

Intergenerational Transmission of Trauma: How the Holocaust Transmits and Affects Child Development

Michael Sapiro, M.A.¹

JFK University

Work in Progress: Copyright. Please do not cite without the author's consent.

Modern child psychology and pediatrics is in an exciting phase of growth. With fMRIs, and other advanced neurobiological technologies we have the opportunity to explore how a child develops not only from an emotional, physical, and psychological perspective, but from a neurological and biological view as well (Schoore, 2005). Child Psychologists can now study how infants respond neurologically to their environment, including to how their parents raise them (Belsky & Jaffe, 2006), and whether or not a child's genetics are affected by normative history graded influences. While this paper cannot address all the facets of neuroscience or epigenetics in connection to child development due to restrictions of space and time, this author will explore how the psychological residuals of historical trauma transmit to Holocaust survivors' children and

¹ **Michael Sapiro** has a Master's in English with a focus on social justice and feminist pedagogy and is currently working toward his Ph.D. in Clinical Psychology from JFK University in California. Michael's current clinical training is at Walden House in San Francisco working as a therapist with men from a forensic population with severe substance abuse and mental health issues. He also teaches mindfulness and relaxation at the Martinez VA to veterans with PTSD, Traumatic Brain Injury, chronic pain, and in Palliative Care. Michael's interest in forensic and correctional psychology extends into research as well as his dissertation will focus on empathic failures in the therapeutic work with violent offenders, a qualitative study. He hopes his research during his doctoral studies helps future therapists better prepare for working with underserved and oppressed populations by understanding the importance of empathy and introspection in creating authentic therapeutic relationships. He is the founding director of Maitri House Yoga, which provides education and practice around issues of spirituality, health and wellbeing from a Buddhist and Ayurvedic perspective. He is on the Board of Directors for the Institute for Spirituality and Psychology, and teaches workshops on the intersection of psychology, spirituality and social justice. Michael can be reached at mgsapir@yahoo.com and found at maitrihouseyoga.com.

grandchildren through epigenetic effects of mental experiences, and acquired parenting styles and beliefs. This paper clarifies the relationship between a parent's responses to trauma and her or his child's personality development and ability to form secure attachment bonds.

If how the parent reacts and responds to the world affects the personality development of a child (Ainsworth & Bowlby, 1991; Sullivan, 1968), or the formation of the child's bonds of attachment with a parent (Bowlby, 1969; Ainsworth et al., 1978; Stern, 1985) it follows that a mother who experienced extreme distress cause by trauma, such as the Holocaust, could transmit her psychopathology (e.g. anxiety and fear, nightmares, depression, etc) to the child by ways of anxious parental behavior and affect misattunement (Stern, 1985) and even possibly through epigenetics (Hunter, 2008). The parent who lives with anxiety and fear in a world that appears, and very much is, dangerous, possibly influences her child to develop similar psychopathology. The possibility arises for the child's brain to develop disruptions in normal neurological pathways (Watt, 2003) because of anxious parenting. From Lamarck (1809/1984) and Waddington (1942) who coined the term "epigenetics," through Stern (1985), Shore (2001, 2003, 2005, 2010) and Siegal (2001, 2003, 2007), there has been a slow but steady shift in paradigm for the scientific community on theories of child development. These theories now focus on how transmission of trauma affects child development in the specific perspectives of Epigenetics, Neuropsychology, and Attachment theory.

In order to facilitate an inquiry of the relationship between the survivors' trauma and their children's development a systematic survey has been employed on the scientific and psychological literature regarding child development, epigenetics and

Neuropsychology. This author will try to answer the following questions: (1) Does a child of Holocaust survivors, who lives in the relative and seeming safety of the American suburbs, i.e., there is no immediate threat to their safety, develop a cache of similar attitudes and cognitive conceptions of the surrounding world as that of their parents? (2) Is the child genetically predisposed to experience fear and anxiety and have unprovoked nightmares of similar traumatic experiences? (D. Jonas, personal communication, January 21, 2011).

Epigenetics

An explanation of Epigenetics and its relationship to child development is appropriate before attempting to answer the preceding questions. Epigenetics is the study of how experience modifies expressions of phenotypes and gene expressions for an individual and their offspring without changing the DNA sequence itself (Goldberg, Allis, & Bernstein, 2007). Singer (2009) writes, "In recent years, scientists have discovered that epigenetic changes--heritable changes that do not alter the sequence of DNA itself--play a major role in development, allowing genetically identical cells to develop different characteristics" (p. 1). Although the case for epigenetics can originally be found with Aristotle, French evolutionist and biologist Jean-Baptiste Lamarck (1809/1984), who created the system of inheritance of acquired characteristics known now as Lamarckism, suggested that "how we live affects our genes" and is passed on to our children. The characteristics that help an organism survive in one generation are inherited in subsequent ones (McDougall, 1927; Crew, 1936). Waddington (1942, 1953) explained how cell formation and development rests upon the metaphoric landscape of

gene development, and that cellular mutations, possibly caused by a subject's reaction to external stimuli and experiences, can affect the genetic landscape for subsequent generations.

Biologically speaking, traumas, or experiences in general, have potential for affecting cellular and genetic development of the survivor's entire lineage. As seen in the experiments by McDougall (1927) and reconfirmed by Crew (1936) rats whose parents had successfully navigated a series of mazes were able to complete the mazes themselves, compared to rats that unsuccessfully tried to complete mazes and who had no maze-finishing predecessors in their genealogy. These Lamarckian experiments demonstrated how a parent rat's ability to successfully complete mazes was genetically passed down to subsequent generations (McDougall, 1927; Crew, 1936). In relationship to child development, how a parent reacts and responds to trauma seems to become imprinted in their genetic landscape and is passed on to their children. However, as we will explore later in this paper, some researchers (Van Ijzendooren et al., 2003) argue that effects of trauma are not passed on biologically but rather from the parent's affect and behavior. Responding to the scientific debate between Nature versus Nurture is out of the scope of this paper. However, a brief overview of neuroscience is necessary to understand how interactions between a parent and a child directly influence the development of a child's brain and mind.

Neuroscience

Neuroscience explains *how* this process works. Neuroplasticity is the brain's capacity to change neural connections in response to new experiences. A new experience causes neurons to fire, and new neural pathways can be formed, potentially resulting in

an “activation of genes” (Siegel, 2007:30). If an experience is traumatic, the brain’s structural hardware rewires itself to remember, possibly altering not only the neurology but also the psychology of a survivor or a child experiencing her parent’s anxiety.

Hanson (2009) writes, “Even a single episode of major depression can reshape circuits of the brain to make future episodes more likely” (p. 65). If this is the case for a single episode of depression, what happens to the brain after a catastrophic trauma like the Holocaust, or to a child’s brain while witnessing and sensing parental stress on a daily basis? If a child witnesses reoccurring episodes of parental stress and anxiety, these episodes become RIGs or “Representations of Interactions that have been Generalized” (Stern, 1985: 97) and the child will begin to associate a negative categorical affect with the parents themselves.

Here is where the child rearing views of the Interpersonal Neurobiology network of scientists, scholars and clinicians intervene on behalf of developing children. Siegel writes, “[K]nowing how forms of communication directly shape a child’s developing brain can be essential in . . . optimiz[ing] the care of children” (Siegel, 2001:xii).

Neuropsychology reveals how trauma affects the cognition of a survivor and how they interact and communicate with their children as a result. Siegel continues, “Understanding how trauma affects the developing brain can yield insights into the subsequent impairments in memory processing and the ability to cope with stress” (2001, p.xiv). A disorganized bond of attachment can be formed if a parent experiences stress and anxiety due to trauma, and is unable to attune and communicate effectively and empathetically with her child. The child might therefore experience a dysregulation of self, or affect dysregulation (Schorer, 2010), and could decompensate because of his or

her inability to predict the parent's behavior. The relevance of neuroscience for child development becomes clear when looking at the parents' behaviors, shaped by previous traumatic experiences. If their brains, and potentially their genes, have been rewired to react to the world with anxiety and fear, these traits are then potentially passed on to the children within the parent/child relationship itself (Hanson, 2009). Bonds of attachment between child and parent can be disrupted or made insecure, leaving the child to suffer its own anxiety at her loss (Ainsworth et al., 1978; Sullivan, 1968). For decades, Attachment theorists have studied the effects of anxious parenting on child development.

Attachment Theory and Child Development Practices

Even Bowlby was interested in intergenerational transmission of pathology. Ainsworth (1991) writes of Bowlby, "His experience at the London Child Guidance Clinic convinced him of the significant role played by interaction with parents in the development of a child's personality, and of the ways in which this interaction had been influenced by a parent's early experiences with his or her own parents" (p.1). As Sullivan (1968) explained, a child is sensitive and can adapt behaviorally to a parent's anxiety, provoking a decompensation in personality and leading to relational insecurity for a child with the parent. Alternatively, if a parent understands how and why an infant responds positively to soft, soothing sensations, they can adjust their own parental behavior to encourage a secure attachment bond and growth and development occurs for the child (Stern, 1985).

Stern (1985) would suggest that cross-generational transmission of trauma occurs in the interactions between mother and child. Stern writes, "Parents can also regulate what affect category the infant will experience" (p. 103), meaning the mother, as a *self-*

regulating other for the infant, transmits her anxiety to her child through negative affect behaviors like sighs, frowns or displays of anger where the vitality affect is disturbing and unsettling to the child, thus provoking a negative hedonistic tone. Stern would also point out that parents generally parent in the ways of their predecessors, i.e., the evoked companion of the mother's mother shadows within the mother-child landscape (p. 121). While epigenetics and neurobiology open the doors of debate for Nature's influence in the transmission of trauma, child development theorists like Stern (1984) and Ainsworth (1964, 1967; Ainsworth et al., 1978) simply direct our attention to the obvious influence parents have over their child's development.

Ainsworth et al., (1978) Baltimore findings confirmed that the parental behaviors of anxious mothers directly influenced the attachment type and style of their children (Karen, 1994). Mothers who were impatient, aggressive, sullen and dull with their babies during breast feeding, play or holding time, provoked anxious and angry behavioral responses from the child, thus feeding a child's insecure attachment bond to the mother, i.e., misattunement between mother/child creates heightened internal responses for the child. Anxious parents create anxious children, who then grow up to become anxious parents again (Karen, 1994), and the cycle of pathology, first appearing as a life-sustaining and life-preserving psychological response to traumatic experiences, is transmitted cross-generationally. Karen continues to suggest that this cycle is broken when the adults can reflect about and honestly work through their own insecure attachment issues with their parents before transmitting their anxieties and fears to their own children.

Siegel and Hartzell's (2003) *Parenting from the Inside Out* teaches parents the skills necessary for such important interpersonal work and they write, "The amazing finding that the most powerful predictor of a child's attachment is the coherence of the parent's life narrative allows us to understand how to strengthen our children's attachment to us" (p. 248). Main & Hesse's (1990, 1995) research regarding the affects of parental states of mind and of unresolved parental trauma on the infant's ability to form positive attachment bonds has also been extremely influential on current attachment theories and child development practices.

Holocaust Transmission

There is an overwhelming and inexhaustible selection of literature and research on the topic of Holocaust transmission, which is divided into two distinct camps: (1) transmission of trauma adversely affects child development by passing down pathologies, and (2) the Holocaust created resilient survivors able to transmit lifesaving attitudes and beliefs to their children, thus positively affecting their child's psychological development.

Researchers on Holocaust transmission have evaluated whether or not particular psychopathologies are "passed down" to children and grandchildren (Bar-On et al., 1998; Rubenstein et al., 1989-1990; Sagi-Schwartz et al., 2008; Van Ijzendooren et al., 2003). While the attitudes, behavior and pathologies of the survivors affect the worldview of their children, there is little evidence that correlates child psychopathology with transmission of trauma (Sagi-Schwartz et al., 2008). Albeit, studies of effects from other traumas, such as the World Trade Center event in 2001 (Hoven et al., 2009), demonstrate the opposite of this finding, i.e., children whose parents were exposed to the WTC event showed an increase in clinical depression and other pathologies.

Belsky (2008) suggests that too much research has focused on the adverse affects of war and political violence on child development, while “[the] effects that, on their face, seem negative . . . may represent evolutionary adaptations, that is, outcomes that have been selected by evolutionary forces to enhance reproductive fitness” (p. 268). Sagi-Schwartz et al., (2008) argue that because the initial trauma of the survivors did not come from caretakers, “their own parents or other attachment figures,” (p. 117) the survivors were able to create relatively safe and caring environments for their own children using their own “trusted parents,” as the models. Van Ijzendooren et al., (2003) argue that issues of PTSD suffered by Holocaust survivors do not genetically pass down to their offspring. In fact, it was found that survivors and their children show remarkable resilience, which could positively affect the tertiary generation’s sense of self and security, leading to greater survival with less anxiety and fear (Bar-On et al., 1998).

Roth (2008) notes that there are subtle yet important differences in affect between survivors that shared the traumatic experience with their children versus those who remained silent and secretive. Those children whose parents shared stories of horror and trauma developed greater resilience for dealing with anxiety and fear as they developed. Frankl’s (1959) *Man’s Search for Meaning* speaks directly about how the process of shared experiences creates deep bonds and fosters resilience for those that speak as well as those who listen. As the debate over how transmission of trauma affects subsequent generations of Holocaust survivors lingers into this century it remains clear to all that the Holocaust has greatly impacted and influenced the lives of the survivors and their offspring.

Conclusion

Whether trauma transmits through genetics, neurology or interpersonal relations between parent and child, the tense debate over Nature versus nurture continues. This author as a grandchild of two Holocaust survivors remains hopeful that understanding how trauma is transmitted will help families create positive shared experiences and foster resilience for their children. When relying on the theoretical models above it becomes clear that a child who has grown up in the relative safety of the American suburbs can suffer emotional disturbances, nightmares, anxiety, fear, and anger because of experiences their grandparents had. Epigenetics lends its theory to explain how parental or familiar trauma can change and alter the genetic landscape for generations to come. Neuroscience demonstrates how the brain can be rewired after traumatic experiences to react to the world differently, thus influencing parental behavior, which in turn affects their child's personality development and attachment styles. Attachment theorists suggest that parental anxiety affects the delicate bond of attachment between parents and their children, possibly leaving the children vulnerable and insecure. And while there is little agreement between Holocaust researchers about child psychopathologies "passed down" by transmission, common knowledge dictates that children and grandchildren's worldviews are deeply affected by familiar tragedies.

A child growing up in America can dream of Nazis because their parents or grandparents have shared these memories, either through verbal transmission of the trauma, or more subtly through their parental values, behaviors and attitudes. And it doesn't take a neuroscientist or biologist to validate this claim.

References

- Ainsworth, M.D. (1964). "Patterns of attachment behaviour shown by the infant in interaction with his mother." *Merrill-Palmer Q.*, 10, 51-8.
- Ainsworth, M.D. (1967). *Infancy in Uganda: Infant Care and the Growth of Attachment*. Baltimore, Md: the Johns Hopkins Press.
- Ainsworth, M.D., Blehar, M.C., Waters, E., & Wall, S. (1978). *Patterns of Attachment: Assessed in the Strange Situation and at Home*. Hillsdale, N.J.: Lawrence Erlbaum.
- Ainsworth, M. & Bowlby, J. (1991). An Ethological Approach to Personality Development. *American Psychologist*, 46(4), 333-341.
- Anders, T. (2010). Review of *The Fate of Holocaust Memories*. *J Am Acad Child Adolesc Psychiatry* 49(4), 409-10.
- Bar-On, D., Eland, J., Kleber, R.J., Krell, R., Moore, Y., Sagi, A., et al. (1998). Multigenerational perspectives an coping with the Holocaust experience: An attachment perspective for understanding the developmental sequelae of trauma across generations. *International Journal of Behavioral Development*, 22, 315–338.
- Belsky, J. (2008). War, trauma and children's development: Observations from a modern evolutionary perspective. *International Journal of Behavioral Development*, Vol 32(4), 260-271. DOI: 10.1177/0165025408090969
- Belsky, J., & Jaffee, S. (2006). The multiple determinants of parenting. In D. Cicchetti & D. Cohen (Eds.), *Developmental Psychopathology*, 2nd Ed., Vol. 3: Risk, disorder and adaptation (pp. 38–85). NY: Wiley.
- Bowlby, J. (1969). *Attachment and loss: Vol 1. Attachment*. New York: Basic Books.
- Crew, F. (1936). A Repetition of McDougall's Lamarckian Experiment. *Journal of*

- Genetics*. Institute of Animal Genetics. Retrieved at <http://www.ias.ac.in/jarch/jgenet/33/61.pdf>
- Epstein, H. (1979). *Children of the Holocaust: Conversations with Sons and Daughters of Survivors*. New York: Penguin Books.
- Ganz, E.T. (2002). Intergenerational transmission of trauma: Grandchildren of Holocaust Survivors. Unpublished doctoral dissertation, Adelphi University, New York.
- Goldberg, A. D., Allis, C. D., & Bernstein, E. (2007). Epigenetics: A landscape takes shape. *Cell*, 128, 635-638
- Hanson, R. (2009). *Buddha's Brain: The Practical Neuroscience of Happiness, Love & Wisdom*. Oakland, CA: New Harbinger Publishing Co.
- Hoven, C., Duarte, C., Wu, P., Doan, T., Singh, N., Mandell, D., Bin, F., Teichman, Y., Teichman, M., Wicks, J., Musa, G., & Cohen, P. (2009). Parental exposure to mass violence and child mental health: The First Responder and WTC evacuee study. *Clinical Child and Family Psychology Review*, Vol 12(20), 95-112.
- Hunter, P. (2008). "What genes remember." *Prospect Magazine*, issue 146. Retrieved at <http://www.prospectmagazine.co.uk/2008/05/whatgenesremember/>
- Lamarck, J. (1809) *Zoological Philosophy*, trans. Hugh Elliot, U. Chicago Press, 1984.
- Main, M. & Hesse, E. (1990). Parent's unresolved traumatic experiences are related to infant disorganized attachment status: Is frightened and/or frightening parental behavior the linking mechanism? In M. Greenberg, D. Cicchetti, & E.M. Cummings (Eds.), *Attachment in the Preschool Years*. Chicago: UIC Press.
- McDougall, W. (1927). "An experiment for the testing of the hypothesis of Lamarck."

- Brit. J. Psychology*, 17, 267-304.
- Roth, C. (2008). *The Fate of Holocaust Memories*. New York: Palgrave MacMillan
- Rubenstein, I., Cutter, F., & Templer, D.I. (1989–1990). Multigenerational occurrence of survivor syndrome symptoms in families of Holocaust survivors. *Omega: Journal of Death and Dying*, 20, 239–244.
- Sagi-Schwartz, A, van IJzendoorn, M., & Bakermans-Kranenburg, M. (2008). Does intergenerational transmission of trauma skip a generation? No meta-analytic evidence for tertiary traumatization with third generation of Holocaust survivors. *Attachment & Human Development*, 10(2), 105-121.
- Schore, A. (2001). The effects of Early relational trauma on right brain development, affect regulation and infant mental health. *Infant Mental Health Journal*, Vol. 22(1–2), 201–269
- Schore, A. (2003). *Affect Dysregulation and Disorders of the Self*. New York: W.W. Norton and Co.
- Schore, A. (2005). Attachment, Affect Regulation, and the Developing Right Brain: Linking Developmental Neuroscience to Pediatrics. *Pediatrics in Review* 26(6), 204-217.
- Schore, A. (2010). “Relational Trauma and the Developing Right Brain: The Neurobiology of Broken Attachment Bonds” Chapter in T. Baradon (Ed.), *Relational trauma in infancy* (pp. 19-47). London: Routledge.
- Siegel, D. (2001). *The Developing Mind*. New York: Guilford Press.
- Siegel, D. & Hartzell, M. (2003). *Parenting from the Inside Out*. New York: Penguin.
- Siegel, D. (2007). *The Mindful Brain: Reflection and Attunement in the Cultivation of*

- Well-Being*. New York: W.W. Norton and Co.
- Singer, E. (2009) "A Comeback for Lamarckian Evolution" In *Technology Review*. MIT. Retrieved at <http://www.technologyreview.com/biomedicine/22061/>
- Stern, D. (1985). *The Interpersonal World of the Infant*. Basic Books, Inc.
- Sullivan, H. (1968). *The Interpersonal Theory of Psychiatry*. New York: W.W. Norton and Co.
- Tooby, J., & Cosmides, L. (1990). The past explains the present: emotional adaptations and the structure of ancestral environments. *Ethology and Sociobiology*, 11, 375–324.
- Van Ijzendoorn, M.H., Bakermans-Kranenburg, M.J., & Sagi-Schwartz, A. (2003). Are children of Holocaust survivors less well-adapted? A meta-analytic investigation of secondary traumatization. *Journal of Traumatic Stress*, 16: 459–469.
- Waddington, C.H. (1942) (1977). "The epigenotype". *Endeavour* 1: 18–20.
[doi:10.1016/0160-9327\(77\)90005-9](https://doi.org/10.1016/0160-9327(77)90005-9).
- Waddington, Conrad H. (1953). *The Epigenetics of birds*. Cambridge University Press
- Watt, D.F. (2003) *Psychotherapy in an age of neuroscience: Bridges to affective neuroscience*. IN J. Corrigan & H. Wilkinson (Eds.), *Revolutionary connections: Psychotherapy and neuroscience* (pp. 79-115). London: Karnac.