns in shaping a person's future relationships. In most cases, attachment patterns were studied by researchers as psychological sequences that develop after birth. Today, birth is still widely seen as the first stage of life, and for that reason certain emotional behaviors are not linked to pregnancy, despite the existence of studies that highlight the maturation of some areas in the limbic system of the brain prior to birth (LeDoux, 1996; Joseph, 1999; Ulfig et al., 2003).

Attachment behavior patterns and the brain have also been studied. Some researchers (Joseph, 1999; Schore, 2002; Coan, 2008) concluded that attachment is the outcome of the interaction between an infant's genetic predisposition and the emotional environment offered by the caregiver—a biological and psychological attunement between the caregiver and

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child. Authors have also claimed that a history of poor or traumatic interactions could produce lasting states that become traits if the infant is not exposed to at least one secure attachment figure in order to mitigate the dysregulation (Stern, 2000; Schore, 2001, 2002; Coan, 2008). In the neurobiological model, the origin of attachment is a mutual relationship between the caregiver and the infant that creates further mutual attunement, together with specific neural pathways in different parts of the brain. A recent study using electroencephalography (EEG) to monitor mother-infant interactions concluded that parenting style might contribute to brain development in the first two years of life (Bernie et al., 2016). These first two years of life are essential for developing secure attachment, with both the parents and the infant involved in emotional communication that satisfies the infant's biological predisposition for parental care (Schore, 2002).

The concept of attachment has more recently been extended to the prenatal period. Although in this period "attachment" is not described in its original, theoretical sense, Brandon et al. (2009) agreed that the goal of this mother-prenate early interaction is to provide security, established in the maternal feeling of responsibility for the prenate. Thus, prenatal attachment is a combination of factors (i.e., maternal representation of the prenate, interaction with the prenate) that in a strict sense are rooted in the mother's personality and attitudes (Condon, 1993; Brandon et al., 2009).

The Importance of Early Development

Development of the First Areas of the Brain

In the last months of pregnancy, the prenate's brain develops at a tremendous rate, with close to a quarter of a million brain cells being created every minute at the height of this process. As studies in neurobiology attested decades ago, the rapid growth of the brain begins in the third trimester of pregnancy from 28-34 gestational weeks (Dobbing & Sands, 1973). Specific areas of the brain such as the amygdala (a small region that regulates emotions), which has some degree of maturity at birth (Joseph, 1999; Ulfig et al., 2003), are stimulated throughout pregnancy by environmental influences, such as dominant maternal emotional patterns (Buss et al., 2012). Schore (2001) suggested that specific somatosensory connections into the prenate's amygdala also form by the end of the first two months after birth, due to the fact that the olfactory and gustatory systems connect into the amygdala prenatally. In the third trimester of pregnancy and through the first two months of life after birth, the central and medial nuclei and other areas of the amygdala are in a critical period of maturation (Schore, 2001). The amygdala reaches a high degree of maturity in the eighth gestational month (Ulfig et al., 2003). This helps the infant to recognize and make a connection to

the mother after birth and suggests that traumatic events occurring during the last trimester of pregnancy might have an influence on the child's emotional brain (Schore & Schore, 2007).

In this context, Joseph (1999) addresses how the amygdala, and other parts of the limbic system directly related to it, are "experience expectant," which indicates they require interaction to develop in a normal way. The amygdala is also responsible for fear memory; this discovery led LeDoux (1996) to conclude that from three months after conception, many of the physical body states of the prenate and infant triggered by threatening situations concur in shaping the development of the amygdala, together with the perceptual contexts that accompanied those states. This demonstrates how the amygdala connects with the proprioceptive system, which is related to the brain stem and most probably connects to the hearing system, as long as the sense of hearing is available before birth (Hepper & Shahidullah, 1994).

The prenate lives in a stimulating environment of vibrations, sounds, and motions that interfere with its capacity to perceive individual sounds. Therefore, the amygdala may have a fundamental role in the acquisition of the perceptual context that has to do with threatening experiences (LeDoux, 1996) or other emotional experiences that engage human interaction; this clarifies in part some of the aspects of memory in the prenatal period and habituation (DeCasper & Fiver, 1980; Hepper, 1996; Dirix et al., 2009). Moreover, Lemche et al. (2006) attest that the amygdala mediates autonomic activity and is associated with insecure attachment in humans by examining the neural basis for human attachment using event-related functional magnetic resonance imaging (fMRI).

Experiences structure how human functions respond in accordance; thus, the prenate is also receptive to the experience (Radtke et al., 2011; Monk et al., 2012; Buss et al., 2012; Cao-Lei et al., 2014). Although the prenate's first neuronal functions receive the surroundings, their blood receives a vast quantity of hormones and other informational molecules from the mother (Wadhva, 2005; Field et al., 2006; Li et al., 2010; Buss et al., 2012). The prenatal environment and the postnatal early environment, where early life experiences occur, are associated with epigenetic variations for neurodevelopment of the infant that have implications for future behaviors and risk of psychopathology (Kundakovic & Champagne, 2015). Genes contain all the information that is needed for the brain to develop its general structure and experience "decides" in part which genes are activated to enable production of the proteins for neural growth and new synapses. In addition, recent studies have introduced the idea that the intrauterine environment triggers mechanisms at the cellular level of the brain, which leads to acquired "behaviors" that possibly persist in childhood (Wadhva, 2005; Oberlander et al., 2008; Li et al., 2010; Radtke et al., 2011; Monk et al., 2012).

One of the first studies on the importance of the intrauterine environment in the development of the human brain concluded that a high

level of maternal cortisol in the early gestational stage was associated with a larger right amygdala volume in girls (associated with more emotional problems) but not in boys (Buss et al., 2012). This sex difference could be an explanation that the same environmental cue is not associated with the same outcome in boys and girls.

In the same area of study, there is research that shows maternal hormones play a role in the fetal neurodevelopment model (Wadhva, 2005), involving recognition, memory, or habituation. Also, in a study on depressed mothers, Field et al. (2006) concluded that elevated prenatal maternal cortisol is a stronger predictor for fetal prenatal growth, prematurity, and low birthweight. Further, Field argues that the biochemical and physiological profile of newborn babies resembles their mothers' profile. Another study found high levels of stress reported by mothers between 12 to 22 weeks of pregnancy is related with the baby's outcomes, such as greater likelihood of developing ADHD (Van den Bergh & Marcoen, 2004). Moreover, boys' ADHD symptoms in childhood were also related to prenatal maternal bereavement in a national study in Denmark (Li et al., 2010). All of these studies shed light on the importance of studying critical periods in the psychological development of the child, such as maternal traumatic events, the importance of the long-term emotional reactions of the mother, and the connections that are developed during pregnancy.

The thoughts and emotional states of the mother related to pregnancy and motherhood are also important factors in the prenatal mother-child relationship. It was indicated that especially maternal depression and anxiety during pregnancy disrupts the child's emotional health and can lead to behavioral problems (de Bruijn et al., 2009).

Presence or Absence of Somatic Signals and Implicit Memory

In terms of memory, there is a current understanding that the brain operates in two different systems (Schacter & Tulving, 1994): the implicit memory system (procedural) that helps us to detect safe and threatening situations, and where nonverbal habits or behaviors are found, and the explicit memory system (declarative) that requires verbalization, structured to remember things consciously. At a neurological level, the basal ganglia, cerebellum, and amygdala correspond to implicit memory, while the temporal lobe, hippocampus, and connected cortical structures correspond to explicit memory (Kandel, 1999). The amygdala is involved in explicit and implicit long-term memory of emotional events, although it needs time for those memories to be "set" for a long period of time (Phelps, 2004; Phelps & LeDoux, 2005). Implicit memory may well be linked with the right hemisphere and be emotional and body based (Schore, 2001; Schore & Schore, 2007); for that reason, most of the time it is hard to have a verbal expression of implicit memories.

Kandel (1999) preferred the phrase "procedural memory," arguing that during the first two years of life, when interactions between the infant and the caregiver are important for the development of attachment behaviors, the infant's memory is procedural, as declarative memory develops later. Infantile amnesia, the inability for humans and other mammals to retrieve early episodic memories, presumably occurs not because of the powerful repression of memories as classical psychoanalysis states, but rather due to slow development of the declarative memory system (Clyman, 1991). Kandel (1999) stated that in the study of early development, neuronal maturation is inevitably linked with critical periods, during which the interaction between the infant and the responsive environment is key in developing the brain. This interaction between genes and environment, and between early experience and brain structures during critical periods, enables developing neural circuits, synaptic connections, and brain-body connection. The preverbal experience of attachment is recorded as implicit memory, bodily- and emotionally-based, with presumptively deeper roots in the prenatal stage of life.

In the first years after birth, memory functions in an implicit manner, as the infant is in a preverbal stage of life and is deeply connected with the caregiver and with other environmental factors impacting their life. For example, babies recognize in an implicit manner that their crying—which has an emotional distress background—is a call for the caregiver's presence. The caregiver will use nonverbal communication such as touching, smiling, and modulation of their body postures and voice tone in in response to their baby's signals.

If the baby is deprived of the caregiver's attuned responsiveness over a long period of time, this represents "stressful information" for the baby and for the developmental patterns of neuronal circuitry (Schore, 2002; Hofer, 2006). In support of the connection between a caregiver's responsiveness and developmental patterns, Coan (2008) recognized that the amygdala plays an important role in the consolidation of significant information about the interaction between the attachment figure and the child during emotionally salient situations when describing the neurobiological model of attachment.

Early Postnatal Influences

It is well known in literature on mother-infant dynamics that the early relationship between the caregiver and the child shapes how the child sees themselves and others. These dynamics further support the development of other competencies, by strengthening or weakening the child's social abilities and autonomy. The principal means of intergenerational transmission of attachment style is the internalization of perceived models (Bowlby, 1999). These models shape the child's beliefs and expectations regarding others and therefore have a considerable effect on

future relationships (Sette et al., 2015). When the child-caregiver relationship is severely undermined, the child will develop an insecure attachment, become more easily distressed, and have difficulties relating to others (Cook et al., 2005).

One example of an infant's early traumatic experience that can potentially affect the child's future attachment pattern is admission into the neonatal intensive care unit (NICU) as a newborn, where contact with the mother can be absent or severely limited. This experience can be disruptive in the development of emotional relationships. Two separate studies by Maroney (2003) and Pennestri et al. (2015) suggest that children who spend a certain amount of time in an incubator develop a more disorganized attachment after 36 months in comparison to children who did not share this experience.

An aggregate of aversive postnatal circumstances combined with disruptive attachment patterns can lead to early cumulative trauma, defined by various psychological symptoms. Cumulative trauma is more enduring in adulthood if the circumstances that lead to the traumatic aggregation are established in early childhood (Cloitre et al., 2009).

The Role of Creative Therapies in Trauma Treatment

Often the role of a creative therapist is to offer a safe way to contain traumatic experiences and relieve emotional tension through creative expression. The main argument of this approach is that the subjective traumatic experiences are encoded in sensations that are inaccessible through verbal expression, regardless of age (Lieberman et al., 2007).

Creative therapeutic methods use symbolic imagery that goes beyond verbalization and provide a meta-verbal approach. During the intervention, the child is encouraged to anchor the traumatic sensations in symbols and learns to find meaning for them. The following translations of symbols in linguistic expression can facilitate cognitive restructuring as a result (Coleman & Macintosh, 2015). Creative therapies stimulate the externalization of traumatic thoughts in a safe context, encourage sensory processing of traumatic memories, and help clients manage painful feelings and emotions. In addition, treatment provides children with a way to test new modalities to handle difficult life experiences (Blignaut-van Westrhenen et al., 2017).

Replaying the traumatic experiences of early childhood through creative interventions can strengthen the parent-child relationship and restore healthy attachments. Creative activities can be manifested without verbal expression and have the potential to create effective relational patterns (Van der Kolk, 2015).

Case Studies

In our area of expertise, we have found particular issues related to mother-child interactions, which support the idea that early interaction prior to the development of attachment represents a starting point for the development of later emotional interaction between a mother and her child. Prenatal conditions, birth, and postnatal conditions in the first months after birth (type of mother-infant interaction, maternal emotional availability, maternal emotional condition and wishes, etc.), may be identified as an assembly of factors—along with genetics and epigenetics (Li et al., 2010; Radtke et al., 2011; Monk et al., 2012; Bókkon et al., 2014), which illustrate the role of precursors of attachment. Although the intent is to not speculate about all factors involved, the focus on two case studies seems to confirm the latest research in this area. Furthermore, the case studies illuminate the hypothesis that psychological factors before and after the birth play a large role in the caregiver-child interaction and in some cases are indicators for later diagnoses.

The following two case vignettes illustrate how prenatal and birth representations appeared during the therapy sessions and could be contained and expressed through the imaginative approach. We show how the therapist offers certain hypotheses to the child in the course of the session. We are particularly interested in how those hypotheses appeal to a pattern of implicit memories, with the expectation that the child will start to express them in their play. For protection of the persons in the following case vignettes, names and places have been changed.

Nino and the Hunter (8 years old)

The first sequence consisted of two sessions. Nino was 3 years old. Nino's mother first asked for a session due to Nino's emotional disturbances. Two sessions were conducted with Nino's mother only, with a focus on advice about child-raising issues and behavioral therapy measures. The second sequence consisted of six sessions, 5 years later when Nino was 8 years old: four sessions within a period of 6 months conducted with Nino and his mother, one session only with both of Nino's parents, and a concluding session with Nino, his brother, and his mother. At the end, we had a follow-up conversation between the therapist and Nino's parents a year later.

In the first session, 3-year-old Nino was diagnosed with insecure attachment. His mother had difficulties interacting with him in his first year of life and very superficial bonding was established. After two sessions and noticeable improvement for mother and child, no other sessions were held. With the first telephone call in the second sequence, it was immediately apparent that Nino's mother was under a great deal of pressure. In the previous 6 months, the intensity of Nino's emotional disturbances at home had again increased strongly; Nino was now eight

years old. A child psychiatrist had diagnosed hyperactivity disorder (ICD-10 diagnosis code F90.0; World Health Organization, 1992). Nino had told his teacher that he and his mother screamed at each other and that she hit him. In this context, Nino's father had frightened her by saying that if she did not instantly become a "better mother" instead of passively having a "good cry" at a psychotherapist's office, the children would be taken away from her.

The therapist could have once again addressed the current psychological issue and discovered that the boy had an insecure attachment style. However, from the previous assessment, the therapist concluded that the woman was a competent parent with many resources who had already tried a plethora of things in order to deal with her child's emotional behaviors. Up until now, she had not been able to determine a cause of Nino's disruptive behaviors. Therefore, she decided to try to gain a better understanding of the earliest experiences.

From the personal case history, it was known that during the pregnancy with Nino, his mother was very happy. There had been no subjective or objective difficulties of any kind. Due to her doctor's assessment of a possible narrow maternal pelvis, a caesarean section had been planned. This was also the case for her first-born son, Nino's older brother. The operation was performed without complications two weeks prior to Nino's due date. The therapist paid very close attention to the mother's descriptions of this earliest time from the mother's perspective, particularly her choice of words, so that it would be possible to return to them later in the therapy process.

Nino's mother went on to say that Nino had cried excessively from birth; she felt it was out of "frustration and confusion." He also slept only two hours at a time and startled from sleep again and again (see Papousek, 2004, on disorders of regulation).

We turn now to the four sessions in the second sequence with Nino and his mother. Nino's father could not manage to attend for work-related reasons, but he now started to support the mother in seeking help from the therapist. As soon as the therapist asked about the case history, Nino's mother said that she had found the pregnancy very difficult. She and Nino's father had been living abroad for professional reasons, and she had felt very lonely and extremely anxious. Despite using birth control, she became pregnant with Nino when they were still abroad, but she noticed the pregnancy only in the third month.

The therapist then asked Nino's mother to describe her caesarean section with Nino. She reported that she had been elated during the delivery and that Nino's father had filmed the operation. She spoke in a rush, chatting away. The therapist, alarmed by her own rising nervousness, slowed things down. Nino's mother said, the baby boy was there, and she heard his soft crying. The therapist repeated, intuitively, "his soft crying." Nino's mother continued in a rush. Overjoyed, she had a chance to see her son briefly. The therapist sought eye contact with the mother. The mother

paused for a moment, looked at the therapist with a blank stare for just a second, and then, laughing, told the therapist that Nino had been lightly scratched on his forehead by the scalpel. It had bled slightly.

The therapist asked Nino's mother to share this story again, slowly. Nino's mother was able to put this memory sequence into words, signaled by her physical signs of stress. The therapist also perceived Nino's mother's distress in her own physical reaction to the story. Through the course of play therapy sequences with the child, the therapist developed a hypothesis for the original pattern of Nino's aggressive outbursts—his injury sustained during his birth. Nino's outbursts were triggering for the parents; in their powerlessness, the parents unfortunately resorted to violence, challenging their family life and posing a serious threat to the family (child endangerment report).

In the first joint session, 8-year-old Nino arrived with his stuffed animal, a lion, which the therapist also greeted. Establishing contact was easy. Nino soon told the therapist that he and his lion often became very angry and that was why he had to come to the therapist. He said he flipped out about nothing and destroyed things, even things that were important to him. He then turned away and hid behind his mother. The therapist carefully brought up his shame. Nino slowly turned his head toward the therapist and looked her directly in the eye as she explained to him that she knew several children who struggled with this difficulty. Nino wanted to know how they were doing now, and the therapist assured him that some of them had been able to conquer their anger. Nino gave her a curious and skeptical look. He said his anger was very big, and he ran from one corner of the room to the other to show how giant his anger was.

The therapist asked him to build a fort. Between two piles of pillows Nino made a tunnel. The entrance and exit had to be closed and he instructed his mother and therapist to place a blanket over them. Lying under the mountain of pillows, Nino made loud, smacking, increasingly hoarser sounds and explained that he was a fire-spitting dragon. Then he said the dragon had to protect the whole nest from the hunter. Here he seemed more and more distressed. Nino further developed his scenario of a dragon in a cave with a hunter. The hunter figure supported the therapist's hypothesis that Nino, in a very sensitive transition in his life, had felt gravely threatened from the outside and also was in fact injured, thankfully only slightly, while everybody else—exuberant and happy—had not even noticed his distress.

The therapist sat down next to the pile of cushions and explained that, in this therapy room, the hunter was not allowed to harm the dragon. She and Nino's mother would protect the dragon. The tension in the room and in Nino's voice now let up. Guided by the prior hypothesis of the cesarean birth injury, the therapist, as is common in many trauma therapies, made a distinction between the experience in the past and the situation in the present.

At the beginning of the next session, Nino, in a fight with foam bats, showed the therapist that he had both great physical strength and great

stamina. His mother made a show of shrinking back from her son's strength, and this became a topic for comment. On his own initiative, Nino built a hut with many pillows, a tunnel, and an exit. He them laid down inside it. He said he was now very small and very weak. He was alone and abandoned. The therapist, recalling Nino's personal history, had his mother tell him how she did not even notice that she was pregnant. The therapist sat next to Nino's mother, who now cried and said that life sometimes goes too fast. This sentence made Nino laugh while in his tent. His reaction also made his mother and the therapist laugh.

The following sequence will show how the therapist put into words her hypothesis that during the Caesarean section, Nino had a stressful experience that flooded his young nervous system and left an imprint on his implicit memory. The therapist sat down next to the pile of cushions. Nino's mother joined her spontaneously. Slowly and carefully, the therapist now told a kind of trauma story, a story about another boy who was now a grown-up. The therapist explained that when this boy was small, he'd had a lot of anger inside him for a very good reason. When he was tiny, he had laid in a cave, at first alone and very small, and then he had a good telephone connection with his mother. One day, when the boy was a little bit bigger, a hunter took him out of the cave, and in doing so, injured his head with his hunting knife. Nino began to breathe more and more loudly and made noises. The tension in the room increased noticeably. Nino wanted to know how the boy was doing today. The therapist explained that the boy had now become a strong adult and could defend himself against the hunter. The wound on his head had healed quickly; it twitched a bit at times. Nino breathed heavily and explained, at first in a croaking voice but then more and more clearly, that the same exact thing had happened to him. Both his mother and the therapist responded with, "Ah, so that happened to you!" Then Nino heaved a sigh, and the tension in the room lessened.

In the third session, Nino arrived with a bandage on his foot. Both mother and son seemed sad. Two days previously, Nino and his brother had been horsing around, laughing. His mother had also been there. Suddenly it became a wild fight, and for Nino, it was about who was stronger. They both fell over, and Nino injured his foot. His mother and his brother had continued to laugh. In the therapy room, Nino wanted to build a fort with great urgency; he hectically pulled together pillows and blankets and wanted to hide quickly. The therapist then said she had learned the following about his personal history: Nino had been taken from his mother's tummy too soon for him and possibly also unexpectedly, and the surgeon had injured the small boy's head by mistake. No one had noticed Nino's pain and his fright, as they were all so overjoyed. Nino listened tensely, and the therapist heard him breathe heavily and then toss himself back and forth. He asked about it again and again. The

therapist patiently repeated sequences from her explanation. Slowly, the tension dissipated, and Nino calmed down.

Just prior to this session, the traumatic experience had been re-enacted in everyday life between Nino, his brother, and their mother (Van der Kolk, 2000). The therapist took up the thread of the trauma story from the previous session and told it neutrally, providing a description, from the outside, of what had happened during the Caesarean delivery.

Only when time was up for the session did Nino dare to come out of the cave. Once again, he was very proud and insisted on crawling out two more times, and it was important to him that the therapist could feel his strength with her arms at the tunnel exit. In the fourth session, Nino said his father was now also proud of him for daring to come out of the cave himself. He talked away wildly, as if he needed to talk himself into being courageous. He then built a "fortress" in the center of the room. As ammunition against attackers, he packed all available balls and bean bags into the hut. He then said that today the therapist had to play the part of a very terrifying, wild robber. Nino laid down inside the hut. As soon as he heard the therapist sneaking around the hut in the role of the robber, Nino exploded out of the hut gesturing wildly.

He demanded several repetitions. As the director, Nino gave the instruction that the robber had to use his hand to reach into the fort again and again. This moment was fraught with tension each time. While the therapist was trying to slow things down, she sensed Nino flinched and that his body was close to collapsing. She described his physical reaction and encouraged him to be brave. Each time, he collected himself, freed himself of the hand, jumped out of the hut and attacked the robber, who resisted a bit and then surrendered, which made Nino very pleased. Nino appeared to counter his overwhelming experience of helplessness during the caesarean section with a new experience in which he was able to fight off the intruder.

At the end of the session, the therapist—who now stopped playing her role—Nino, and his mother, celebrated Nino's victory over the robber with a beverage and a snack. Nino appeared astonished and said his anger had become smaller. He said he now knew he was strong, could defend himself, and no one could hurt his head with a knife in the future. At this point, Nino made the connection between his anger, which until then had been enormous and had caused him shame but was now smaller, and his subjective experience of the caesarean delivery and his injury by the scalpel.

In the joint session with Nino's mother and father, his father expressed personal dismay over Nino's narratives in the sessions and said that his son's experiences with the caesarean section had made him rethink medical interventions and their possible subjective impacts. In this final session, Nino showed his brother the therapy room and introduced him to the robber situation. The central element of this session was to explore who had what position and place within the family. Nino and his parents were able to help Nino bring his aggressive outbursts under

control after therapy, as well as their own. His mother wrote: "[...] Now, just a year after the last session, I am very happy to report to you that Nino and I have never again hit each other. That is the best of all for me! [...]."

Timo Discovers an Empty Land (7 years old)

The therapist first had a consultation with Timo when he was four years old. When Timo was seven years old, the therapist had two sessions with him and his mother, one session with both parents, and two sessions with the whole family, all within a period of six months.

Timo was diagnosed with "temper tantrums" at 3 years old; later, he was diagnosed with insecure attachment and adjustment disorder with disturbance of emotions and conduct by a developmental pediatrician at University Children's Hospital Zurich (ICD-10 diagnosis code F43.25; World Health Organization, 1992). He was always competing with his sister and other children. At home and at school, everyone thought Timo's anger was a personality trait. Only his mother doubted this was true, but she said she also could not explain this negative behavior.

The personal history revealed that Timo was very much a wanted child. His mother had had bleeding in the 7th week of pregnancy and was sure she had lost her baby. The physicians found one living child and spoke of a "vanishing twin." Due to premature contractions, the mother was given drugs to inhibit labor and prescribed bed rest. After discontinuation of the labor inhibitor, labor began in the 35th week of pregnancy. The baby was in a breech position and a caesarean section was performed. Due to neonatal respiratory distress syndrome, Timo stayed in the NICU for 10 days. He was not breastfed. He cried excessively, for more than six hours a day, until he was 12 months old.

Timo's mother was asked to attend the first session with Timo and to bring photographs with her from his first days of life. The therapist met a fine-limbed, thin, 7-year-old boy who seemed almost transparent. Timo peeked out skeptically from under a long blond fringe. Sitting on his mother's lap he proudly showed photographs from his time in the NICU, which everyone looked at and commented upon. He explained to the therapist that he had not gotten enough air.

Timo responded immediately to the therapist's request that he set up two dens, or caves, for himself and his absent sister, with whom he was fighting with so much, in the space on the large carpet. In one half, he put down large cushions, a fur rug, a blanket, and then a mother elephant and her child. Then he sat down against the wall and looked at the carpet, appearing more and more at a loss. Timo pointed to the side he had just set up and said it was the land of his sister. The therapist pointed inquiringly to the other. Timo jumped up in an agitated way, gathered four stuffed animal cows and placed them down in the middle of a virtual

line between his mother, who was sitting in front of the windows on the opposite side, and where he had been sitting. The border was full of holes.

By repeating what was said, addressing the panic-like state, and making comments such as, "Ah, that's how it was, and now you are safe here with us!," the therapist made contact with Timo. Assuming that he had felt very abandoned before, she was able to make a distinction between then and now (the day's therapy session), and convey to Timo that he was now safe and secure. Timo remained standing with wide eyes and looked at the empty carpet, searching for words. He said the land was leaking and that is why there was nobody there anymore; he had fallen out. His mother froze.

Trying to understand Timo's play, the therapist was guided by what the gynecologists had said to his mother when she experienced vanishing twin syndrome. The therapist viewed the two lands as the intrauterine spaces of the two twins, whereby one twin was already gone. Her hypothesis was supported by Timo's reaction of shock in his body. The therapist also addressed Timo's mother's state of shock.

Timo's mother now spoke of her memory of her fear when she lost Timo's twin, creating an implicit memory around this experience. She paused and said she now additionally felt Timo's loss/forlornness. Frantic and agitated, and with a loud, racing voice reinforcing his actions, Timo took the black stuffed animal, a horse, from the shelf, put it in the center of the second half of the carpet, and then got the white stuffed horse, identical to the black one, and a large stuffed lion. Playing and narrating, he showed how "Black Beauty" defended the white horse, so the lion could not attack the white horse again. Timo, very pale and with red spots on his face and neck, seemed exhausted. Timo recovered slowly, and the therapist began to carefully tell the story of other children who had experienced losing someone in violent storms and through wild animals. As in the therapy sessions of the first case study above, the therapist told a trauma story here about losing a twin, taking up Timo's own imagery.

In the following sessions, the therapist focused on integrating what Timo had played out. The therapist took up the trauma story of Timo's two countries, one very empty and orphaned and the other enlivened. After first focusing completely on the empty half of the carpet, where the white horse could not be brought back to life and where it was mourned, Timo's interest turned to the other half of the carpet. For himself and Black Beauty, he built a cloth tent. He said that he could now defend himself and his stuffed animal friend on his own, even against a panther. Timo then for some time demanded his parents tell him how they had seen that one country had a border full of holes and was empty.

Timo now could cope better with his emotional disturbances. He reported that his sister and the other children did not "bug" him as much anymore. Moreover, his godfather noticed that Timo had become much stronger and was more present, although he had not seen him for quite a while. Timo's emotional disturbances, initially observed when he was

three years old, and persisting later on in his social life, were repressed feelings of anger.

A recent study (Bókkon et al., 2014) on twin loss in the womb identified the impact on the surviving twin through "non-conscious, context-dependent, epigenetic changes" that might have an impact on emotional patterns in the first year of life. Our hypothesis was that part of this implicit memory of fear had now become more consciously integrated, so Timo could now give his sister more leeway, more scope of her own. In other children, and mainly in his sister, he had sought a substitute for his twin, which had led to difficulties in everyday interaction, because the others rebelled against the very close relationship that he desired. Regarding this particular issue, we are now more aware how syndromes and behaviors diagnosed early as emotional disturbances can and do cover emotional and relational problems with early roots in prenatal or perinatal experiences.

Conclusion

The descriptions of individual therapy sequences above show that early experiences, stored as implicit memories that are invoked and portrayed in the therapy sessions, can be perceived, acknowledged, and verbalized in metaphorical stories. In this way, both children and their parents can integrate their early experiences. Further research is needed to deepen our understanding of the phenomenon of stress and the many defense mechanisms in pregnancy and during birth. It would be worthwhile to conduct targeted studies on the effectiveness of trauma therapy interventions for memory patterns from the time of pregnancy and birth.

The two cases above led us as researchers to think in a more comprehensible way about the mother-child interaction, emotional disturbances of the child, and insecure attachment patterns. Some prenatal and perinatal experiences can and do create an emotional core for children's emotional disturbances, hyperactivity, and aggressive outbursts that impact the relationship between mother and child. In both cases, the child's mother was unable to contain the child's emotions and had insecure patterns of attachment herself. The importance of critical periods and traumatic events in the psychological development of the child impacts the child's early development (Phelps, 2004; Phelps & LeDoux, 2005) with consequences on neural pathways in certain area of the child's brain (Radtke et al., 2011; Monk et al., 2012).

As we mentioned, there might be a considerable number of factors beginning in the prenatal period that could influence the emotional patterns of the new baby and child. Although there is no clear evidence on the early mechanisms of fear, the precursor studies of epigenetics (Wadhva, 2005; Oberlander et al., 2008; Li et al., 2010; Radtke et al., 2011;

Monk et al., 2012; Bókkon et al., 2014) have produced new findings on psycho-physiological mechanisms that have prenatal roots. That evidence, along with our clinical observations, led us to formulate a clinical hypothesis that takes into consideration that the mother-infant attachment relationship has its foundation in critical periods before birth and early in the postnatal period.

The new disciplines of neurobiology, psychoneuroendocrinology, and epigenetics have developed new perspectives on understanding the human being and have opened up the opportunity to link the area of early emotional development to the prenatal period, the brain to the body, and the development of the brain to the environment in which it develops. Although there are many questions, future research on the development of infant attachment behaviors should take into consideration a larger context in which early environmental influences might have a role in neuro-developmental outcomes of the infant in relation with the caregiver.

The clinical and psychotherapeutic approach for early trauma should include continuous efforts to exhibit and express early experiences. The "reflective skills" of the specialist who works with trauma are important here (Steele et al., 2015). The specialist must develop and utilize the capacity to understand beneath the words, feelings, and intentions of the child, and to understand the child's needs in a larger context. Focusing on the child's somatic states may be another tool for recognizing and integrating such memories. Also, in some particular cases where there are signs of extreme emotional disturbance or some particular caregiver's actions are triggers for fear responses in the child, creating a secure therapeutic environment allows further interventions for regulating strong imprinted emotional states.

Conflicts of Interests

The authors declare that there is no conflict of interest.

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