Love in Action

How Evolved Nested Care Supports Optimal Sociomorality

Darcia Narvaez and Mary S. Tarsha

University of Notre Dame

Biologist Humberto Maturana (Maturana and Verden-Zoller 2008) suggested that love shaped the course of human evolution: Humans became *Homo sapiens amans* because their biology was constructed by loving relations in early life and supported by loving relations throughout life. He noted that individuals become unwell when they exist outside of love. Humans societies that have ignored the need for love have created different types of human nature, the domineering, aggressive characters of *Homo sapiens arrogans* or *Homo sapiens agressans*. We take up Maturana's insight, focusing on the type of early life care needed for species-normal development (Narvaez 2017a), that of *Homo sapiens amans*. When children's neurobiology is well constructed from supportive experience, they develop regulated systems, skillful sociality, and compassionate morality (Narvaez 2014; 2017b). When their neurobiology is under- or misdeveloped from lack of loving care and basic needs fulfillment, they become dysregulated physiologically and socially, and are disposed toward

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moral self-protectionism. That is, humans are biosocial creatures whereby their biology is shaped by social experience and their sociomorality is rooted in the functioning of neurobiological structures (Ingold 2013; Narvaez 2012).

LOVE AND BIOLOGY

Among biological scientists, love has been identified and studied through the affectionate behaviors of pair bonding, whether romantic partners or mother–child dyads (Carter 2022). From a scientific perspective, love involves prosocial biochemistry and well-functioning autonomic nervous systems in both partners. Both types of pair bonding rely on these same foundations. The basic neurobiology of loving partners involves the dynamic interactions of endocrine systems, specifically, oxytocin and vasopressin (Carter 2019). These interpersonal dynamics also depend on a well-functioning vagus nerve. Together, oxytocin, vasopressin, and the vagus nerve promote social engagement (Carter and Porges 2013).

The vagus nerve is an integral part of the parasympathetic nervous system, the part of the peripheral nervous system that calms, soothes, and restores the brain and body (Porges 2009). The vagus nerve helps the body conserve energy and increases the calming and restorative properties in both a person's physiology (body) and their cognitive systems after stress exposure (Xu, Raine, Yu, and Krieg 2014). The vagus nerve itself has two branches, one that is an evolutionary ancient vagal circuit (dorsal vagal) and a newer branch, known as the myelinated vagus (Porges 2011). This newer branch links connections between the muscles of the face (via the brainstem) and the larynx to other parts of the brain, allowing the individual to socially engage and relate to others.

The parasympathetic nervous system, of which the vagus nerve is a component, operates in concert with numerous other physiological systems, including oxytocin, which is known as the "love hormone" (Carter et al. 2020). Oxytocin facilitates pair bonding, affectionate interactions, and parenting behaviors and builds trust (Lee, Macbeth, Pagani, and Young 2009). Together, the parasympathetic nervous system and oxytocin facilitate dynamic and restorative healing properties within the individual: They support growth and stress-coping,

reduce inflammation, enhance immune functioning, and provide an overall sense of safety (Carter et al., 2020; Porges 2022).

The functioning of the oxytocin system (Carter 1998) and that of the vagus nerve (Porges 2011) are established in early life. Loving care is essential. Among mammals, the younglings self-organize body and brain functions around experiences of affectionate touch, play, and togetherness. Without these forms of love, the offspring suffer deficits in neurobiological and social capacities. The pain and dysregulation of not getting expected needs met can follow the offspring ever after (Lanius, Vermetten, and Pain 2010; van der Kolk 2014).

Pair bonds are essential, but so are community bonds. Our heritage as *Homo sapiens amans*, over hundreds of thousands of years, is one of cooperative living and cooperative child raising (Hrdy 2009). Societies that still live like our ancestors, nomadic foragers, demonstrate a highly coordinated social lifestyle with communal interests but also simultaneous individual autonomy, what anthropologist E. Richard Sorenson (1998) called, for want of a better term, "an individualistic unified at-oneness" (89). Each person acts with the others in mind and assumes that the others will do the same (Bird-David 1992; Ingold 1980). In these egalitarian societies, sharing and meeting one another's basic needs (e.g., for food, affection, respect, autonomy) are fundamental values and actions (Widlok 2017), reflecting a gift economy, one that begins with maternal gifting of unilateral love (Vaughan 2019). According to numerous scholars across disciplines, love is the basis of healthy social relationships across the life span. We might call this a loving community. Let's examine it more closely.

CULTIVATING LOVE AND HUMANITY: THE EVOLVED NEST

To understand what a loving community feels and looks like, we take a deep historical view, recognizing that our ancestors lived in communities that in some ways sharply differed from modern societies. More than 95% of humanity's presence on the earth, over millions of years, was spent in nomadic foraging or small-band hunter-gatherer bands (Fry 2006; Lee and Daly 2005). These societies provide an excellent source of baselines for understanding the nature of human needs, species-normal ways of meeting those needs, and the human

optimization that ensues when needs are met (Narvaez 2013; 2014). These three baselines come together in what we call the *evolved nest* (Narvaez and Bradshaw 2023), also identified as the evolved developmental niche (Narvaez 2014; Narvaez, Panksepp, Schore, and Gleason 2013), or the hunter-gatherer childhood model (Konner 2005).

The evolved nest provides supportive, companionship care to meet humanity's basic needs. The evolved nest is particularly important for young children. Human children are especially immature at birth, with less than 25% of adult brain volume development. Babies resemble fetuses of other animals till at least 18 months of age and so need extensive assistance in growing brain and body well, including learning to breathe and to maintain heart rate, digestion, and a calm physiology (Montagu 1968; 1971; Trevathan 2017). Much of brain development occurs in the first few years of life.

Six components that are a part of the evolved nest are described. The first two components apply only to young children: soothing perinatal experiences and at least two years of breastfeeding on request, if not years longer. The rest of the evolved nest components apply to all ages: extensive affectionate touch; welcoming community climate; responsive supportive relationships including multiple allomothers, that is, frequent support by responsive individuals other than mothers; self-directed, multiage social play; and nature immersion and connection. Immersion in the holistic evolved nest marinates the child in a sense of mattering, of belonging, allowing the child's uniqueness to unfold. It is the system of care that evolved to optimize infant and child well-being. For all ages, the nest supports and maintains a human nature of cooperation (Narvaez 2013; Narvaez, Wang et al. 2013).

Together, all six components of the *evolved nest* represent a central aspect of what biologist Humberto Maturana calls the *biology of love* (Maturana and Verden-Zoller 2008). We can call the evolved nest *love in action*, an interactive attunement to and fulfillment of the needs of the other. Each component of the nest is next briefly reviewed, highlighting a few of its effects on biopsychosocial development, specifically the oxytocin system and the vagus nerve. Nested care also benefits the providers, though that information is not covered here.

SOOTHING PERINATAL EXPERIENCES

Soothing perinatal experience refers to prenatal, birth, and postnatal experiences. Soothing *prenatal* experiences means that during gestation there is little maternal social stress, which otherwise is associated with numerous child impairments, such as irritability (Davis et al. 2007). Several decades of converging evidence from the adverse childhood experiences (ACEs; Felitti and Anda 2005) literature suggest that the stress response system, including parasympathetic functioning, can be influenced by maternal stress and adversity during gestation (McEwen 2019). Multiple studies have found an association between maternal stress during gestation and subsequent stress reactivity in the child and later generations (e.g., Lancet 2018; Wainstock et al. 2013). The timing of stress during pregnancy matters. Class and colleagues (2011) used a Swedish population-based sample (N = 2,618,777) to investigate the timing of severe stress (e.g., death of a loved one) during the prenatal period on birth outcomes (i.e., gestational age, preterm birth, low birth weight, and small for gestational age). Birth outcomes were more greatly affected during months 5 and 6 of pregnancy, suggesting mothers are more impacted by severe stress during this time, a sensitivity that decreases later in pregnancy. Further, the way in which a mother responds to stress, either during pregnancy or after, is influenced by social and environmental influences from her own childhood, affecting successful conception and carrying a fetus to full term (Bowers and Yehuda 2016). The influence of maternal preconception/prenatal stress and its transference to her child's developing neurobiological systems has been termed the *biological embedding of maternal stress* (Gray et al. 2017).

In the evolved nest, *birth* and *postnatal* experiences are centered around following the natural rhythms of the mother and infant (Trevathan 2013; 2017). At birth, there is little medical interference in natural rhythms and processes, ensuring natural bonding and successful breastfeeding (Buckley 2015). Skin-to-skin contact immediately after birth is associated with successful and longer breastfeeding duration (Widström et al. 2019) and the dyad's relational attunement one year later (Bystrova et al. ~~2006~~). Postnatally, there is virtually no separation of baby from mother and no painful procedures like circumcision,

which can be associated with lifelong psychological and physiological impairments (e.g., Goldman 1997).

BREASTFEEDING

Several years of on-request breastfeeding are typical for our species (Dettwyler 1997; Hewlett and Lamb 2005). Tailored for the particular child at each feeding, breast milk is a live tissue that builds the body and brain, providing a host of elements including cells, immunoglobulins, and what is needed to populate a healthy gut and microbiome (Bode et al. 2020; Victora et al. 2016). Breastfeeding on request ensures that a continual optimal biochemistry is nurtured that supports growth and health for a lifetime.

One aspect of biochemical support that breastfeeding offers is the development of a healthy parasympathetic system and vagus nerve. Successful and repeated breastfeeding requires dyadic coordination that involves activation of both the mother's and the infant's parasympathetic nervous systems. The muscles of the infant's face and larynx are connected to the heart and social engagement system by means of the vagus nerve (Porges 2011). This facilitates the connection between heart, voice, emotion, and face, making it possible to eat, drink, suckle, breathe, and express emotional states on the face and through the voice. The child learns to control breathing, without which the infant can die when congested (Ribble 1943). As the newborn feeds, the vagus nerve is activated through the ingestion-vagal reflex (muscles of the face, head, and neck) and the myelinated vagus' social engagement system. These processes allow the infant to engage with the mother's (or caregiver's) face, facilitating parasympathetic experiences of relaxation that calm, soothe, and recenter the infant, fostering the development of physiological regulation.

Porges and Lipsitt (1993) suggest that the ingestion-vagal reflex is an important part of the infant–caregiver bonding process and paramount for development of infant self-regulation. The increase in vagal activity during feeding and the activation of the social engagement system (face–heart connection) allow for warm reciprocal interactions between the infant and the mother (or caregiver), training the vagus for future social interactions. Consequently, breastfeeding may uniquely exercise the vagus nerve, providing a type

of training for efficient reactivity that is integral to social interactions beyond feeding (Brown 2007; Jacob, Byrne, and Keenan 2009).

In comparison to bottle-fed infants, breastfed infants show higher cardiac vagal tone (Lappi et al. 2007; Quigley and Moore 2018; Zeskind, Marshall, and Goff 1992).

The connection between breastfeeding and increased infant cardiac vagal regulation, compared to bottle feeding, may be because breastfeeding requires different movements. For example, breastfeeding requires infants to suck more frequently, utilizing different neuromuscular actions (Moral et al. 2010). The breastfeeding infant's tongue must be very active, evoking effortful peristaltic (wave-like) motions to draw milk from the mother's breast, constantly pressing itself against her breast (Brown 2007). In addition, when breastfeeding, the infant establishes a specific sequential pattern of sucking, swallowing, and then breathing, all actions that actively stimulate the vagus nerve. The bottle-fed infant, on the other hand, experiences something similar to drinking from a straw and is not required to move his/her tongue in the peristaltic motion. In fact, during bottle-feeding, the infant's movements are the opposite; the tongue is relaxed and not moving, and the infant does not establish the sequential breastfeeding pattern of suck–swallow–breathe (Goldfield, Richardson, Lee, and Margetts 2006).

The act of breastfeeding releases oxytocin in mother and baby, lowering stress hormones in mother (Cox et al. 2015). It also supports the development of the oxytocin system in the infant (Moberg, Handlin, and Petersson 2020).

TOUCH

In our ancestral context, young children are affectionately touched/held/carried nearly constantly, including co-sleeping (Hewlett and Lamb 2005). Safe co-sleeping with breastfeeding, "breastsleeping," provides not only breastmilk's vital ingredients, but the tactile and sensory experiences need to grow a healthy neurobiology (McKenna and Gettler 2016). Positive touch in infancy and childhood facilitates growth (Schanberg 1995), neurobehavioral and cognitive development (Feldman and Eidelman 2003), social and emotional development

(Feldman and Eidelman 2004), and moral development (Narvaez, Woodbury et al. 2019); its lack has the opposite effects.

Few studies have examined touch effects on vagus nerve development, though Feldman and Eidelman (2003) found that skin-to-skin contact increased cardiac vagal tone in preterm infants compared to infants in routine care. When there is physical contact with one another postpartum, pulses of oxytocin are released in both mother and infant (Bigelow and Power 2020). Across the life span, positive touch increases vagus nerve stimulation, sense of well-being, and social bonding, decreasing fear, pain, stress and aggression (Moberg, Handlin, and Petersson 2020).

In the evolved nest context, negative touch is not part of the caregiving system. Children are not coerced or punished (e.g., spanking, slapping, isolation), which can shift the trajectory of development toward ill-being and aggression (e.g., Afifi et al. 2017).

WELCOMING CLIMATE AND RESPONSIVE RELATIONSHIPS

In our ancestral context, multiple responsive caregivers (allomothers) support mother and child (Hrdy 2009). The child throughout life is surrounded by a welcoming, supportive community. For baby, welcoming begins with mother:

> After birth, the infant continues to be held in the arms of his mother, and he is in her gaze, hears the sound of her voice, and smells her body . . . A critical part of the infant's body and psyche is the body and mind of the mother. Together they form a symbiotic system that is semipermeable to the rest of the world as well as to each other. The mother controls what the baby takes in his or her membrane, regulating food intake and dealing with elimination, helping to modulate the intake of the sensory world by adjusting the level of lighting, the volume of sound, the amount and nature of touch, and the frequency and intensity of movement through space. The mother determines the permeability of the baby's membrane and as such attempts to discern and accommodate to the baby's innate capacity to process the world at any particular moment. (Reinstein 2006, 7, 29–30)

A welcoming environment means an empathic "holding environment," initially provided by mother but expanded to family and community members. The child feels loved, "the experiencing of the feeling conveyed by 'others' that one is wanted, needed, liked, appreciated, valued, and deeply involved with the 'other' or 'others'" (Montagu 1953, 10). Adults who report more positive home climate experience as children report more secure attachment, better mental health, less social distress, and better social perspective taking (Narvaez et al. 2016). However, there are few studies that specifically examine how a welcoming environment shapes parasympathetic development, urging researchers to examine these variables in both children and adults.

Within our ancestral environment, individuals are immersed in positive responsive relationships throughout life. Children receive consistently warm, responsive care by mothers and other caregivers, starting from their earliest moments of life throughout childhood (Narvaez, Panksepp, Schore, and Gleason 2013). In babyhood, providing responsive care means meeting the needs of the infant in the present moment, keeping infants in an optimal state of arousal—not stressed and not under-aroused (~~Narvaez 2014).~~ Affective communication between the mother (or caregiver) and infant or child is communicated body to body (Trevarthen 2001; 2004). Responsive care requires the implementation of consistent and accurate detection and recognition of children's signals, especially in times when the infant or child may become stressed or is distressed (Szymanska et al. 2017). Infants are kept optimally aroused by caregivers attuned to the affective nuances of the child (Schore 2019), establishing a trajectory for optimal health.

Maternal sensitivity in the first months of life is predictive of long-term infant cardiac vagal regulation (Perry, Calkins, and Bell 2016). Responsive, sensitive parenting is associated with secure attachment, a signal that psychobiological processes are developing well (Schore 2003; Narvaez 2014). Differences in attachment style and cardiac vagal tone for both mothers and infants have been well documented. During the *strange situation paradigm*, an experimental situation that includes separating youngsters from their mothers for a short period with a stranger, several outcomes are typical (Hill-Soderland et al. 2008). During separation, insecure infants are more distressed than infants classified as secure. During reunion, the most stressful time as the dyad comes

back together, mothers of insecure infants show less cardiac vagal withdrawal (less engaged), whereas mothers of secure infants showed more cardiac vagal withdrawal (more engaged), suggesting they were making greater physiological efforts to reengage their infants and repair their relationship. Other studies have also found differences in infant attachment style and maternal cardiac vagal regulation, suggesting a connection between increased maternal responsivity and increased maternal cardiac vagal regulation (Mills-Koonce et al. 2007). Mothers who provide responsive care, not measured during the strange situation, generally demonstrate increased cardiac vagal tone or are less stressed as they provide responsive care across varying contexts. Conversely, mothers of insecure infants demonstrate the opposite association, suggesting that they may be physiologically challenged by the affective demands of their infants.

Oxytocin is also linked to touch. Oxytocin levels in parents is associated with physical closeness, affectionate touch, and coordinated social gaze with the child (Gordon, Zagoory-Sharon, Leckman, and Feldman 2010).

SELF-DIRECTED PLAY

Play is an important part of mammalian childhoods. In nomadic forager communities, play is the foundation of social interaction (Gray 2013). Humor and playful attitudes permeate all activities and social experiences through creative generation of riddles, songs, and jokes as community members conduct daily affairs (Topa and Narvaez 2022). Children are given the freedom to explore and play at will throughout their childhoods. The community focus on play is thought to also counteract tendencies toward dominance with other members, deliberately using playful response to quell aggressive and egotistical behaviors (Gray 2013).

Play facilitates numerous positive outcomes in children. Self-directed free play promotes brain development in general, including affectively beneficial gene expression profiles, emotion regulation, prosocial behavior, and resilience to stress; it is an effective treatment for attention deficit hyperactivity disorder (ADHD) (Panksepp 2007). The changing dynamics of social free play provide opportunities to learn how to shift and adapt to unexpected actions of playmates, affording children opportunities to build emotional and relational

flexibility (Spinka, Newberry, and Bekoff 2001). Lack of self-directed free play in childhood may contribute to altered social, sexual, and conflict interactions with peers (van den Berg et al. 1999).

Several studies have examined biological effects. For example, synchronous play increases oxytocin in parents and their four- to six-month-old infants (Feldman, Gordon, Zagoory-Sharon et al. 2010). During play between mothers and their six-month-olds, coregulated communication was associated with infant cardiac vagal tone (Porter 2003). Gleason and colleagues (Gleason, Tarsha, Kurth, and Narvaez 2021) found that the frequency of free play (with other children in the previous week) predicted six-year-old children's cardiac vagal functioning.

NATURE IMMERSION

In our ancestral context, individuals and communities are immersed in the natural world, developing respectful relations and a sense of attachment to and responsibility for the well-being of the living beings of the biocommunity (Narvaez 2013). In contrast, nature deficit disorder is commonplace among modern industrialized urban populations (Louv 2005).

In adults, frequency of interacting with a green space increases positive emotions and general well-being, as well as reducing stress and, potentially, morbidity and mortality (Cleary et al. 2017). Younger children especially benefit from nature immersion (Barrable and Booth 2020). Few biological studies have been conducted, though the effects of direct contact with the earth appear to increase cardiac vagal tone (Chevalier and Sinatra 2011; Chevalier et al. 2012).

In conclusion, the neurobiological and clinical sciences are demonstrating the importance of each nest component for fostering health and well-being. Elsewhere, we discuss how the evolved nest is the first step on a wellness-informed cycle (Narvaez 2022a). The evolved nest establishes a healthy psychosocial neurobiology, which leads to an adulthood characterized by wellness and the growth of wisdom. The wellness-raised adults maintain communities where everyone's basic needs are met, continuing the cycle of cooperative companionship. The cycle includes the promotion not only of a healthy physiology but of deep sociality and cooperative morality.

NESTED SOCIOMORALITY

The provision of the nest ensures a well-functioning neurobiology (e.g., stress response), which mostly grows after birth and undergirds flexible intelligence and sociality (Carter and Porges 2013). The nest also influences the type of psychological capacities children develop and adults display. With nested support, the human mind, notably through the early growth of right hemisphere functions, develops an integrated brain associated with polysemy, paradox, and other capacities found in noncivilized societies that are fundamental to accepting diversity and ambiguity (Narvaez and Tarsha 2021; Tarsha and Narvaez 2023a).

Meeting children's basic needs through the companionship care of the evolved nest cultivates personal and social aspects of justice. Justice is centered on right-ordered relationships by providing what a person is due or requires in order to advance human fulfillment (Philpott and Powers 2010). Denial of one's due in early life can result in lifelong impairment. To build a species-normal human nature, a matter of justice, children's basic needs must be met. This should not be optional. Virginia Held (1993) suggested that children's well-being ought to be the center of community morality:

> The activity of creating new social persons and new kinds of persons is potentially the most transformative human activity of all. And it suggests that morality should concern itself first of all with this activity, with what its norms and practices ought to be, and with how the institutions and arrangements through society and the world ought to be structured to facilitate the right kinds of development of the best kinds of new persons. The flourishing of children ought to be at the very center of moral and social and political and economic and legal thought, rather than, as at present, at the periphery, if attended to at all. (56)

To place children centrally in a community entails various forms of humility: intrapersonal (e.g., self-acceptance), interpersonal (e.g., other accepting with minimal ego), community (intergroup), and ecological (interspecies respect) (Narvaez 2019a). Moral community begins with the humble support

of mothers. Mother is the All for the fetus. Birth transforms the relationship whereby for the baby mother is the bridge to the rest of life. If the bridge is weakened or absent, the steadiness of the child is impaired. That is, their ability to trust and connect depends on their experiences of trust and connection with mother after birth. Mother helps the child extend their circle of regard to others by providing the grounding of social practice, accompanied by encouragement to commune with others, including the more than human.

The sociomorality promoted by ~~the evolved developmental niche (EDN)~~ includes well-constructed emotions, empathic intuitions, and skilled knowhow for relational attunement. Even though prosocial behaviors and motivations are evident in the first years of life, early life experiences shape the physiological processes needed for enhanced prosociomorality of later years. The evolved nest promotes the maturation of cooperative capacities through the ongoing social coordination among child, caregivers, and play partners.

Triune ethics metatheory (TEM; Narvaez 2008; 2014) describes the kinds of moral functioning that nestedness promotes. In face-to-face relations, the individual beholds and receives the other, together in the fullness of being, with reverence and presencing. They demonstrate flexible, relational attunement characterized by empathy, perspective taking, and intersubjectivity. With the maturation of abstract thinking and executive functions for imagining possibility outside the present moment, the individual exhibits integrative brain functions through communal imagination, characterized by an ethic of love, inclusive egalitarian respect, and sympathetic action. The evolved nest promotes peaceableness through the continuous practice of meeting basic needs through sharing and receptively attuning to others. Peaceableness is "not passivity, but an alert, informed, practiced, and active state of being" (Berry 2001, 7). It is grounded in the child's first friendships (Narvaez 2022b).

Together, empathy, compassion, and prosociality are sociomoral behaviors that emerge in early life nestedness, setting the stage for societal thriving (Narvaez 2017b). Species-normal sociomoral behaviors enable individuals to develop rich social connections that catalyze personal growth and thriving across the life span (Bielby 2021), supporting societal functioning at large, and enabling cooperative interactions among all actors within a community (Narvaez 2014). Further, sociomoral foundations become the grounding for

political and practical institutional compassion, a key contributor to effective community conflict resolution aimed to overcome hatred, fear, repulsion, and protracted violence (Rothbart and Allen 2019).

The scope of our ancestral morality is not circumscribed to the human community. Instead, the natural world is part of a community of beings to which we belong, a set of more than human entities (rivers, mountains, animals, plants) to be respected for their longer wise existence on the earth (Forbes 2008). Each has their own purpose and agency, and we are morally responsible for their well-being (Kimmerer 2013). The evolved nest supports the holistic development of ecological intelligence—the receptive intelligence to Nature's signals and sentience, and a heart-connectedness to living Earth (Narvaez 2014). These are accompanied by skilled knowhow for fitting into the biocommunity and enhancing creation rather than using it up. A holistically moral community's stories told and lived are those of inclusion and responsibility to "all our relations," pointing out the follies of ego and greed (Topa and Narvaez 2022). Daily ceremonies display respectful gratitude, and promote connection and healing. No one is coerced but is guided by inner spirit (McPherson and Rabb 2011). Elders and virtuous mentors are plentiful. The primary aims are relational balance and harmony, openness, and connection.

The evolved nest creates an organic morality, one fostered from the bottom up, through all physiological and psychological levels as the scaffolding for higher order moral capacities (Narvaez 2016). Children grow an integrated self whose well-being interacts with social and moral thriving (Narvaez et al. 2021; Narvaez, Woodbury et al. 2019). Instead of evolution moving humanity toward an emotionally and relationally detached rationality, evolution shaped our biology of love through cooperative child raising (Narvaez 2017b; 2021). Darwin's moral sense, attributed to inherited capacities aligned with those of other animals, appears to be a postnatal construction built from nested experience that shapes values (Narvaez 2017a; 2019c).

THE BIOLOGY OF TRAUMA REPLACED THE BIOLOGY OF LOVE

It has become normative to *not* provide the evolved nest in industrialized market-based economies. The multiple contributing factors to the degraded evolved nest (undercare) include the work focus of adults, the emphasis in media and education on genetic inheritance, a general lack of awareness of epigenetic effects (experience turning on or off genes), and widespread misunderstandings of child development and children's basic needs (Narvaez 2014).

Common infant treatment violates our evolved baselines for early experience and the development of a cooperative human nature. Lack of maternal support transfers to fetuses and children as an unwelcoming environment. Newborns experience noxious stimuli and painful procedures like circumcision (Liu et al. 2007). Infants are often left alone untouched, left to cry, sleep trained, and not breastfed for the species-normal length needed for lifelong health. Mothers are often isolated with children, lacking the allomothers that the dyad needs, undermining the companionship care children evolved to expect (Hrdy 2009). Free play has been curtailed by anxious parents and the replacement with screens, leading to various mental and physical health problems, as well as the impairment of sociality (Skenazy 2010; Stearns 2004). Nature disconnection—"Nature deficit disorder"—has become the norm among children and adults (Louv 2005).

All these missing pieces represent early toxic stress (or early life stress), which is responsible for enhancing amygdala functioning, fear response, and threat reactivity (Lanius, Vermetten, and Pain 2010). A missing evolved nest increases the likelihood of suboptimal (species-atypical) outcomes, including the development of psychological wounds and physiological pathologies that can persist across the life span (Botros, Hodgins, and Nemeroff 2019). Unnested early life undermines right brain development, which includes various forms of self-regulation as well as capacities for connection and self-transcendence (Schore 2009, 2019). Instead of having the polysemy capacities mentioned earlier, children are toxically stressed routinely, which traumatizes them, enhancing functioning of prehuman survival systems at the expense of dynamic sociality.

Denial of the evolved nest, what babies and children and adults expect, can alter moral development. A different sociomorality is promoted when ~~the EDN~~ is not provided. Instead of the relational flexible attunement and communal imagination mentioned earlier, self-protectionism is enhanced (oppositionalism and withdrawal), which is later enhanced by abstracting capacities (vicious and detached imagination). The evolved nest keeps babies from any extensive fear experience, whereas modern birthing and caregiving practices enhance the fear response during malleable brain development pre- and postnatally, shaping the system for dominance hierarchy. The trauma does not go away but becomes embedded in the dysregulation of multiple systems and a discoordination of getting along with others (Narvaez 2014).

CONCLUSION

Modern societies have shifted the baselines for normality in multiple areas, including child raising, undermining children's full human potential (Narvaez 2019b; 2019c; Narvaez and Witherington 2018; Tarsha and Narvaez 2023b). This has impaired capacities for human community and earth community membership (Narvaez 2020). Conditions in early life shape the functioning of the body–brain–mind in ways that affect future choices, future free will. A child who survives without love will be less flexibly cooperative and socially skilled, and more easily triggered by threat. They will likely have a less agile consciousness and be more oriented to dominance–submission relationships and sociopolitical structures (Narvaez 2022c).

Because of its critical significance in shaping either positive (when provided) or adverse (when deprived) long-term development, the evolved nest should be considered a human birthright for infants and children. The evolved nest is a companionship system organized to optimize normal development. The love-in-action of the nest grows the fullness of our humanity, which includes complex, flexible social skills, sense of connectedness to dynamic life energy all around, and thriving. Love is particularly important in early life, as it helps the child's uniqueness unfold.

> To inhibit or prevent the expression of love is to do violence to the needs, to the structure, and to the functioning of the organism. To love and to be loved is as necessary to the organism as the breathing of air. Insofar as the organism fails in loving, it fails in living, for to live and love is, for a human being, the equivalent of healthy living. To live as if to live and love were one is not simply an ideal to be achieved, but a potentiality to be realized, a destiny to be fulfilled. (Montagu 1953, 19)

It is a societal choice how human nature will be raised. If the aim is the flourishing of humans and the rest of Nature, then the evolved nest must be restored to all children. Nestedness is also important for maintaining our humanity (Narvaez 2024), but that is another story.

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Darcia Narvaez is ~~part of~~ the Department of Psychology and the Kroc Institute ~~of~~ International Peace ~~Research~~ at University of Notre Dame.

Mary S. Tarsha is [author please provide a brief biography].