PSYCHOLOGY AND COGNITIVE SCIENCES
Openventio PUBLISHERS

ISSN 2380-727X
Open Journal
http://dx.doi.org/10.17140/PCSOJ-3-e007

Editorial

*Corresponding author
Sharon Joy Ng, MA, PhD
Professor Emerita of Psychology
Department of Psychology
Yuba Community College District
Marysville, California, USA
E-mail: sng@yccd.edu

Volume 3 : Issue 3
Article Ref. #: 1000PCSOJ3e007

Article History
Received: June 26th, 2017
Accepted: June 30th, 2017
Published: June 30th, 2017

Citation
Ng SJ. Developmental interpersonal neurobiology, attachment style and mindsight. *Psychol Cogn Sci Open J.* 2017; 3(3): e9-e13. doi: 10.17140/PCSOJ-3-e007

Developmental Interpersonal Neurobiology, Attachment Style and Mindsight

Sharon Joy Ng, MA, PhD*

Department of Psychology, Yuba Community College District, Marysville, California, USA

The importance of interrelationships cannot be overemphasized. "Human connections create the neural connections from which the mind emerges".[1(p.72)] Dan Siegel described the two basic processes that shape the developing mind, some of which are *experience-expectant* and others that are *experience-dependent*. In the former, development depends on minimal stimulation of the circuits to maintain the neurons and their connections. In the *experience-dependent* conditions, the laying down of new neural circuits is dependent upon experience. This leads to the understanding that our brain structure is altered through both the maintenance and strengthening of existing synapses, or by the experience-driven creation of new synaptic connections.[1,2]

INTERPERSONAL NEUROBIOLOGY

Recent research on epigenetics reveals that experience is the trigger that activates genes.[3] This contrasts with the earlier beliefs that genes alone determine our destiny. There are optimal times during development, called *critical periods,* when experiences are vital to the unfolding of our genetic potential. For example, we know that there is a critical period for learning language and that without experiences in communicating with others, we cannot develop this potential. Similarly, without certain forms of verbal and non-verbal communication as we develop, our brain will lack the integration of the left/right hemispheric coherency that is necessary for socially attuned and compassionate interactions.

Interestingly enough, many parents have thought that they could optimize their babies' chances in life by bombarding them with stimulating sounds, visions, etc. Yet Siegel[4] reminds us that the

> …importance of the first years may be that brain structures that mediate social and emotional functioning begin to develop during this time in a manner that appears to be dependent upon interpersonal experiences…the orbitofrontal region, central for processes such as emotion regulation, empathy, and autobiographical memory may have experience-influenced development that depends upon the nature of interpersonal communication during the early years of life. Interactions with "older people," with attachment figures, are essential during this time to create the contingent, collaborative communication necessary for the proper emotional and social development of the child….[4(p.71-73)]

Brain development is compromised when a child grows up in a stressful dysfunctional family environment or does not experience the attuned types of communication and interactions necessary for full development of the orbitofrontal region of the brain (associated with our ability to regulate emotional and social functioning). Especially in family environments where child abuse occurs, the child's sense of agency, coherence, affectivity, and even continuity (memory) of the self in interaction with others will be severely impaired. "Suboptimal attachment experiences may predispose a child to psychological vulnerability in par by altering the brain's neuroendocrine response to stress".[4(p. 77)] Toxic environments can create excessive

ISSN 2380-727X http://dx.doi.org/10.17140/PCSOJ-3-e007

stress on a child, leading to the elimination of existing synapses.

The child's sense of self is reflected in the interactions with the caregiver when those interactions are consistent and mindful. The child "feels felt" and simultaneously learns how to attune to others. This is not new to the field of developmental psychology, but the neurobiological evidence is more recent.

> With some neurological conditions, such as sensory impairment, caregivers may be especially challenged to provide the kind of connecting, collaborative communication that allows the child to "feel felt," make sense of the internal world of minds, and create the capacity for *mindsight*. In other situations, suboptimal caregiving may not have fostered the development of a coherent sense of a core or autobiographical self. We can view these situations as being the inadequate development of a coherent sense of another's mind within the mind of the child. Such interactions are "incoherent," and fail to facilitate the child's own integrative processes. The fundamental outcome of such non-integrative states can be seen as impairment in self-regulation.[4(p.87)]

Mindsight is

> ...a term coined by Dr. Dan Siegel to describe our human capacity to perceive the mind of the self and others. It is a powerful lens through which we can understand our inner lives with more clarity, integrate the brain, and enhance our relationships with others. *Mindsight* is a kind of focused attention that allows us to see the internal workings of our own minds. It helps us get ourselves off of the autopilot of ingrained behaviors and habitual responses. It lets us 'name and tame' the emotions we are experiencing, rather than being overwhelmed by them.[5]

The importance of *secure* attachment is becoming more evident as researchers learn more about *interpersonal neurobiology*. *Interpersonal neurobiology* is a term that UCLA Professor Dan Siegel[4] uses to describe how the developmental process reveals that humans have an innate need for social interactions. His research examines the effects of interpersonal interactions on the development of key areas of the brain that are involved in social interactions, assessing differences in brain physiology and structure.[1,4,6,7] This vein of research is revealing how certain types of interpersonal experiences during the early developmental years are essential to the formation of an integrated state of mind. An integrated state is associated with the ability to regulate one's emotional states, having more flexible responses, and greater complexity in behaviors. We move into the plane of possibilities rather than staying stuck in habitual reactive patterns of behavior.

Recent research findings in *interpersonal neurobiology* (documenting the biological/physiological and structural changes in the brain due to interpersonal interactions) and the *contemplative practices* (various forms of meditation) are supporting the effectiveness of meditative types of therapies, informing us that changing our behaviors, thoughts, perceptions, and reactions will subsequently lead to positive changes in our brain and well-being that indicate a more integrated state.[1,4,8,9]

ATTACHMENT

Attachment to the primary caregiver is formed early in life. Attachment and loss were described as important variables in development that could foretell the manner in which a person was able to relate with others as an adult.[10,11] There are many situations that can influence attachment style, but disruptions to the continuity, presence, and availability of the caregiver can result in what are termed attachment disorders.[4,12] Mary Ainsworth[h13] conducted the initial studies regarding attachment. The *Strange Situation* was a clinical observational study and resulted in the identification of three different attachment styles of young children: (1) *secure*, (2) *anxious/ambivalent*, and (3) *avoidant* attachment styles.

In this study, young children of various age groups were individually observed as their mothers left them in the presence of a stranger. The child's initial reactions were observed as well as the behaviors exhibited upon their mother's return to the room. Children who reacted in distressed ways when the mother left the room (e.g., crying, looking towards the door through which the mother departed) and, who later, approached the mother and allowed themselves to be held upon her return, were described as *securely attached*. *Secure* adults see themselves as liked by most people, easy to get to know, well intentioned, and good-hearted. Children who seemed somewhat disturbed when the mother left, but acted ambivalently when she returned were classified as *anxious/ambivalent.* Ambivalent behavior was described as perhaps approaching her, but simultaneously appearing to be angry by hitting or pushing her away when the mother tried to console the child. Children who appeared to show no distress upon the departure of the mother and who showed no interest in her upon her return were described as *avoidantly* attached. Avoidant individuals fear intimacy, are jealous, and experience emotional swings. The avoidant type acts as if others are not important in life.

ISSN 2380-727X http://dx.doi.org/10.17140/PCSOJ-3-e007

In the best of circumstances, a *secure attachment style* is most conducive to healthy emotional and mental wellbeing in a person. When we are in an *environment that fosters secure attachment to our caregiver(s), we develop a stable and* consistent *core self* that reflects *attuned* and collaborative communication experiences—we felt valued, appreciated, loved, seen and heard by our primary caregiver.[4] "The deepest sense of self-awareness, of core consciousness, may be profoundly influenced by early experiences in infancy even before explicit, autobiographical memory is available".[4(p.76)] Securely attached children appear to emerge from childhood with enhanced emotional flexibility, social functioning, and cognitive abilities.

DEVELOPING SECURE ATTACHMENT

According to Siegel[4], five specific types of interactions are necessary to develop the neuronal pathways, specifically in the right hemisphere that will help create a sense of *secure* attachment in children. The essential factors that he identified are: 1) Collaborative Communication; 2) Reflective Dialogue; 3) Repair; 4) Coherent Narratives; and, 5) Emotional Communication. If the communications between a child and the caregiver/parent are suboptimal, the child will likely develop an *anxious/ambivalent* or *avoidant* attachment style.

Collaborative Communication

Collaborative communication that is contingent and attuned refers to such aspects as eye contact, facial expressions, tone of voice, bodily gestures, timing and intensity of responses between the caregiver and child. One can imagine the double messages that can interfere with healthy development of a child's core consciousness when body language reflects a far different message than the words being spoken.

Resonance between the caregiver and child creates a connecting environment that supports the development of a number of domains in childhood such as social, emotional and cognitive functioning. "Such collaboration may be essential in the creation of a coherent and autobiographical sense of self".[4(p.78)]

Reflective Dialogue

Reflective dialogue—verbally sharing of a focus or internal experience of each person in a dyad—helps a child learn skills essential to mindsight. Reflective dialogue is when the parent or caregiver attempts to make sense of the signals sent by the child and then communicates this meaning. Sharing of this perceived meaning and the mental state of the caregiver involves all aspects of behavior: emotions, perceptions, thoughts, intentions, memories, ideas, beliefs, and attitudes.[4] We attune to others and then provide our own meaning to the situation. This helps our children learn the social skill of attuning to others, which helps them develop empathy. Reflecting upon the situation also helps children to make sense of their own internal experience as well.

With *mindsight*, we are aware of the content of our thoughts and how we may be reacting from past triggers rather than being in the moment. We slow down and develop the abilities to be more flexible in our responses so that we can stay in the plane of possibilities.

Repair

Repair to disruptions in a relationship is healing. When there are breaches to the relationship, the efforts towards *repair* helps children understand that misunderstandings are simply a part of interrelationships. The caregiver needs to stay engaged with the child otherwise prolonged disconnection can lead to disconnections in *collaborative communication*.

An adult's pride may at times inhibit repair and leave the child isolated in what may be a shameful state of disconnection. Intense uncomfortable emotional states in the child or parent may lead to a disconnection in collaborative communication. Prolonged disconnection, especially if combined with hostility and humiliation, can have significant negative effects on a child's developing senses of self. Providing repair of the inevitable disconnections of attuned communication can occur naturally in a setting where parents and other attachment figures generally provide consistent, predictable, reflective, intentional, and mindful caregiving.[4]

Through *collaborative communication*, a child learns to "…make sense of periods of painful disconnection and create a sense of meaning out of the understanding of one's own and another's mind".[4(p.79)] Through attuned communication, a child learns *self regulation* by reflecting upon his or her own mind's content. Additionally, this child learns more about empathic interrelating by also learning about the other person's mind. This attunement leads to healing or repair when sense is made of the disruptions and a sense of meaning is formed through the attuned communication.

ISSN 2380-727X http://dx.doi.org/10.17140/PCSOJ-3-e007

Coherent Narratives

Coherent narratives reflect an autobiographical form of self-awareness. Through co-construction of narratives, children learn this tool for living that helps them understand what is happening within their own psyche as well as others. It is interesting that the most robust predictor of a child's attachment style depends upon the nature of the parent's narrative of his or her own life. When a child's parents or caregiver has gaps in their autobiographical narratives, or whose stories lack sufficient detail to include both positive and negative events, this indicates that they too lack *mindsight* and an integrated state that would make them aware that they may be passing on the same deficiencies to their own children. They are likely to interact in ways that impede secure attachment and instead foster anxious/ambivalent attachment in their children.[4]

Emotional Communication

Emotional communication is the type of communication where positive emotional events are shared as well as negative emotional states without emotional abandonment. Children need to learn that although they or others may experience negative emotions, the relationship is such that the caregiver will stay engaged emotionally with the child.

SUMMARY

These five factors are essential for fostering *secure attachment* in children, which apparently creates an integrated mind state that is vital for interrelationship communication. Understanding the neurobiological implications of *anxious/ambivalent* or *avoidant attachment* styles can guide clinicians to form appropriate treatments that will help ameliorate the dysfunctional behaviors in interrelating while healing the underlying deficiencies in the person's experiences. Simultaneously, this can help restore the brain's capacity for fulfilling, complex, flexible and coherent states through the development of the neural connections that are a part of *mindsight*. The left hemisphere of the brain functions as the interpreter that seeks causal explanations in a linear and logical manner, while the right hemisphere mediates *autonoetic* consciousness (defined as relating to or characterized by the capacity to be aware of one's own existence as an entity in time), and the retrieval of autobiographical memory. Coherent narratives are proposed to be a product of left and right hemispheric processes.

Neurological deficiencies believed to be associated with those who have either *anxious/ambivalent attachment styles* or *avoidant attachment styles* are not terminal. The prognosis for healing and developing those areas of the brain that allow us to attune with others is good news for those suffering from dysfunctional interpersonal relating. We are finding that in regards to this deficiency, the plasticity of the brain allows for the creation of new neuronal connections and neural nets that are associated with better regulation of emotions and the ability to attune to others. Therapy that focuses on developing *mindsight* skills changes the physiology within the brain allowing for better emotional regulation and more attuned communications.

As we are learning, the brain's plasticity is not limited to our early developmental years, but extends throughout our lives. As an adult, through *mindsight* therapy, integration of the key areas of the brain that were insufficiently developed because of the lack of attuned communication is effected. Greater *mindsight*—to be more objective, more observant, more flexible in one's response, more open, less reactionary—the areas of the brain that were not sufficiently integrated will develop connections that allow for a more coherent narrative and therefore, greater flexibility and complexity of behavior leading to better interrelationships.

REFERENCES

1. Siegel D. *Mindsight: The New Science of Personal Transformation.* New York, USA: Bantam Books; 2011.

2. Wegscheider-Cruse S, Cruse J. *Understanding Codependency: The Science Behind It and How to Break the Cycle.* Deerfield Beach, FL, USA: Health Communications, Inc.; 2012.

3. Lipton BH, Bhaerman S. *Spontaneous Evolution: Our Positive Future (And a Way to Get There from Here)*. Carlsbad, CA, USA: Hay House, Inc.; 2009.

4. Siegel D. Toward an interpersonal neurobiology of the developing mind: Attachment relationships, "mindsight" and the neural integration. *Infant Mental Health Journal*. 2001; 22(1-2): 67-94. doi: 10.1002/1097-0355(200101/04)22:1<67::AID-IMHJ3>3.0.CO;2-G

5. Siegel D. About mindsight: An introduction to mindsight. Web site. http://www.drdansiegel.com/about/mindsight/. Accessed June

ISSN 2380-727X http://dx.doi.org/10.17140/PCSOJ-3-e007

15, 2017.

6. Ng SJ. *Breaking the Code of Codependence: Becoming Conscious Through the Transpersonal.* San Jose, CA, USA: Wu Chi Creations; 2013.

7. Siegel D. *Pocket Guide to Interpersonal Neurobiology: An Integrative Handbook of the Mind.* New York, USA: W. W. Norton & Company, Inc.; 2012.

8. Davidson R, Kabat-Zinn J, Schumacher J, et al. Alterations in brain and immune function produced by mindfulness mediation. 2003. Web site. http://www.mindingthebedside.com/wp-content/files_mf/alterationsinbrainandimmunefunctionproducedbymindfulnessmeditation1.pdf. Accessed January 5, 2013.

9. Davidson R. Buddha's brain: Neuroplasticity and meditation. *IEEE Signal Process Magazine.* 2008; 25(1): 174-176. doi: 10.1109/MSP.2008.4431873

10. Bowlby J. *Attachment and Loss: Vol. 1. Attachment.* London, UK: Hogarth; 1969.

11. Bowlby J. *Attachment and Loss: Vol. 2. Separation.* New York, USA: Basic Books; 1973.

12. Randolph E. *Children Who Shock and Surprise.* Kittredge, CO, USA: RFR Publications; 1985.

13. Ainsworth M, Blehar M, Walters E, Wall S. *Patterns of Attachment: A Psychological Study of the Strange Situation.* Hillsdale, NJ, USA: Erlbaum; 1978.