



Newton Center for Affect Regulation

The Neuroscience of Attachment:

The Family Leave Act

Position Paper One

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Members

Ruth P. Newton, Ph.D., Chair, Clinical Psychologist; Infant-Family and Early Childhood Mental Health Specialist/Reflective Practice Facilitator III/Mentor
Newton Center for Affect Regulation
3252 Holiday Court, Suite 109
La Jolla, CA 92037
www.newtoncenter.net

Kim Flowers, LCSW, Infant-Family and Early Childhood Mental Health Specialist/Reflective Practice Facilitator II
Clinician Specialist
American Academy of Pediatrics, California Chapter 3
Co-Coordinator, Earliest Relationships Network (ERN)

Sherry Hartwell, LMFT, Infant-Family and Early Childhood Mental Health Specialist/Reflective Practice Facilitator Mentor
Co-Founder and Co-Coordinator, Earliest Relationships Network (ERN)

Claudia Hervatin-Hergesheimer, MSW, ASW
Project Clinician
Newton Center for Affect Regulation

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The Issue

Knowingly or not, parents walk hand in hand with the powerful unseen forces of evolution that tirelessly work to ensure infant survival in the environment born into. What this means is that the seeable above ground parent/infant relationship is simultaneously writing nonverbal biological code deep within the interior world of the infant's body. The *bodyworld* then is where it all begins.¹ And the biological entrainment of this embodied world occurs through primary attachment relationships.

Evolution heavily targets biological entrainment in infancy to ensure survival. It also appears to work seamlessly with the genetic blueprints for brain development that wire the older, subcortical parts of the brain first. Since the subcortical world is primarily nonconscious, the 'operating system' entrained to the environment born into can continue to run throughout life even if a person's higher consciousness is trying to change it. This is how we get intelligent, capable adults who say, "I don't want to raise my kids how I was raised" only to find in the heat of the moment with a child (or partner) that we react like our parents. The quality of parent/infant interactions then matters and it matters not only to the quality of the *lived* individual life but to the quality of our society.

Secure attachment is a known protective factor for all of life.^{2,3} Equally known is that childhood adversity is associated with future mental and physical health problems⁴⁻⁶ across the world.⁷ The neuroscience of attachment is now adding a level of awareness that clearly points out that tending the soil of an infant's basic needs is only half the story. The deeper subcortical root system involved in emotional security is the other weightier half. Fortunately these two levels of development integrate seamlessly with good-enough parent/infant attunement and care. Attuning to the infant's interior bodyworld to sense infant intention and co-regulating infant arousal states is what creates optimal arousal ranges in the autonomic nervous system (ANS). When this occurs in a good-enough fashion, infants are on the road to secure attachment. But equally if not more importantly, this is how infants feel *known*, which is critical for the development of a secure self.

No parent can do this alone and no parent can do this with half of her/his mind focused on work. Good-enough parenting means the infant has enough ongoing, consistent attunement and care to form a secure attachment bond that organizes the infant's neurobiology towards emotional security. Even good enough attunement however would be challenged given our current minimalistic parent/infant support policies as it is hard to attune when exhausted. Babies come from our deep evolutionary past where the clan was there to help parents welcome the newborn. In our current time, we have 87.1% of both parents working in households with children under 6 years of age, 61.6% of mothers working in mother maintained households, 80.9% of fathers working in father maintained households,⁸ and single parent family groups increasing.⁹ If ever there was a time in U.S. history where policies need to change to support Life, it is now.

Currently the United States does not offer paid family leave to parents bonding with their newborns. In fact, out of 185 countries, only the United States, Oman, and Papua New Guinea have unpaid family leave.¹⁰ The UNICEF's Innocenti Report Card 11, shows that the United States ranks 26th out

of 29 developed countries on overall child well-being.¹¹ Investing in secure attachment bonds means that children will grow up healthy and become productive citizens. Investing in their security is also cost-effective. Reviewing the economics of child well-being, Conti and Heckman¹² suggest that "recent evidence...shows that investing in the capabilities of the children today is the most cost-effective policy to promote the capabilities of the adults tomorrow" (p. 49). A recent perspective on healthy childhood¹³ suggests that all children need *safe, stable, nurturing relationships* and "developing family strengths is the key to both preventing maltreatment and promoting child health (p. 1)." We agree.

Many parents do not have the choice to provide uninterrupted care to their newborn because of financial needs. Six-week-old babies in childcare occur because there is no paid family leave and state disability insurance has run out. Workplace options that support uninterrupted care of newborns are critically needed for infant, maternal, and family health. The benefits of paid family leave are well documented including reduced infant mortality, increased paternal care of the infant, and reduced depression in the mother.^{14,15} The importance of increased paternal infant care cannot be overstated as it is highly associated with maternal sensitivity,¹⁶⁻¹⁸ marital happiness,¹⁹ and family stability.²⁰

The Science

It is well established that the foundational building block for infant brain development is the primary attachment relationship itself.^{21,22} In the 1960's, the British pediatrician and psychoanalyst Donald Winnicott suggested that *good enough mothering* is what is needed for the infant's *True Self...to have life*.²³ The neuroscience of infancy has shown that brain volume increases rapidly during the first year of life achieving an adult size by two years of age.^{24,25} More specifically however the right cerebral hemisphere is in a sensitive growth period from the last trimester of pregnancy to about 2.5 to 3 years of life.^{26,27}

Given the strong evolutionary interest in the early years of life, we can expect that it isn't by chance that the right cerebral hemisphere with its increased and myelinated connections to the subcortical areas of the brain for fast transmission²⁸⁻³² wires first. The right hemisphere is the dominant hemisphere for processing emotional perception and the nonverbal communication found in the contours of voice (voice prosody), gestures, eyes, facial expression,³³⁻³⁷ in short, all that goes into relating to another. The right hemisphere is also the dominant hemisphere for self awareness, smells and pheromones, one's own body schema, internal visceral awareness, recognition of another's mind (theory of mind), recognition of one's own voice, initiation, agency, intention, and social interactions.^{33,38-45} The physiological response system for the autonomic nervous system (ANS) also appears to be controlled by the right hemisphere.⁴⁶ The development and connectivity of the right hemisphere then is critical as it lays the socioemotional foundation for all future development.

Because of the *experience dependent* nature of brain development,⁴⁷ parents' good enough attunement and synchrony to their nonverbal yet communicating infant assures the formation of unifying

relational bonds needed to feel a sense of belonging that is associated with secure attachment and emotional regulation. It is also associated with the ability to have secure relationships in adulthood.⁴⁸ Schore suggests that there are three regulatory centers in the right hemisphere that go online in infancy.⁴⁹ Parents who ‘down-regulate’ high infant emotional states through soothing and ‘up-regulate’ low infant emotional states through play are not only strengthening optimal arousal ranges in their infant’s ANS, but they are also mediating the balance between destructive stress hormones like cortisol by increasing oxytocin, a neuropeptide associated with affiliation and bonding.^{50,51} Even mothers and fathers have been found to have increased oxytocin after playing only 15 minutes with their four to six-month-old infants.⁵²

When the primarily nonconscious cortical regulatory centers are not well connected due to too little parent/infant attunement and synchrony and/or too much abuse and neglect, the subcortical networks will implicitly fire for survival *as if they have a mind of their own* to anything or situation remotely associated with these original experiences. Childhood interpersonal trauma between caregiver and child is now known to affect brain development. In a 2010 review of the literature, van der Kolk and d'Andrea found that childhood interpersonal trauma was associated with both structural and functional abnormalities in the brain. Specifically they found over 700 studies documenting problems in affect and impulse control, 1,000 studies showing interpersonal problems, 50 studies reporting distorted self-perception, and a meta-analysis of 38 studies showing trauma in childhood led to difficulties in adulthood.⁵³ These authors state that

Research has repeatedly demonstrated that human beings...exposed to betrayal, abandonment and abuse by their caretakers suffer from vastly more complex psychobiological disturbances than human beings who are victims of earthquakes and motor vehicle accidents. (p. 57) Perhaps one of the most profound lessons from trauma research over the last 50 years has been that the trauma that once was outside, and played itself out in a social setting, has become lodged within people's internal experiences, in the very sinew and muscles of their organism. (p. 64)

And trauma can occur in infancy when there is a lack of caregiver/infant synchrony. Synchrony is a good enough match and response to an infant's nonverbal communications and feeling states. A lack of mother/infant synchrony at four months of age has been found to predict insecure ambivalent and disorganized attachment at 12 months of age.^{54,55} This important study was done with low risk, highly educated mothers who were not depressed or anxious. The mothers also did not have failures in empathy but rather had difficulties coordinating visual/facial behaviors with their infants, e.g., infant looks at mother and mother looks away or infant cries and mother laughs. This failure of contingent or synchronistic communication also affected all other infant communication modalities such as *attention, touch, spatial orientation, as well as facial and vocal affect and facial-visual engagement.* These authors state that *not being sensed and known by the mother and confusion in sensing and knowing himself* is what predicted disorganization at 12 months of age.⁵⁵

In 1951, John Bowlby wrote an influential monograph for the World Health Organization entitled *Maternal Care and Mental Health.*⁵⁶ There were many beneficial changes to society as a result of his

work such as hospitals allowing parents to stay with their hospitalized children. Prior to Bowlby's monograph, parents were not allowed to stay with hospitalized children as it was believed that the presence of the parent would interfere with the child's healing. We were stunningly wrong. As a work group of experienced clinicians, we cannot overstate the suffering that is caused by broken or attenuated attachment bonds. In fact, infant proximity to caregivers is a fundamental principle in biological attachment behavior. Although not readily acknowledged by mothers who must return to work for financial reasons, we are aware of many mothers who experience a body-level longing and depression because they must separate from their infant to return to work. We are also aware of some fathers who report the same. In his chapter on *Prevention of Family Failure* in the *Maternal Care and Mental Health* monograph,⁵⁶ Bowlby wrote

It should be noted that just as children are absolutely dependent on their parents for sustenance, so in all but the most primitive communities are their parents, especially their mothers, dependent on a greater society for economic provision. If a community values its children it must cherish their parents. (p. 84)

Hence we are back to the beginning: the most basic principle of child development is that it is relational. In fact, it has to be relational to survive. Healthy, secure development depends on primary, ongoing, attuned-and-synchronistic-enough caregivers who are welcoming their child to the earth well knowing that evolution is rocking the cradle. This requires us to offer much more support to parents during pregnancy and the first year of their infant's life. It requires a priority change in our consciousness to support families raising young children as the infant brain can carry these early neurobiological, lived-experience signatures into adulthood thus affecting the future of the human race.

The Position

It is our position that all children have the inalienable right to a healthy, safe, and secure development. This means that communities and societies must create infrastructures that scaffold families in pregnancy and the first year of life. Specifically, NCAR will

- Support any initiative, law, and/or organization that lobbies to change the Family Leave Act to include paid leave for both mother and father with job protection from the last trimester of pregnancy through the first three months of life. Not only are mothers and fathers healing, bonding, and adjusting to the birth of their infant during this time, but parents are guiding infant sleep and eating cycles during a primary entrainment period for circadian rhythms.⁵⁷⁻⁵⁹
- Support any organization that provides flextime to mothers, fathers, and infant caregiving relatives during the entire first year of life. Flextime gives parents *and caregiving relatives* more options to be with infants.
- Support any organization that provides quality childcare on a worksite so that parents can be with their infants and young children during the day. Onsite childcare allows parents to visit with their children, which creates security for the child who knows the parent is close-by.

- Support any organization that provides brief dyadic (mother/father/infant/clinician) psychotherapy to parents during the first year of life that focuses on improving parent/infant synchrony, reading infant cues, and providing parental support that improves the parent/family environment (see Footnote 1).
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Footnote 1: NCAR originated Integrative Regulation Therapy (iRT), a neurobiological evidence informed, brain-based limbic scaffolding designed to improve emotional security in children, adults, couples, and families of all ages.⁶⁰ We find that iRT is especially effective in dyadic therapies during the first year of life.

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