Attachment – the Bond that Connects Us to Life

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"In particular, it is the experience of loving and being loved that most closely predicts how we react to the hardships of life; human attachments are the ultimate source of resilience.

— Jonah Lehrer, A Book About Love

Early Attachment

- Attachment is a really big deal and has lifelong implications for all of us. Safe and secure attachment are absolutely necessary for developing healthy and secure relationships, emotional health, and the ability to regulate our emotions.
- Two early pioneers in this field, **Dr. John Bowlby** (1969) and **Dr. Mary Ainsworth** (1973) carved the way to our understanding of attachment and child development theory.
- They **defined attachment** as a deep and enduring emotional bond that leads to connections between us across time and space.
- This attachment is not always mutual and can travel in only one direction. For example, a child can attach to a parent, but the parent does not always attach to the child or vice versa (Kain & Terrell, 2018).

Attachment – Dr. John Bowlby

- By way of background on Dr. Bowlby, in an interview with Dr. Milton Stenn , Bowlby shared that his career started off in the medical direction. He noted that he was following in his surgeon father's footsteps. His father was a well-known surgeon in London and Bowlby explained that his father encouraged him to study medicine at Cambridge.
- Bowlby ended up following his father's suggestion but was not terribly interested in anatomy and natural sciences. However, during his time at Trinity College, he became particularly interested in developmental psychology which led him to give up medicine by his third year. When Bowlby left medicine, he accepted a teaching opportunity at a school called Priory Gates for six months where he worked with maladjusted children.
- Bowlby stated that the experience at Priory Gates was extremely important to his career in research as he learned that the problems of today should be understood and dealt with at a developmental level (Kanter, 2007).

Attachment – Dr. Mary Ainsworth

- Bowlby was not the only act in town as he collaborated extensively with Dr. Mary Ainsworth.
- Mary was born in **Glendale Ohio.** When she was 15, she read William McDougall's book, ***Character and the Conduct of Life***, which inspired her to pursue psychology.
- While she was teaching at **John Hopkins,** Mary began working on creating a means to measure attachments between mothers and their children.
- It was this that led her to develop her famous **"Strange Situation"** assessment, in which a researcher observes a child's reactions after a mother briefly leaves her child alone in an unfamiliar room.
- The child's reaction after the separation and upon the mother's return, revealed important information about attachment. Based on her observations and research,
- Mary determined that there were **three main styles of attachment:** secure, anxious-avoidant, and anxious-resistant. Since these initial findings, her work has spawned numerous studies into the nature of attachment and the different attachment styles that exist between children and their caregivers (VeryWellMind, 2019)

Four Phases of Attachment

- Rudolph Schaffer and Peggy Emerson (1964) analyzed the number of attachment relationships that infants form in a longitudinal study with 60 infants.
- In their study, infants were observed every four weeks during the first year of life, and then once again at 18 months.
- Schaffer and Emerson determined that four distinct phases of attachment emerged:

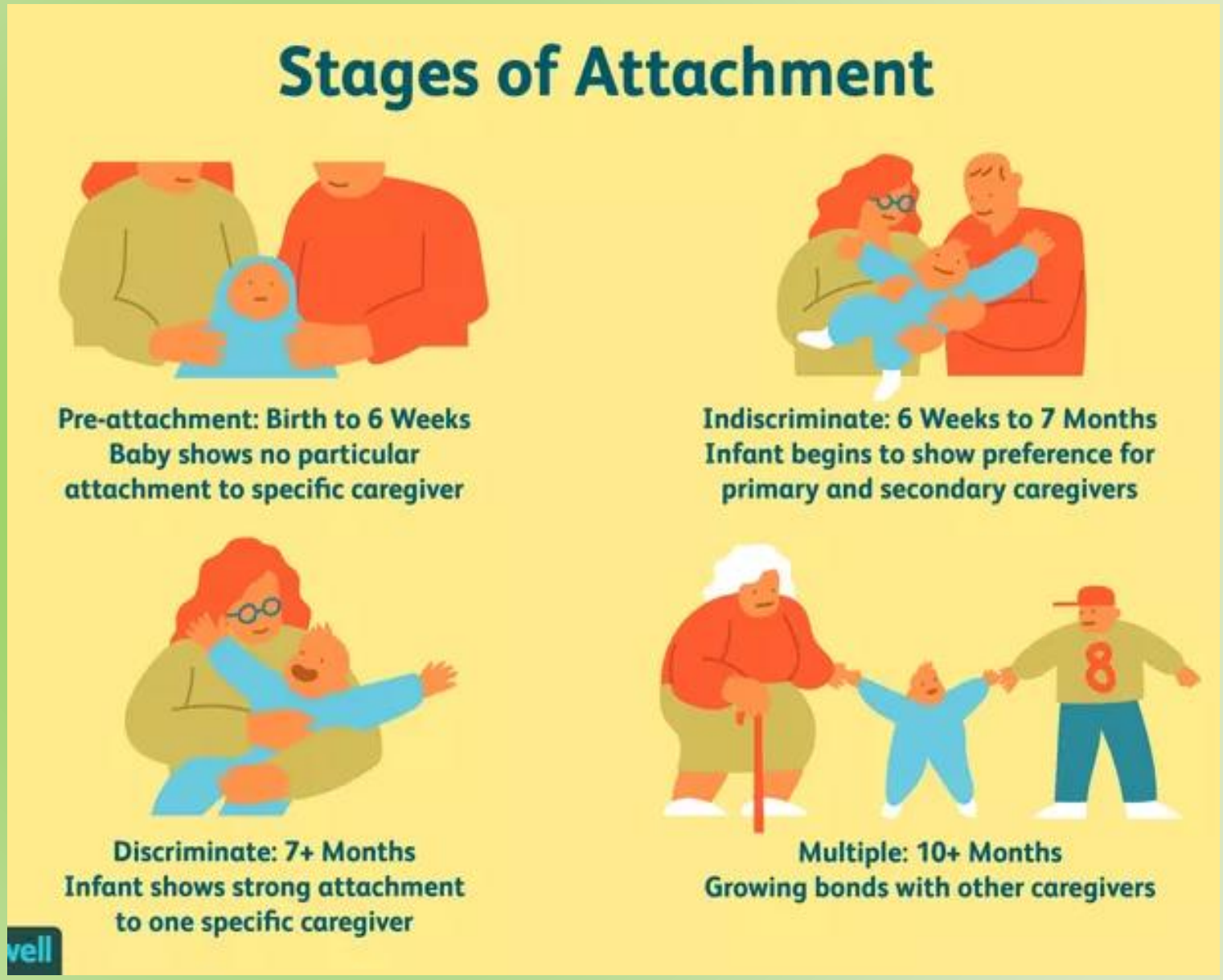


Illustration by JR Bee (VeryWellMind, 2019

Four Phases of Attachment

Rudolph Schaffer and Peggy Emerson (1964)

- **Pre-attachment stage:** From birth to three months, infants do not show any particular attachment to a specific caregiver. The infant's signals, such as crying and fussing, naturally attract the attention of the caregiver and the baby's positive responses encourage the caregiver to remain close" (Schaffer & Emerson, 1964).
- **Indiscriminate attachment:** From around six weeks of age to seven months, infants begin to show preferences for primary and secondary caregivers. During this phase, infants begin to develop a feeling of trust that the caregiver will respond to their needs. While they will still accept care from other people, they become better at distinguishing between familiar and unfamiliar people as they approach seven months of age. They also respond more positively to the primary caregiver" (Schaffer & Emerson, 1964).
- **Discriminate attachment:** At this point, from about seven to eleven months of age, infants show a strong attachment and preference for one specific individual. They will protest when separated from the primary attachment figure (separation anxiety) and begin to display anxiety around strangers (stranger anxiety)" (Schaffer & Emerson, 1964).
- **Multiple attachments:** After approximately nine months of age, children begin to form strong emotional bonds with other caregivers beyond the primary attachment figure. This often includes the father, older siblings, and grandparents" (Schaffer & Emerson, 1964).

Attachment Styles

As nicely summarized by Lyons-Ruth (1996), the basic the attachment styles culminating from John Bowlby's and Mary Ainsworth's research and the fourth by Drs. Mary Main's and Judith Solomon's (Main & Solomon, 1986) work include:

- Secure
- Avoidant
- Ambivalent
- Disordered

Attachment Styles Explained

- **Secure attachment:** Secure attachment is marked by distress when separated from caregivers and joy when the caregiver returns. Remember, these children feel secure and are able to depend on their adult caregivers. When the adult leaves, the child may be upset but he or she feels assured that the parent or caregiver will return. When frightened, securely attached children will seek comfort from caregivers. These children know their parent or caregiver will provide comfort and reassurance, so they are comfortable seeking them out in times of need" (Lyons-Ruth, 1996).
- **Ambivalent attachment:** Ambivalently attached children usually don't appear too distressed by the separation, and, upon reunion, actively avoid seeking contact with their parent, sometimes turning their attention to play objects on the laboratory floor. This attachment style is considered relatively uncommon, affecting an estimated 7 percent to 15 percent of U.S. children. Ambivalent attachment maybe a result of poor parental availability. These children cannot depend on their mother (or caregiver) to be there when the child is in need" (Lyons-Ruth, 1996).
- **Avoidant attachment:** Children with an avoidant attachment tend to avoid parents or caregivers. When offered a choice, these children will show no preference between a caregiver and a complete stranger. Research has suggested that this attachment style might be a result of abusive or neglectful caregivers. Children who are punished for relying on a caregiver will learn to avoid seeking help in the future" (Lyons-Ruth, 1996).
- **Disorganized attachment:** Children with a disorganized attachment often display a confusing mix of behavior and may seem disoriented, dazed, or confused. Children may both avoid or resist the parent. Some researchers believe that the lack of a clear attachment pattern is likely linked to inconsistent behavior from caregivers. In such cases, parents may serve as both a source of comfort and a source of fear, leading to disorganized behavior" (Lyons-Ruth, 1996).

Attachment Style Percentages

Mary Ainsworth and her colleagues reported in 1978 that studies on the three initial attachment classifications revealed:

- 70 percent of American infants have been classified as secure
- 20 percent as avoidant-insecure
- 10 percent as resistant-insecure (Ainsworth et al., 1978).

Kain and Terrell (2018) warn that there are worrying declines in secure attachment and that in more recent research populations, the percentages of secure attachment have declined by **10 percent** (Andreassen et al., 2007).

DSM 5 TR disorders resulting from poor attachment

This and the following 4 slides are adapted from Dr. Dawn-Elise Snipes excellent presentation on attachments disorders.

Click below to listen to her full presentation:

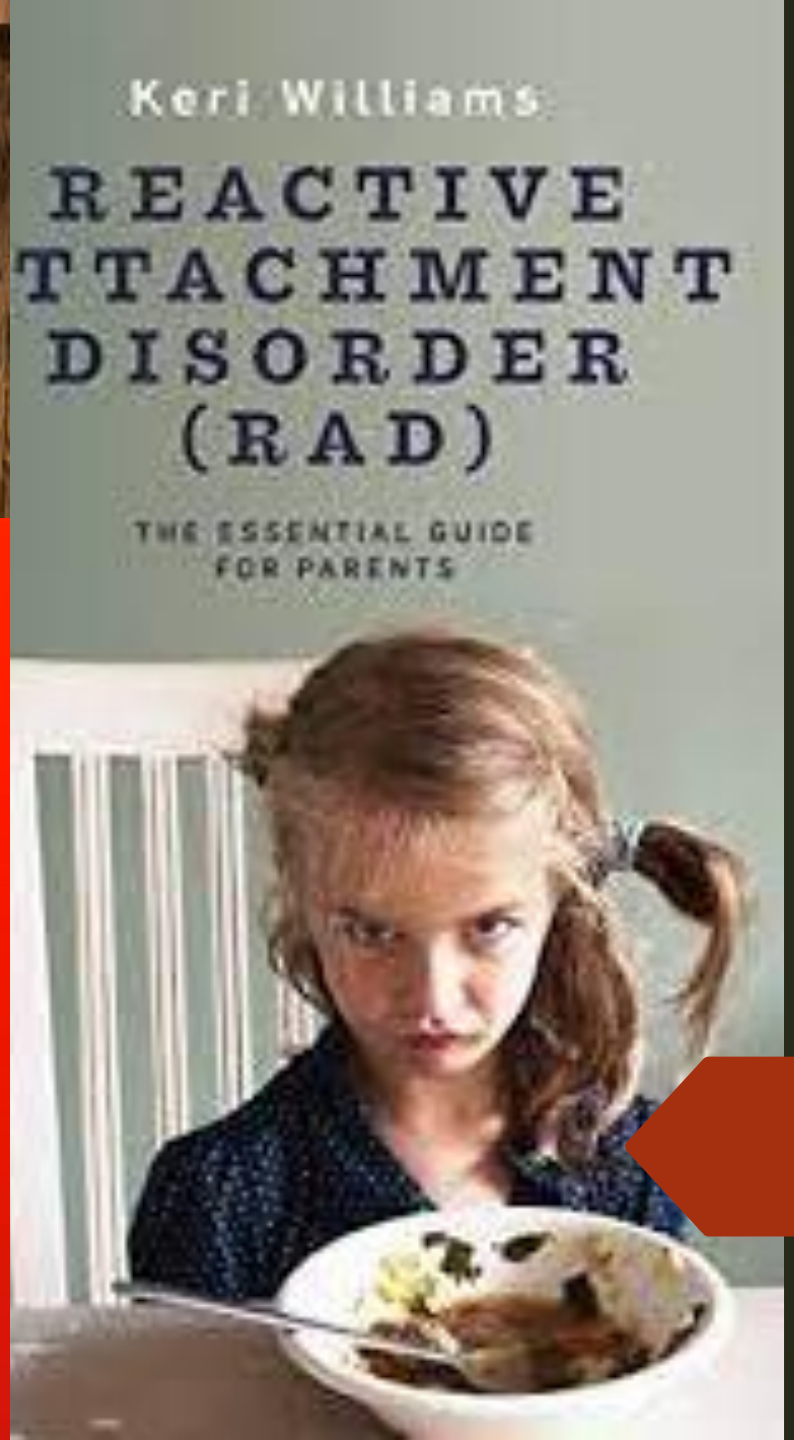
https://www.youtube.com/watch?v=ngF125Q7b1M&ab_channel=DocSnipes

Reactive Attachment Disorder

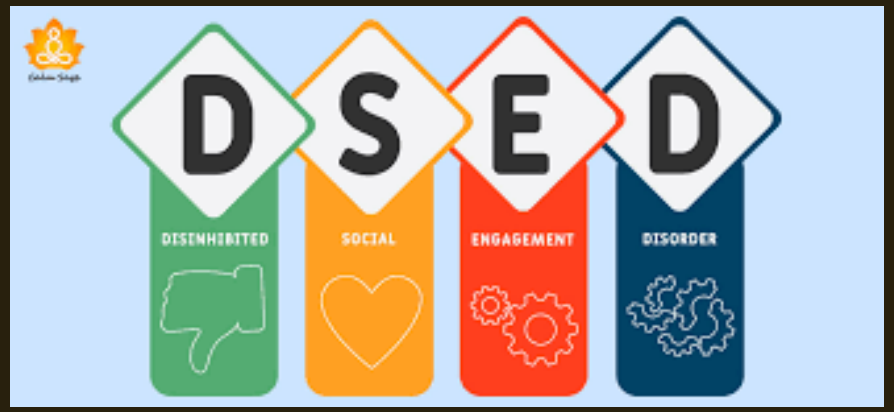
- Pervasive inhibited, withdrawn behavior toward caregivers, as evidenced by rarely or minimally seeking or responding comfort.
- Ongoing social and emotional problems as evidenced by 2+:
  - Minimal social and emotional responsiveness to others.
  - Limited positive affect.
  - Episodes of unexplained anger, depression or anxiety even during nonthreatening interactions with adult caregivers.

inadequate care as evidenced by 1+:

- Social neglect including not having ***basic needs*** for safety, love and stimulation met.
- Limited opportunities to develop secure attachments due to frequent changes of primary caregivers
- Growing up in unusual environments with severely limied opportunities to form selective attachments. DSM-5-TR



Reactive Attachment Disorder (RAD)



Disinhibited Social Engagement Disorder

- The child frequently approaches and interacts with unfamiliar **adults** with 2+:
  - Lack of caution in interacting with unfamiliar adults.
  - Overly familiar verbal or physical behavior (not culturally or age-appropriate).
  - Lack of checking in with adult caregiver, even in unfamiliar settings.
  - Little hesitation at leaving with unfamiliar people. DSM-5-TR

Disinhibited Social Engagement Disorder

- The care in Criterion C is presumed to be responsible for the disturbed behavior in Criterion A (e.g., the disturbances in Criterion A began following the pathogenic care in Criterion C).
- The child has a developmental age of at least 9 months. DSM-5-TR
- Note: No age requirement for first presentation

RAD and DSED Differential Diagnosis and Prevalence

Differential Diagnosis Not Mentioned in 5-TR

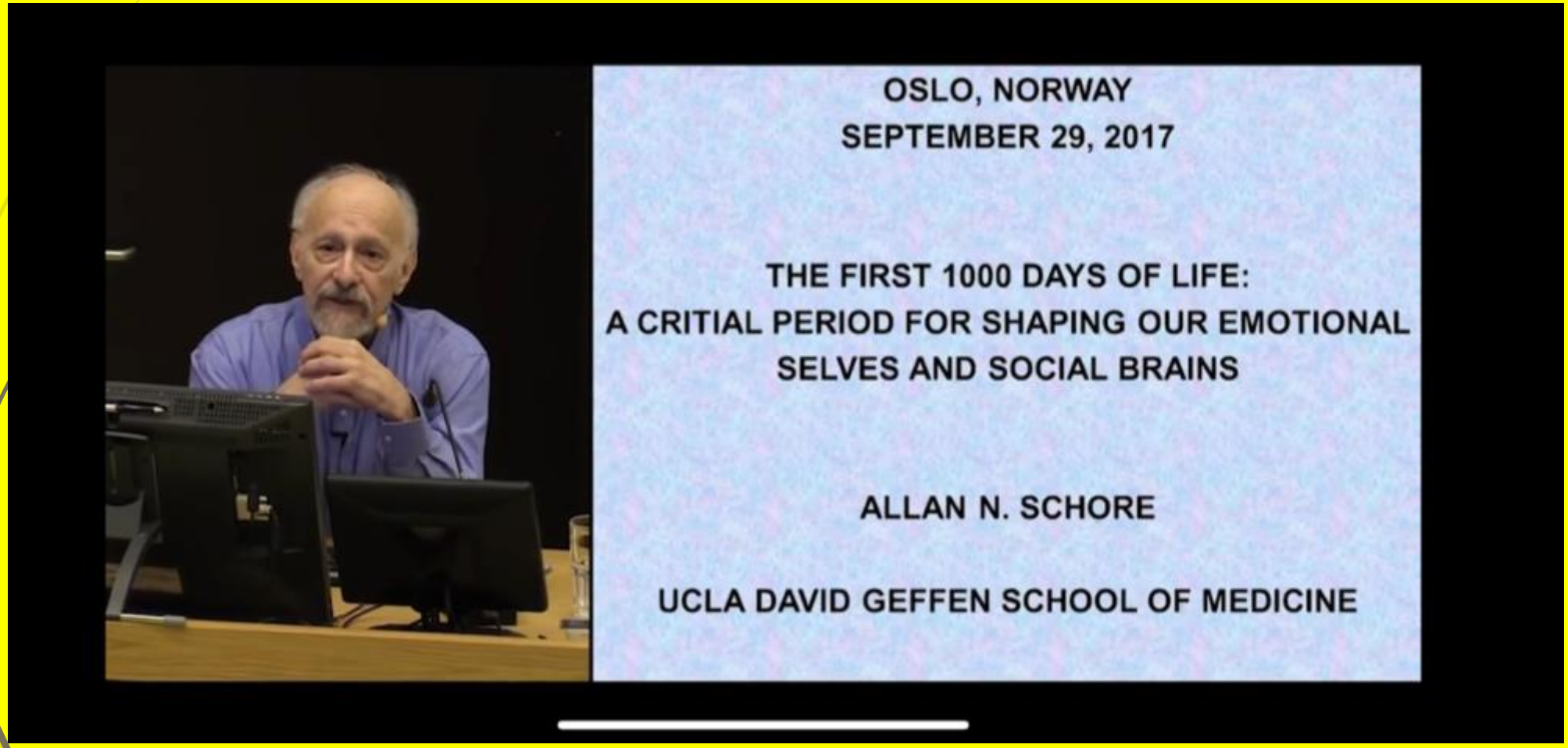
- Schizoid Personality Disorder: Detachment from social relationships and restricted range of emotional expression
- Avoidant personality disorder: Social inhibition, feelings of inadequacy, hypersensitivity to criticism
- Fetal Alcohol Spectrum Disorders: People with FASDs may exhibit hypersensitivity to touch, depression, withdrawal; or lack of a fear of strangers and easily convinced to leave

Summary

- The prevalence of RAD or DSED according to the DSM 5 TR is less than 10% in neglected children
- However, there is a significant positive association between attachment-related issues and NSSI, BPD, depression, addiction, anxiety
- Treatment for attachment issues usually requires family and/or couples therapy in addition to individual treatment for the IP

The following slides are adapted from Dr. Allan Schore's superlative lecture in 2017 in Oslo Norway.

Please click here to hear Dr. Schore's full lecture:
https://www.youtube.com/watch?v=lY7XOu0yi-E&ab_channel=RuneFardal



About Dr. Schore

- Dr. Allan Schore is on the clinical faculty of the Department of Psychiatry and Biobehavioral Sciences and UCLA David Geffen School of Medicine. He is author of six seminal volumes, Affect Regulation and the Origin of the Self, Affect Dysregulation and Disorders of the Self, Affect Regulation and the Repair of the Self, The Science of the Art of Psychotherapy, Right Brain Psychotherapy, and The Development of the Unconscious Mind as well as numerous articles and chapters. His Regulation Theory, grounded in developmental neuroscience and developmental psychoanalysis, focuses on the origin, psychopathogenesis, and psychotherapeutic treatment of the early forming subjective implicit self.

- His contributions appear in multiple disciplines, including developmental neuroscience, psychiatry, psychoanalysis, developmental psychology, attachment theory, trauma studies, behavioral biology, clinical psychology, and clinical social work. His groundbreaking integration of neuroscience with attachment theory has led to his description as “the American Bowlby,” with emotional development as “the world’s leading authority on how our right hemisphere regulates emotion and processes our sense of self,” and with psychoanalysis as “the world’s leading expert in neuropsychoanalysis.” The American Psychoanalytic Association has described Dr. Schore as “a monumental figure in psychoanalytic and neuropsychoanalytic studies.” He has been inducted into Sigma Xi, The Scientific Research Honor Society. For a detailed list of his books and articles, please visit the Publications page.

- *"All human achievement is built on the shoulders of giants, and just as John Bowlby and Allan Schore have stood on 'giant's shoulders', so future generations of scientists will in turn be standing on their shoulders. In his books he has integrated a vast array of scientific advances and organized it in an overarching way that deserves the deepest acknowledgement and gratitude." – Sir Richard Bowlby, 2017*

In the words of Dr. Schore:

"We're also looking at the more understanding that we have now about normal development and normal attachments, secure attachments, we're also looking at the other side of that. The other side, of course, would be the insecure attachments. And the most unfortunate early human beginnings, of course, would be in cases of neglect and abuse.

Just for the record, neglect and abuse are found in the histories of individuals who are severely depressed — severely depressed, clinical depressions. And also, the ones who go on to suicide. And that includes, incidentally, all of the major personality disorders in which suicide is very high, like borderline personality disorders.

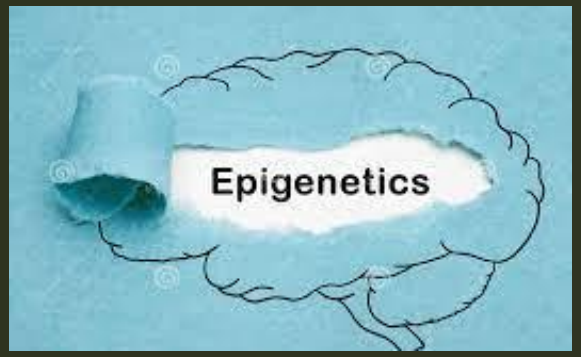
So here you have a situation – instead of the caregiver being able to attune and to read the baby's states and to form this non-verbal bond of emotional communication back and forth and to regulate these states, you have a more unfortunate circumstance whereby either the caregiver is either too intrusive and is driving the baby into extremely hyper-aroused states, which the baby can't regulate, or hypo-aroused states. Maybe, perhaps, abuse more towards hyper-arousal and neglect more to towards hypo-arousal."

Developmental trauma starts in utero

- Editorial, Leckman and March, Developmental neuroscience comes of age, *J. Child Psychology and Psychiatry*, 2011: Describe **"the phenomenal progress of the past three decades in the developmental neurosciences."**
- "Over the past decade it has…become abundantly clear that…**the *in utero* and immediate postnatal environments and the dyadic relations between child and caregivers within the first years of life can have direct and enduring effects on the child's brain development and behavior."**

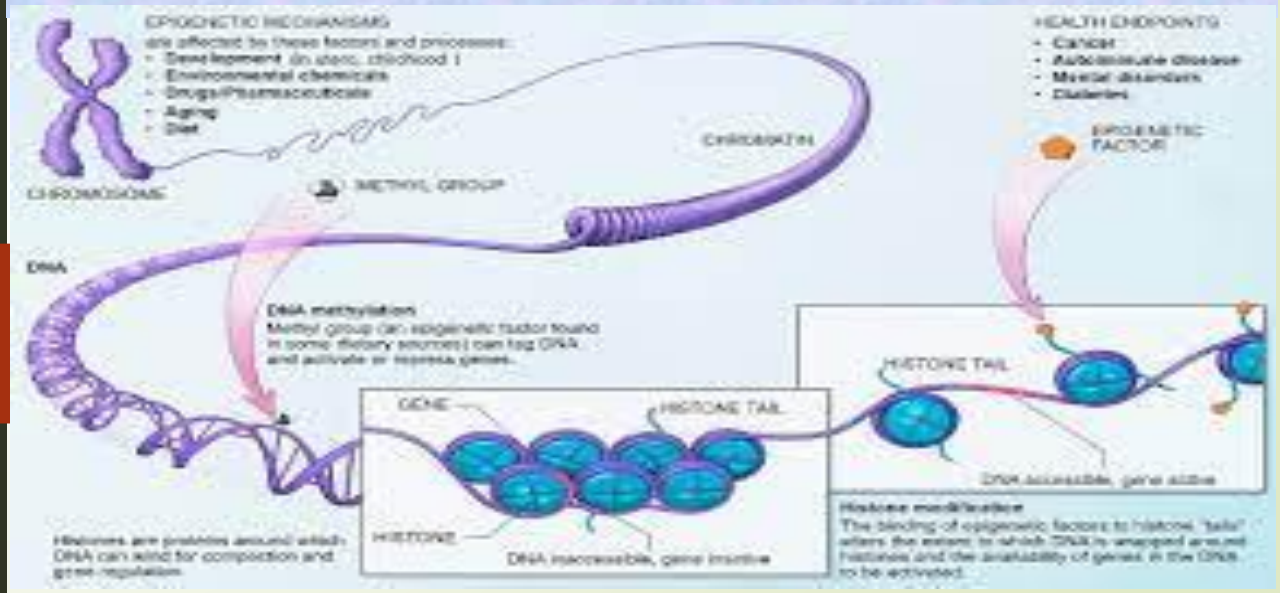
The first 1000 days are critical for the development of the child and any trauma during this time is particularly devastating

- "The **enduring impact of early maternal care** and the role of epigenetic modifications of the genome **during critical periods in early brain development in health and disease is likely to be one of the most important discoveries in all of science that have major implications for our field**."
- Clearly establishes critical importance of the first 1000 days of life. A period that extends from fetal development, to infancy, to toddlerhood.



Epigenetic and social experiences have great impact on early development

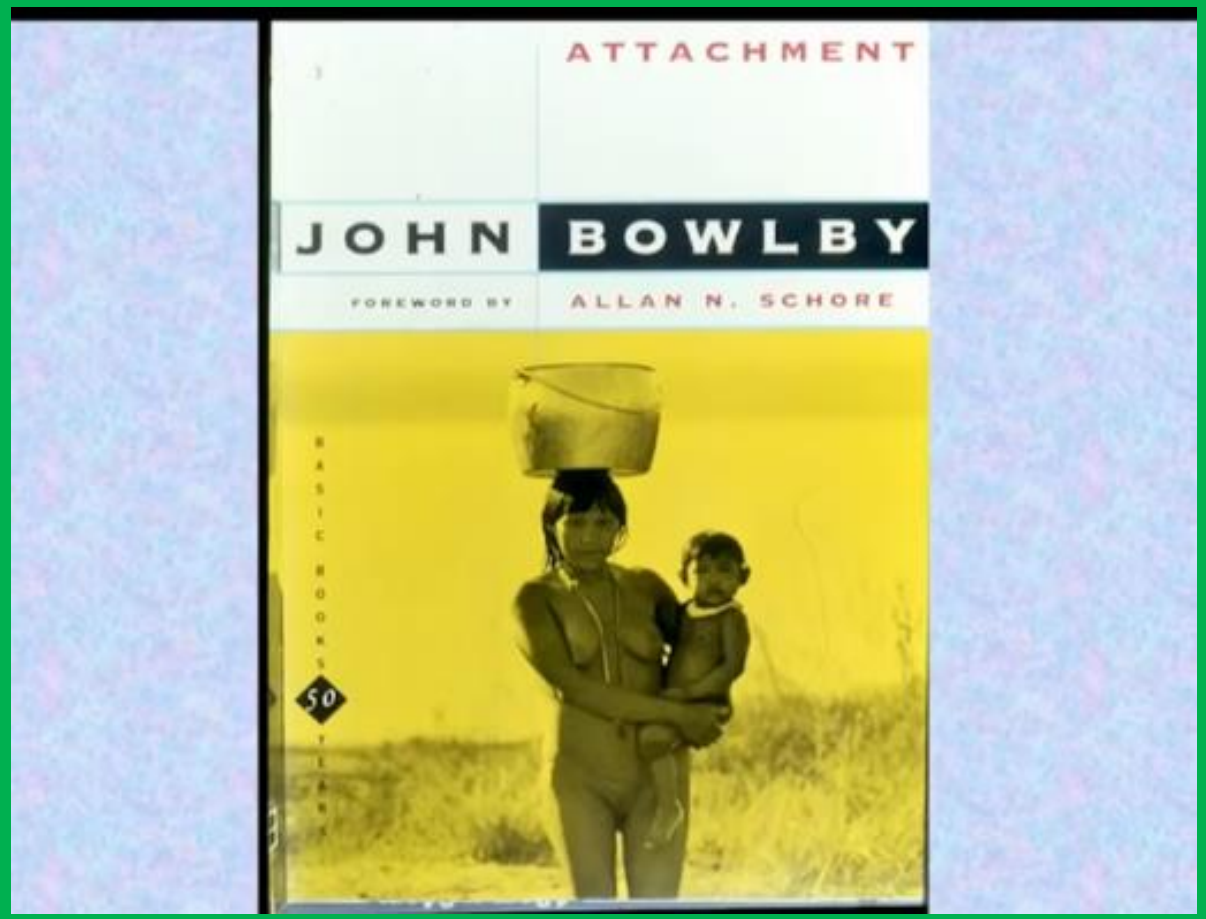
- Due to fact that early maturation of brain requires social experiences, infants and toddlers have unique essential social emotional mental health needs. Fetal and postnatal social experiences impact all later development.
- **Brain development not just genetically encoded; needs epigenetic social experiences.** Gene-environment interactions, **mother nature *and* mother nurture combine to shape human nature.**
- Schore (1994-2017): **from birth, epigenetic factors in social environment that impact genome created within mother-infant attachment relationship.**



Dr. Allan Schore on attachment

- Schore (1991-2017): regulation theory, interpersonal neurobiological model of precisely how emotional attachment experiences shape early developing "emotional" right brain.
- Schore (2012): "**Attachment theory, first created by…John Bowlby over 50 years ago, is now revitalized, particularly by its deep connections with neuroscience**. At this point in time, we have in attachment theory a coherent theory of development that is grounded in both psychological science and neuroscience, and thereby is on a much firmer ground than it used to be."

Dr. Schore cites Bowlby often



Three current paradigm shifts in models of attachment

First shift: Cognition to Emotion

- Current **paradigm shift in models of attachment. Three** converging **themes.**
- **First theme: psychology and neuroscience shifting from cognition to emotion.**
- Schore (*Affect Regulation and the Origin of the Self: The Neurobiology of* ***Emotional*** *Development*, 1994)
- Ryan (2007): "**After three decades of the dominance of cognitive approaches, motivational and emotional processes have roared back into the limelight.**"
- **Attachment** shifts, development of behavior to cognition to emotion: **origin of emotional well-being.**

Three current paradigm shifts in models of attachment

Second shift: Emotion includes emotion regulation

- **Second theme: self-regulation**. Emphasis on **not only emotion but emotion regulation**.
- Fonagy & Target (2002): "**In one sense we can consider the whole of child development to be the enhancement of self-regulation.**"
- **Attachment promotes self-regulation; allows new and more complex / resilient relational interactions between the individual and the social environment.**
- Self-regulation tied to **stress regulation**.
- **Affect dysregulation** in critical period of right brain and origin of later emotional disorders.

Three current paradigm shifts in models of attachment

Third shift: Usher in developmental neuroscience

- **Third theme** of paradigm shift: **developmental neuroscience actively exploring brain growth spurt (last trimester through 2nd year) and early development of right brain in this critical period.**
- **First 1000 days is a period of maximal neuroplasticity.**
- Rapid brain in the third trimester of gestation.
- Pregnant mother's emotional state influence fetal brain growth. Maternal emotional stress in the prenatal period affects brain growth; stress hormones cross the placenta.

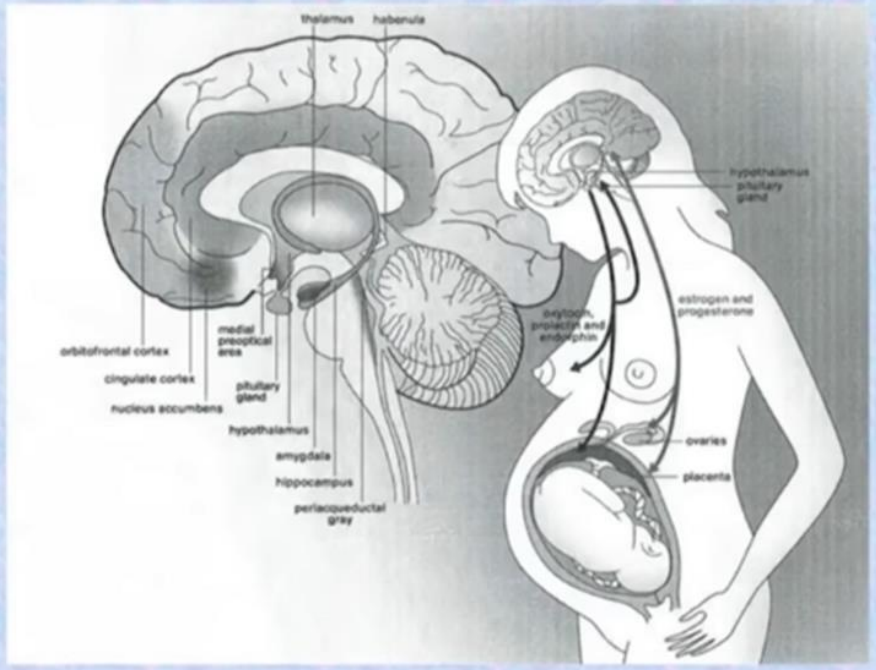
Dr. Allan Schore on attachment as a means to self-regulation.

J. Schore & A. Schore, Modern attachment theory: the central role of affect regulation in development and treatment, *Clinical Social Work Journal*, 2008.

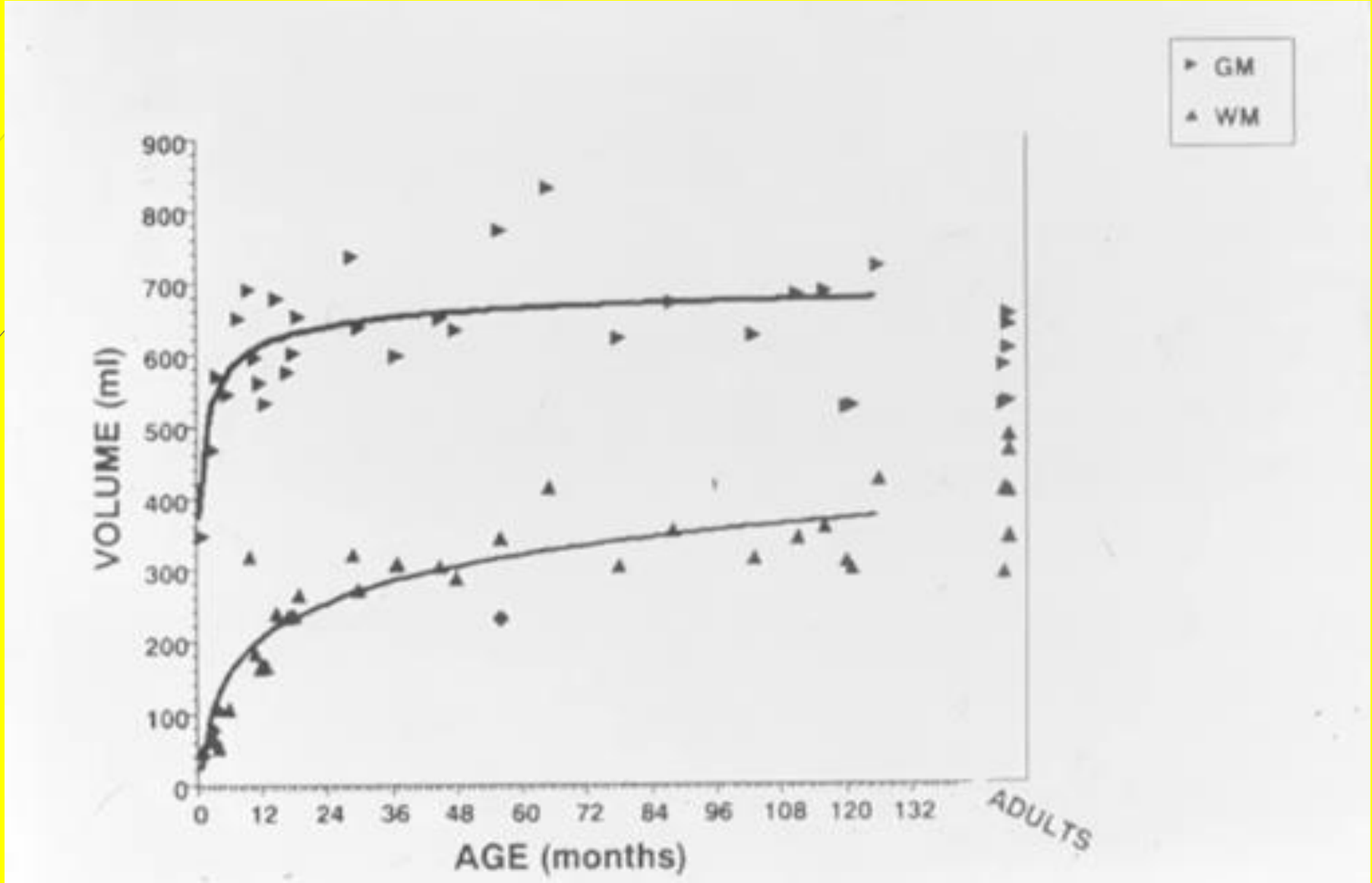
"We suggest that in line with Bowlby's fundamental goal of the **integration of psychological and biological models of human development**, the current clinical and experimental focus on how affective bodily-based processes are nonconsciously interactively regulated… has **shifted attachment theory to a regulation theory**."

Massive brain growth in the prenatal and postnatal periods – especially the right hemisphere

- In prenatal and postnatal periods brain growth rate = **40,000 new synapses every second**.
- Trevarthen (1996): "The right hemisphere is more advanced than the left in surface features from about the 25th (gestational) week and this advance persists until the left hemisphere shows a postnatal growth spurt starting in the second year."
- Schore (1994): **attachment occurs in this period of accelerated growth of the emotional right brain. Attachment experiences shapes brain's capacity for emotional and social functions throughout life.**



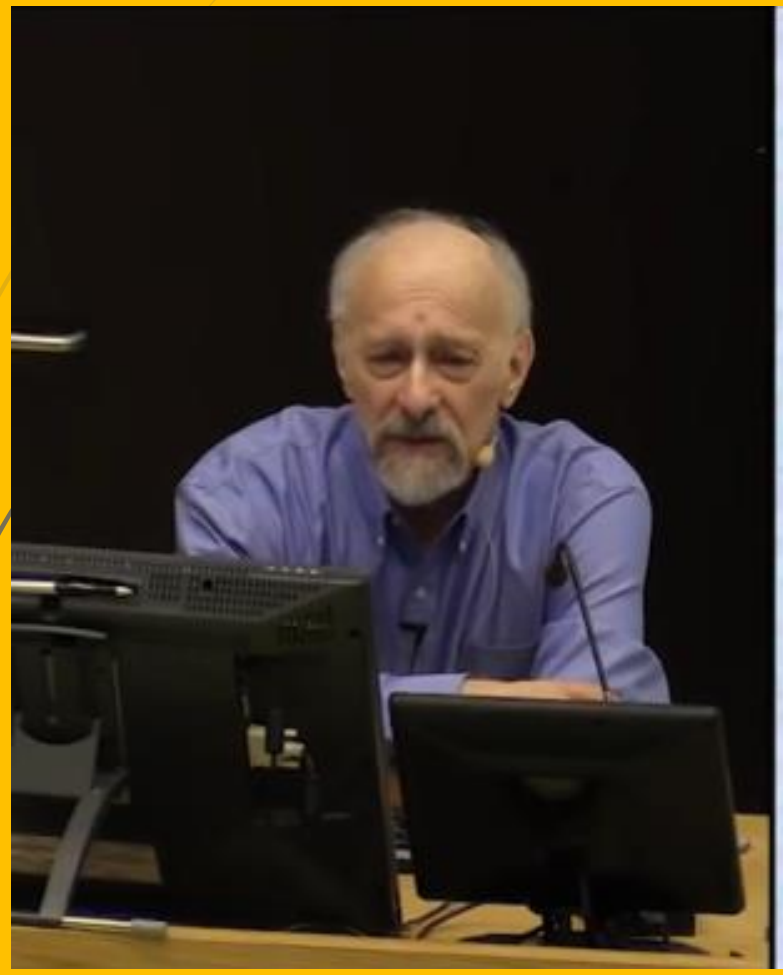
White and gray matter growth rates

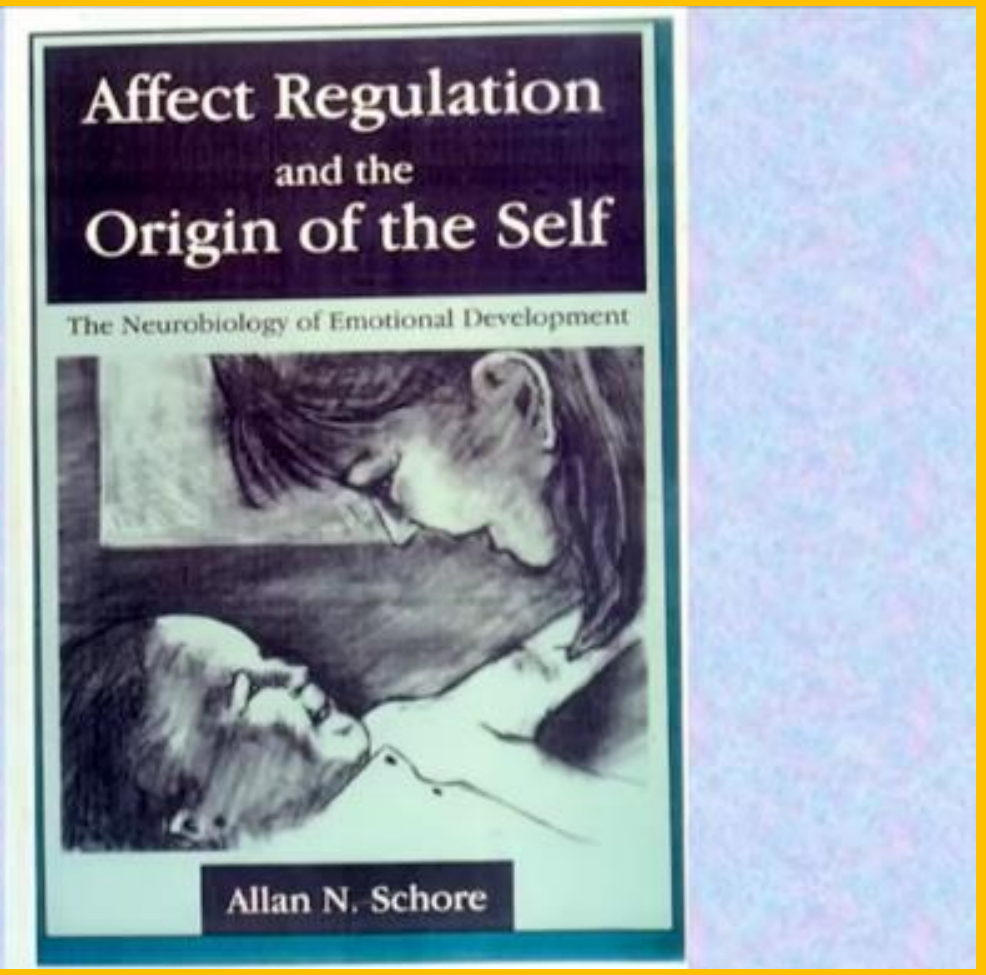


Attachment theory has now become regulation theory

- J. Schore & A. Schore, Modern attachment theory: the central role of affect regulation in development and treatment, *Clinical Social Work Journal*, 2008.
- "We suggest that in line with Bowlby's fundamental goal of the **integration of psychological and biological models of human development**, the current clinical and experimental focus on how affective bodily-based processes are nonconsciously interactively regulated… has **shifted attachment theory to a regulation theory**."

Dr. Schore's seminal book – *Affect Regulation and the Origin of the Self*





Wide Reach

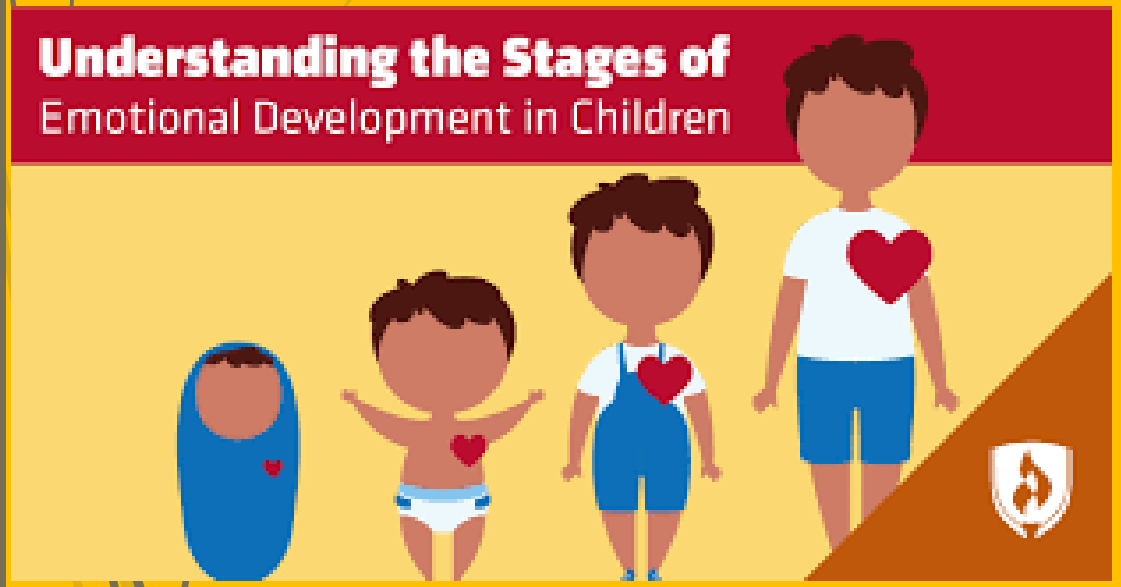
Attachment Theory has a wide reach affecting many fields

- Here discuss recent research on **how optimal attachment experiences facilitate experience-dependent maturation of developing "emotional" right brain, core of the self, and thereby emotiona well-being in later stages of life.**
- Importance of early development in all fields. Modern attachment theory offers pragmatic implications for neuroscience, developmental psychology, pediatrics, clinical social work, psychoanalysis, infant mental health, behavioral biology, family law, psychiatry, and psychotherapy.

The essential task of the first year is the co-creation of secure attachment with primary caregiver

- Essential task of the **1st year** is the **co-creation of a secure attachment** bond of emotional communication between the infant and his/her primary caregiver.
- The baby communicates its burgeoning positive emotional states (e.g., joy, excitement) and negative emotional states (e.g., fear, separation-loss, anger) to the caregiver so that she can then up and down regulate them.
- The attachment relationship shapes the ability of the baby to communicate with not just the mother, but ultimately with other human beings.

The child's development is not just cognitive but is emotional

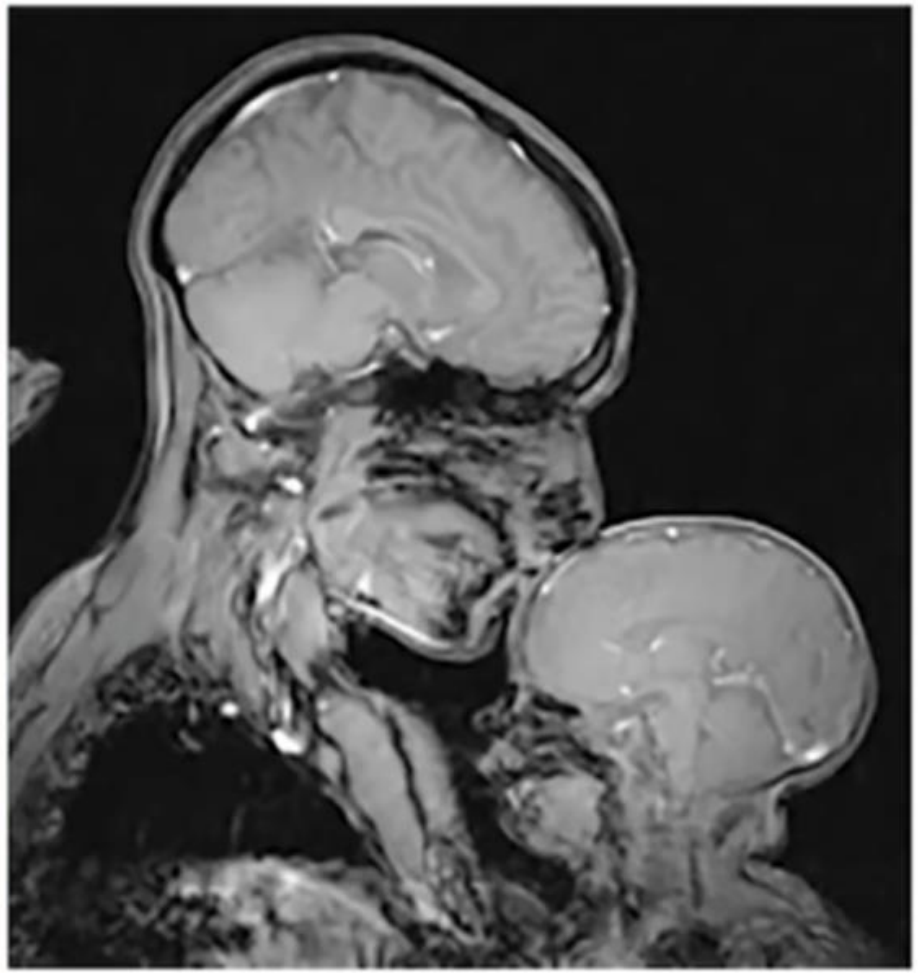


- Walker-Andrews & Bahrick (*Infancy*, 2001):
- "**From birth**, an infant is plunged into a world of other human beings in which **conversation, gestures, and faces** are omnipresent during the infant's waking hours. Moreover, these forerunners of social information are dynamic, multimodal, and reciprocal."
- Paradigm shift in conception of infancy. From beginning, infant relating to social environment. Emotional not just cognitive development.
- **Sentient being, capable of perception, sensation and feeling**. Emerging subjectivity (developing mind) created in an intersubjective context.

Early communication is nonverbal

- Tirassa (2006): "The **infant's subjective perspective of herself as immersed in an all-social world**...against which she can interact with her caregivers, communicating with them, trying to make sense of what they do and their attempts to communicate with her, acquiring the first elements of the cultural environment in which she happens to live."
- Infant can't speak, but can communicate to others who can understand these **nonverbal communications**.
- Infant seeks **proximity** to mother, who must be subjectively perceived as predictable, consistent, and emotionally available.

Neuroanatomy of mother-infant bond



- Ungar (*Annals of Family Medicine*., 2017).
- "Rebeca Saxe of the Brain and Cognitive Sciences department at MIT captured the **scan of a woman with her baby through an MRI machine** (Figure 1, "Mother and child"). The image depicts the mother-infant bond at the level of its most basic neuroanatomy. Through a grainy spectrum of black and grey, the infant brain—seemingly exposed and vulnerable—is held by a larger and more robust adult brain."

- Attachment emotional communications between **infant's right brain and mother's right brain**.
- Infant: "The **right hemisphere can be considered dominant in infancy**, for the type of visual and acoustic communication which is relevant for the prelinguistic child."
- Adult (mother): The perception of the infant's facial expressions, vocal expressions, **tactile gestures, and smells processed by the right hemisphere.**

Right brain is dominant in infancy

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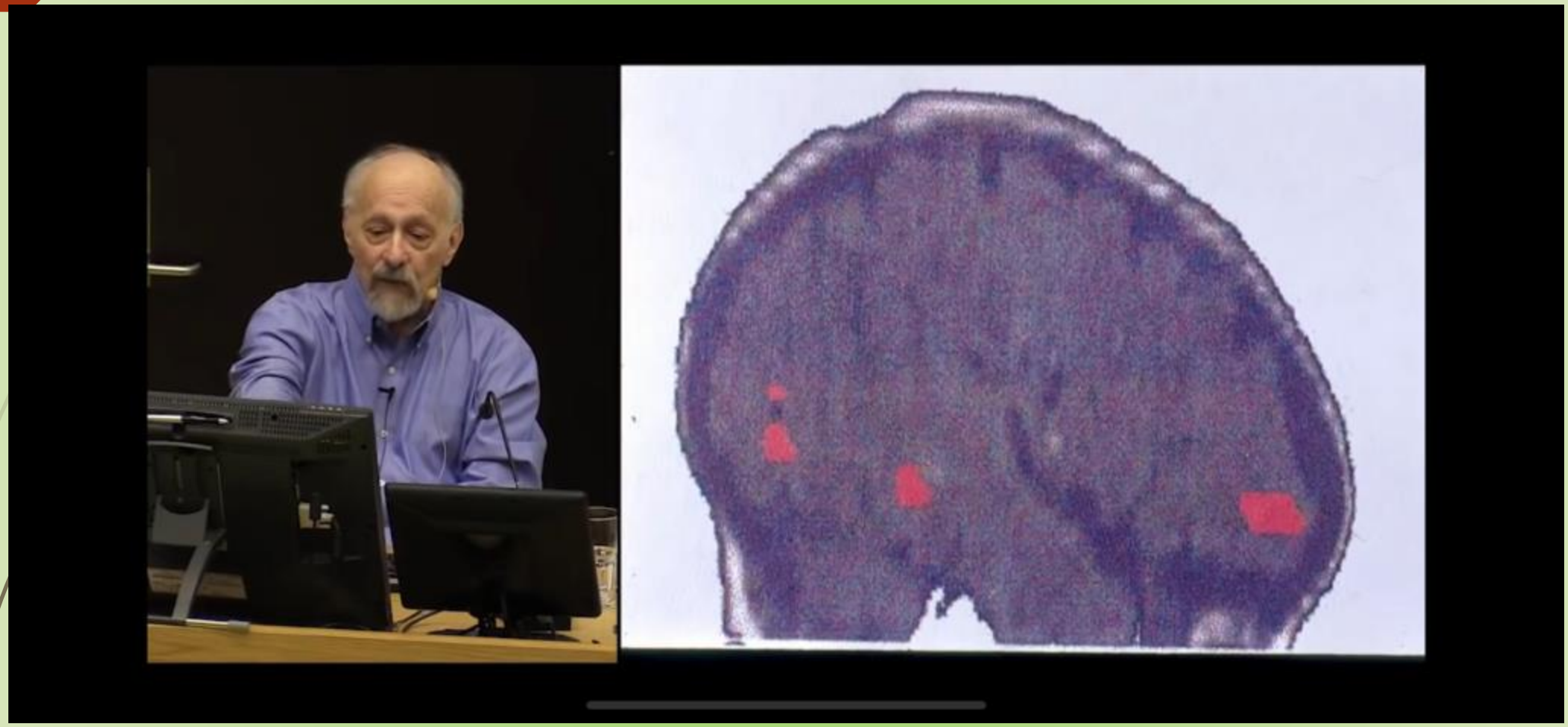
Right to right brain communication between mother and infant is dominant early on

Right to right brain communication between mother and infant is dominant early on

- Schore (1996): "The **infant's early maturing right hemisphere**, which is dominant for the child's processing of visual emotional information, the infant's recognition of the mother's face, and the perception of arousal-inducing maternal facial expressions, is **psychobiologically attuned** to the output of the **mother's right hemisphere**, which is involved in the expression and processing of emotional information and in nonverbal communication."

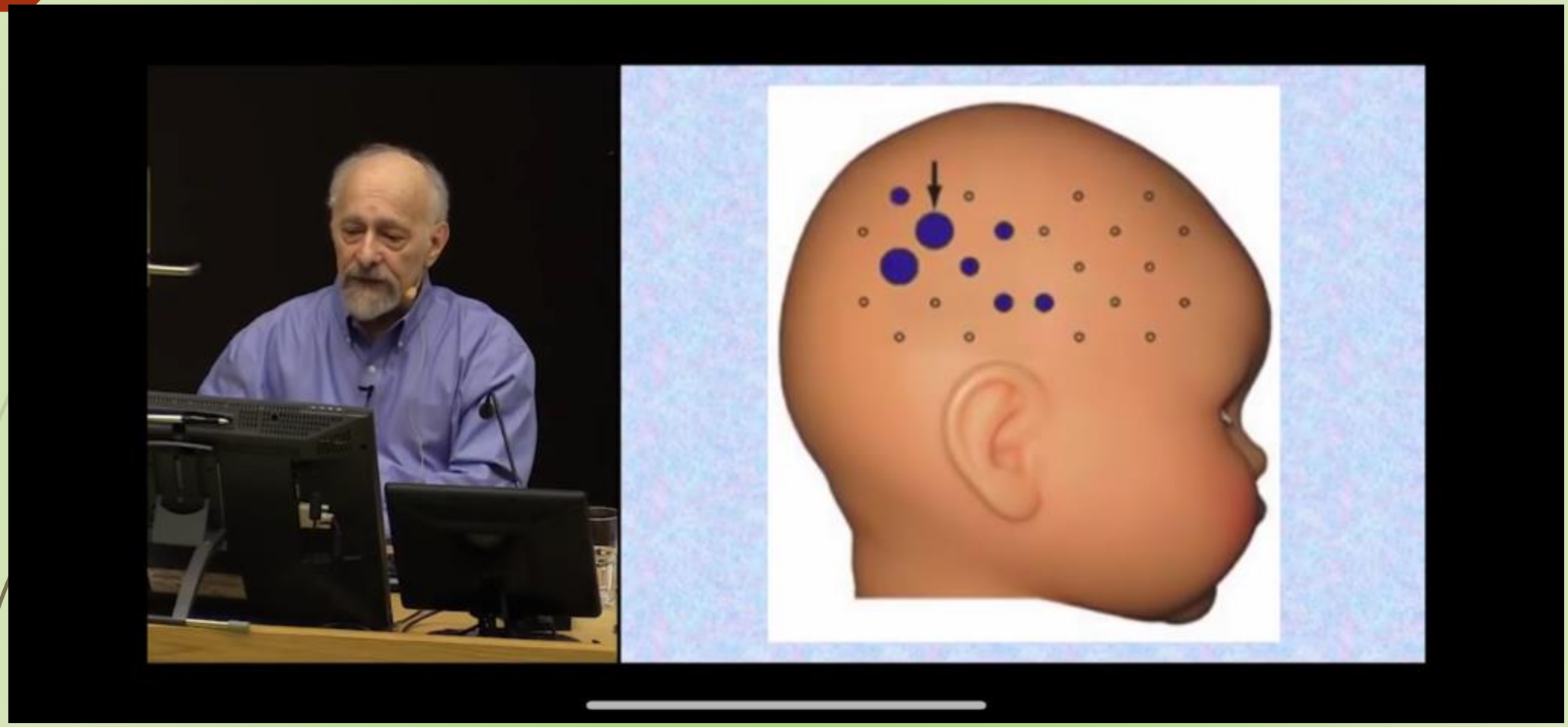
Right hemisphere (RH) visual-facial communications (that baby knows he's got it going on!)

- Grossmann et al. (2007): **4-month**-old infants presented with images of a female face gazing directly ahead show enhanced electrical activity over right prefrontal areas.
- Nakato et al. (2009): near-infrared spectroscopy re **5-month**-olds' RH responds to in female faces.
- T r et al. (2002): PET study of **2-month**-o g at image of a woman's face; a nt's RH.



- Mento et al. (2010): EEG study of auditory pitch processing in preterm infants born at 30 gestational weeks: "These findings suggest that the **earlier righ structural maturation in foetal epochs** seems to b paralleled by a right functional development."
- Telkemeyer et al. (2009): NIRS of **2-6 day neonates** show "responses to slow acoustic modulations are lateralized to the **right hemisphere**."
- Homae (2006): "Prosodic processing in **3-month-ol infants** is subserved by the **right** temporoparietal

Right hemisphere auditory-prosodic attachment (you just gotta loves those babies!)



- Montirosso, Borgatti, & Tronick (2010): observe left-sided regulatory gestures when infant stressed.
- "Infants cope with the emotional distress caused by unresponsive mothers through self-regulation behaviors associated with a greater activation of the right hemisphere… during a stressful condition there is a state-dependent activation of the right hemisphere."
- **"The right hemisphere is more involved in the social and biological functions regarding infant caregiver emotional bonding** (Schore, 2005; Siegel, 1999)."

Right hemisphere tactile-gestural attachment communications

The power of attunement

Mother not only receives infant's right brain emotional communications, but then interactively regulates them

Baby becomes securely attached to psycho-biologically attuned caregiver who minimizes negative affect (fear, in soothing) **and maximizes positive affect** (joy, in play).

is the emotional availability of the caregiver in **acy which seems to be the most central growth-**omoting feature of the early rearing experience."

Winnicott (1986): "**The main thing is a commun-ication between the baby and the mother in terms of the anatomy and physiology of live bodies.**"

Dr. Schore's all-time favorite slide depicting mother-infant attunement

There are frequent moments of misattunement

- Research now clearly demonstrates that even in the development of a relatively secure attachment bond, the **primary caregiver is not always optimally attuned**. Rather, frequent moments of misattunement in the dyad rupture the attachment bond.
- In a pattern of **interactive repair** following misattunement, or **disruption and repair**, in a timely fashion the secure caregiver who induces a stress response through misattunement reinvokes a reattunement—that is, an interactive regulation of the infant's negatively charged arousal.

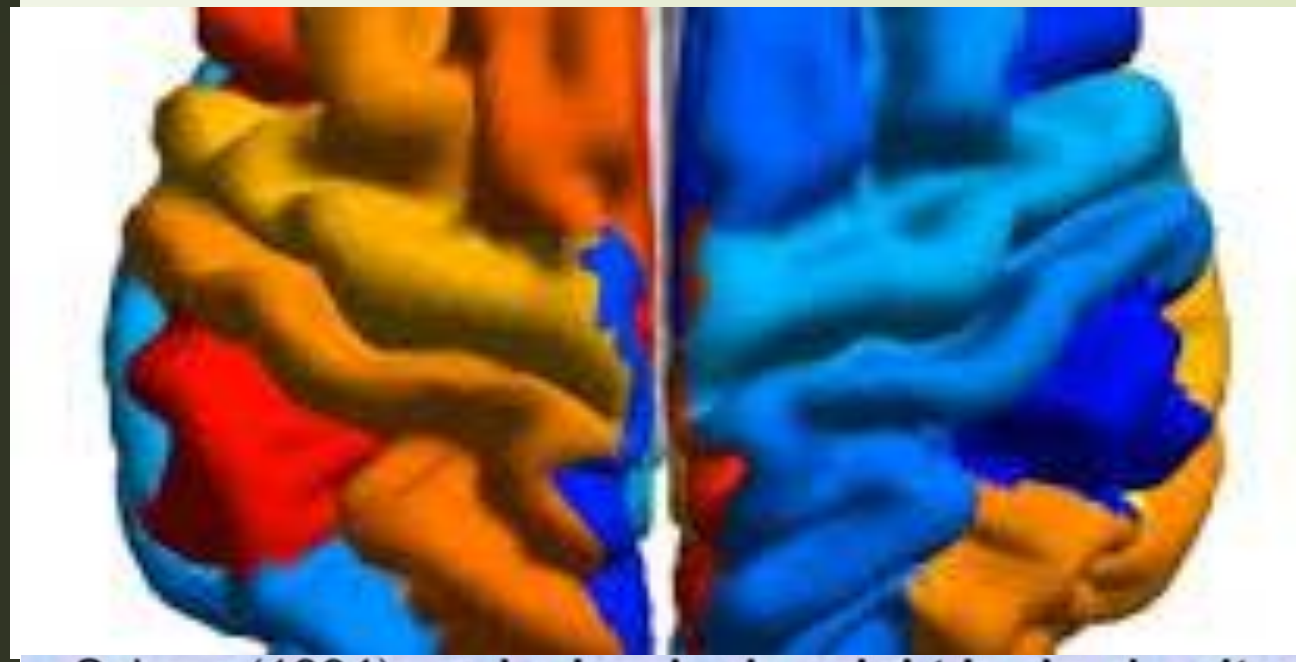
Good enough attunement – it doesn't have to be perfect - just good enough

Key is not for caregiver to always be perfectly attuned – indeed studies show this only occurs less than 30% of the time. Rather, the "good enough mother" is able to **monitor the changes in the infant's state**, and reattune and flexibly alter her response to the infant.

Ovtscharoff & Braun (2001): "The regulatory function of the **newborn-mother interaction** may be an essential promoter to ensure the normal development and **maintenance of synaptic connections** during the establishment of functional brain circuits."

Attachment = right brain-to-right brain interactive regulation of emotion.

Early developing right brain circuits are shaped by attachment experiences



- Schore (1994): **early developing right brain circuits are shaped by attachment experiences**.
- Studying newborn infants at the **beginning of the first** *year*, Meaney and his colleagues conclude,
- "[I]n early life the right cerebral hemisphere could be better able to process…emotion (Schore, 2000; Wada and Davis, 1977). This idea appears consistent with our findings of rightward asymmetry in…limbic structures…These neural substrates function as hubs in the right hemisphere for emotion processes and mother and child interaction (Ratnarajah et al., *NeuroImage*, 2013)."

Mother's right frontal areas activate to match both her infant's joy and/or distress

- Nishitani et al. (2011): attunement of secure mothers is to both the infant's positive and negative facial communications. Studies of the mother's EEG response to videos of their own 5-8 month infant show **right frontal** activation related to maternal affect matching of infant joy during **free play** (peek-a-boo).
- But the mother's **right frontal** areas are also activated during infant **distress**. This maternal negative affect matching is expressed in the mothers' experience of sadness, concern, irritability, and absence of joy in response to seeing their own infant in distress (Killeen & Teti, 2012).

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Positive and negative affects activate different brain circuits

- Now evidence that **positive and negative affects activate different brain circuits**.
- Tucker (1992): "The ability to participate in processes of play and affectional interaction may be a key determinant of both information flow and the brain arousal that help to shape developing networks." **Play behavior transforms the physical environment into an enriched environment.**"
- What do we now know about the earliest expressions of **play in infancy and toddlerhood**? Following from "Playing on the right side of the brain. An interview with Allan Schore (*American Journal of Play*, 2017).

Small does of shame in the socialization process

- A number of authors have emphasized the **growth-facilitating importance of small doses of shame in the socialization** process of the infant. In fact, this "attachment emotion" which has been described as "the primary social emotion" makes its initial appearance in the second year.
- The visual emotion of shame occurs when the individual is experiencing interest-excitement or enjoyment-joy, that is when the infant is in a play state and is anticipating the mother to join in mutual play.

Mild shame helps to shift from too high arousal to lower arousal state

- As in late infancy, the toddler, a hyperstimulated, high arousal state of excitement and elation, exhibits itself during an attachment reunion with the caregiver.
- Despite an excited expectation of an attuned shared positive affect state with the mother and an amplification of the positive affects of excitement and joy, the infant unexpectedly encounters a facially expressed affective misattunement (gaze aversion).
- Infant is propelled into an intensified low arousal state which he cannot yet autoregulate. **Shame** represents rapid transition from a preexisiting **high arousal positive state into a low arousal negative state**.

- That being the case my colleague Russell Meares points out that in optimal attachment contexts the right brain-to-right brain **protoconversation continues in the second year**, a time when the toddler becomes acutely aware of others, is full of **playful imagination, and is eager for novel experiences**.
- With the expansion of higher right brain functions and the onset of language the intersubjective protoconversation now takes the form of **intersubjective imaginative games**, and then in intrasubjective **internalized dialogues and what he calls "conversational play**."

Right brain growth continues through the second year of life

- This creative game, which the toddler plays while alone is **make-believe**, depends upon the expressive use of words. This **symbolic play** is infused with pleasure.
- The game consists of a miniature story, told as if to the child himself or herself but also to someone else, who is not there, except as a feeling of presence (the internalized protoconversational mother). This earliest form of **symbolic play allows the toddler to play with ideas and generate fantasies, including fantasied interactions with other selves**.

Symbolic play allows the toddler to play with ideas and generate fantasies

- Building upon these observations of the child's progressing social-emotional development, I have suggested that not only the infant's mother but the toddler's **father impacts the growth of the baby's brain**.
- In the middle of the second year the structural **development of the child's brain is shifting from** a maternal experience-dependent maturation of an early developing **right brain** circuitry **to** a paternal experience-dependent maturation of a later developing **left brain circuitry**.

Dads enter the building at about 2 ½ years of age

Fathers' involvement impacts the growth of the toddler's left brain

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Full body, rough-and-tumble play offered by dads is a good thing. So, mom, let them loose!

- Research shows that **paternal care** affects synaptic development in, for example, the somatosensory cortex of the **left hemisphere**.
- Paternal care significantly affects the development of play behavior, especially active full body play. Juvenile **rough-and-tumble play**, has been shown to be critically impacted by the father– child relationship.
- The **father** thus serves as a **regulator** of the toddler's increasingly expressed **aggressive impulses** ("terrible twos") and rough-and-tumble play (as opposed to the mother's earlier role in fear regulation).

Mom and dad make a great team – mom with right brain and dad with left brain development

- Early social experiences with both the mother and the father of mutual intersubjective play of the developing mind and active physical play of the maturing body act as enriched environments for the creation of a flexible, personality.
- **Secure attachment = resilience**.
- Emotion is initially **interactively regulated** by the caregivers, but over the course of the first two years it becomes **increasingly self regulated** as a result of neurophysiological development.

Attachment Takeaways

- Studies reveal that Interactions during the first three years of life can affect cognitive development and will impact physical, emotional, and mental health of children as they age and develop (Colmer et al., 2011).
- Typically, a parent's emotional response will serve as a template for helping their child learn about emotion. As parents model appropriate emotion regulation through conversations or actions, children learn to control/regulate their emotions.
- On the other hand, insecurely attached children may learn to mask their emotional distress or exaggerate them in order to gain the parent's attention; therefore, making up for a parent who is not consistently responsive (Laible, 2010).
- This type of maladaptive behavior has devastating consequences, resulting in poor social skills, emotional dysregulation, depression, anxiety, peer exclusion, social rejection, and/or low self-esteem (Lewis et al, 2015; Newman, 2017).
- So, it behooves any of us who are young parents to ensure that we are spending lots and lots of time with our infants and children in healthy, safe, and connected ways, particularly early in life to develop secure attachment so they will be able to have joy, fulfilling relationships, and emotional stability.