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Abstract and Keywords

What has gone wrong with humanity that it is the only species that is destroying its habitat and justifying it as good or inevitable? The quality of a child's early nest, including experience with mother and others, co-construct the nature of the child, shaping a highly intertwined biology and sociality. The species-typical nest that humans inherited for their young facilitates the development of a self that is relationally attuned and communal and receptively intelligent. Neurobiological studies today support the general insight from psychoanalytic theory that early experiences with caregivers initialize the formation of the self. But civilization typically does not provide the evolved nest, promoting a species-atypical pathway for social and moral development, one of self-focused protectionism. Cultures that adults build and perpetuate are founded on the human dispositions brought about by early experience.

Keywords: evolution, evolved nest, evolved nest, small-band hunter-gatherer, moral sense, self, neurobiology, social schemas, toxic stress, chronic stress

Introduction: The 'Evolved Development Niche' as a Baseline for Human Well-being

What has gone wrong with humanity?[1] How can it be that a particular human culture[2] has come to dominate most of the earth, acting in effect to destroy the planet (e.g. Millennium Ecosystem Assessment 2005; Ceballos, Erlich, and Dirzo 2017) and at the same time creating a cultural narrative that justifies such destruction (Ferguson 2012; Korten 2015)?

Evolution, Childhood, and the Moral Self

Freud (1929/2002), too, wondered about the state and behaviour of humanity and drew generalizations from his patients. His work led him to hypothesize an inborn id as a primary source of difficulty. Contrasting with Freud's nativism, Hillman and Ventura (1992) fingered a century of psychotherapy for inventing narratives for their patients on which to blame what they viewed as socially caused illnesses. In interviews by Ventura transcribed in the book, Hillman points out that other societies had less egocentric and isolating forms of dealing with life's troubles; they would never blame childhood experience for them, as psychotherapy can tend to do.

However, Hillman assumed that childhoods were similar across cultures (as, more recently, does anthropologist David Lancy 2015). This is untrue. This chapter will argue, against Freud, that his conception of the id represents a misshapen human nature that emerges from the denial of evolved needs through an abandonment of the 'evolved nest', common in 'civilized' societies. And it will argue, against Hillman, that the dominant culture (industrialized capitalism) has shifted away from providing children with what they evolved to need, perhaps especially in the USA whose overall health continues to worsen (e.g. National Research Council 2013) and which exports its child-raising ways to other nations.

One of the problems with many assessments of human well-being is a lack of a baseline against which accounts of normal and deviant development may be judged. Scholars often assume their own experience of contemporary life as a baseline (Pauly 1995), leading to mistaken assumptions and interpretations. For example, in a widely cited study used to support parental detachment, Robert Levine and colleagues (LeVine et al. 2008) compared the infant caregiving of Boston mothers with that of the Gusii in East Africa. They used as a baseline for normal human behaviour the Boston mothers' high verbal interaction with their infants, assuming it was necessary for successful child outcomes. They were surprised that Gusii adolescents showed no signs of deprivation despite the fact their mothers were not verbally 'attentive' when they were young. Actually, the researchers were using the wrong baseline for normal human infant care. The Gusii infants and children were cared for in the manner that characterized 99 per cent of humanity's genus history (Konner 2005), with non-verbal responsiveness and extensive affectionate touch that kept the infants calm and growing well—as social mammalian young evolved to need, and which are known now to play a large role in the development of neurobiological structures and socioemotional intelligence (Narvaez 2014; Narvaez, Panksepp, Schore, and Gleason 2013; Narvaez, Wang et al. 2013). Unfortunately, it is common for research to be based on faulty assumptions, leading to faulty conclusions (Henrich, Heine, and Norenzayan 2010). Establishing baselines from the outset is a way to avoid the creeping biases that otherwise enter into conceptualizations of research and its interpretation.

A first baseline that should be mentioned is the highly cooperative nature of the natural world. The biosystems of the planet are all cooperative, operating in a gift economy of give and take and give (Bronstein 2015; Margulis 1998; Paracer and Ahmadjian 2000). Competition is a thin icing on the thick cake of cooperation. In fact, each human being is

a community of cooperation with trillions of microorganisms that keep alive the individual who carries 90–99 per cent non-human genetic material (Dunn 2011). Only recently in human genus history has a dominator culture emphasized a competitor model that undermines the cycle of give and take in the natural world and represents a shifted baseline about how the world works (Worster 1994). Even within the family, cooperation is fundamental where costs and benefits balance among members over time.

Second, we need a baseline for human development against which comparisons are made. The baseline I use is humanity's species-typical 'nest', niche, or developmental system (Gottlieb 2002). What is species-typical for a human being? Time-tested over millions of years by our ancestors, the human 'evolved developmental niche' or EDN (Narvaez 2016) represents the inherited characteristics of early life experience provided for 99 per cent of human genus existence (until agriculture came into existence, after which many societies decreased the provision of the EDN). Most characteristics of the human EDN emerged with social mammals over thirty million years ago and intensified with human evolution—(a.k.a. 'hunter-gatherer childhood model;' Konner 2005). The EDN for young children includes: soothing birth experience (no separation of mother and baby, no inducement of pain, e.g. smacking, suction, or skin pricks, which is routine today); responsiveness to needs (preventing distress); infant-initiated breastfeeding for several years; extensive positive touch (nearly constant in first year) and no negative touch; multiple, responsive adult caregivers and maternal support; social climate that promotes positive emotions; free play in nature with multiple-aged playmates (throughout childhood and beyond) (Hewlett and Lamb 2005). All these components optimize normal development both neurobiologically and psychologically (for reviews, see Narvaez, Panksepp, Schore, and Gleason 2013; Narvaez, Valentino Fuentes, McKenna, Gray 2014). Why is the EDN important for optimizing normal development? Because the human neonate is born at least eighteen months early compared to other primates, with only 25 per cent of the adult-sized brain at full-term birth, so most brain and body systems develop and form postnatally (Trevathan 2011).

The quality of the early nest, including experience with mother and others, co-constructs the nature of the child, shaping a highly intertwined biology and sociality. In fact, humans are biosocial creatures through and through. That is, the functioning of a child's neurobiology is highly influenced by social experience and the biology that develops from that experience guides the nature of the child's sociality. Significant foundations are established during sensitive periods in the early years across brain and body systems, and other capacities are layered upon these. Life is an ongoing biosocial experience wherein gene expression shifts from experience to experience, continuing to build physiologically based habits of getting along in life.

Neurobiological studies today support the general insight from psychoanalytic theory that early experiences with caregivers initialize the formation of the self (Panksepp and Biven 2011).[3] The self's emotionally dynamic structure, with elements that importantly are non-conscious, derive from biosocial learning in childhood. In what follows, I examine how the self relies on the development of particular embodied knowledge structures or schemas

through interaction with caregivers, which psychoanalysts have theorized as object relations. But it is important to realize that early co-construction of the self can go in a species-*typical* or a species-*atypical* manner. Too many selves in existence today have been initialized in a species-*atypical* nest, leading to disordered emotional foundations that build ethical orientations of self-protectionism instead of communalism.[4]

In what follows, I explore and explain the importance of the EDN for our understanding of the social and moral self, providing a wider empirical context for psychoanalytic ideas concerning the centrality of object relations in child development. I begin with the idea of social schemas.

Social and Self Relational Schemas

The species-typical nest that humans inherited for their young facilitates the development of a self that is relationally attuned and communal. For a compassionate ethical self to be fostered and maintained throughout childhood, adolescence, and early adulthood, particular learning experiences are needed. Even in adulthood, attention to the nature of our environments and experiences is required. In our small-band hunter-gatherer past (our 99 per cent), this took place as a matter of course (Narvaez 2013, 2015).[5] The focus here will be on early childhood experience.

Starting perinatally, the sense of self is an emergent property, an outcome of biosocial experience, based in the development of implicit socioemotional intelligence that includes a deep attunement to the social world.[6] The moral self is formed through relational experience. In early life, reciprocal communication and companionship care convey to the infant that s/he matters, that the feelings the infant communicates matter, that relational communion is the normal way to be in the world. From beginnings in the womb and under good care after birth, for the child the world of experience is centred around Mother, gradually expanding to include a community of other 'mothers'. The gradual distinction of the internal and external environments occurs through experience with multiple caregivers who sensitively bring to life the child's self within a social world.[7]

Experiences in early life establish how and how well the brain develops, not only for health and intelligence but sociality and morality.[8] It is not surprising that early experience has long-term effects on all biological systems, as humans are complex dynamic systems. Interacting with the maturation and growing history of the child, early experience co-constructs the cognition–emotion–action patterns that form the implicit world view the child takes along throughout life. One might say that early life furnishes apprenticeship for social, cognitive, and moral development.

From a cognitive science perspective, general understandings of how the world works form from the accumulation and transformation of specific experiences. In cognitive information processing theory, these general understandings are often called schemas

(Piaget and Inhelder 1969; Taylor and Crocker 1981). As generalized knowledge structures residing in long-term memory, schemas organize an individual's operational activities (Piaget 1970; Rummelhart 1980; Taylor and Crocker 198l). Schemas develop from repeated experience, drawing generalizations from recurrent patterns. Their form is tightly organized but flexible in accessibility and adaptation—each instantiation of a schema alters the schema. More than 'in the mind', they connect emotion, cognition, and behaviour, subsuming procedural knowledge (knowing how), declarative knowledge (knowing that), as well as embodied cognition formed from situated (context-specific) experience, corresponding to ways of being. Schemas arise from repeated opportunities to solve a particular problem; since humans face similar problems, many schemas are similar across individuals (Marshall 1995). Some basic schemas developed in early life are related to the physical world (e.g. gravity's effects on objects we drop; Piaget 1954). Other early-forming schemas concern the social world, are more dynamic, and fluctuate with each situation. These dynamic forms are part of a set of schemas we develop for the self and the social life.

Social schemas reflect patterns of generalized experience applied within or across social situations or in ways of being for particular relationships. Some schemas are chronically employed by an individual (e.g. assessing others based on weight) and become 'chronically accessible'—easily and quickly deployed because of frequent use (Mischel and Shoda 1995). These can be anchored to particular situations (e.g. moments with mother) or generalized across them (relations with women). Chronically accessible schemas influence how an individual processes life events, directing attention, filtering and organizing stimuli; these schemas influence the selection of life tasks and goals and translate into behavioural routines that become highly practiced and automatic (Cantor 1990). Thus, chronically accessible schemas contribute to the form of a personality, varying by particular situation. These activated schemas guide expectations, winnowing and chunking experience, and shape habitual reactions. They include as a subset the schemas that psychoanalysts have termed 'object relations' (rather unfortunately, given that such schemas concern relations between people/subjects).[9]

Schemas and Object Relations

On Westen's (1990: 686) definition, object relations are 'the cognitive, affective and motivational processes mediating interpersonal functioning, and … the enduring patterns of interpersonal behaviour that draw upon these intrapsychic structures and processes'. Object-relations theory argues that the need for relationships with others is primary, rather than dependent—as Freud thought—on the satisfaction of other desires (for nourishment or bodily pleasure). Interpersonal relations are the framework within which child development, especially emotional and social development, takes place.

Central to this is the thought that the self is built up from representations of significant others and of relationships to them. These include not only identifications the child makes with others, but also experiences of the self in relation with others. Thus, in her self-formation, the child constructs psychological ('internal') models of herself, of others, of particular relationships with others, and of relationship structures more generally. Not only are relations to *actual* others of central importance to the child's developing social and moral self, so are the child's *experiences* of such relations and *interpretations* of those experiences. Thus, while actual events in childhood impact on the formation of a child's object relations, this impact is mediated by the child's developmental level, prior experience, and an already-emerging personality structure.

The similarity between object relations and the concept of social and self schemas is clear from the descriptions provided, and Westen makes the link explicit (1990: 687). He argues that object relations are best understood as organized networks of associations and encoded in many different modes of representation (including linguistic, imagistic, bodily, and procedural knowledge; here I add neurobiological). One finds similar connections drawn in the conceptual frameworks of other theories that seek to straddle the empirical and psychoanalytic models, including the 'internal working model' of attachment theory (Cassidy and Shaver 1999), Stern's (1985) concept of 'RIGs' (Representations of Interactions that have been Generalized), and Beebe and Lachmann's (2002) 'interactional structures'. As Eagle (2013: 887) comments, although there are differences between these theories of unconscious self–other representations, they have much in common, in particular that such representations are acquired early in childhood as a result of repeated patterns of interaction with others, that they involve implicit and procedural knowledge, and that they strongly influence one's relations with significant others later in life. Understanding object relations as schemas does not detract from nor overlook the significance of the specifically psychodynamic elements of object relations, such as their role in psychic conflict and transference (see e.g. Andersen and Thorpe 2009; Westen and Gabbard 2002a, 2002b). Rather, the theory of self and social schemas can be enriched by attention to their psychodynamic operations.

Early Social Schemas and 'Vitality Dynamics'

Thus, according to object relations and social schema theories, understandings of the social world are shaped by early experience, specifically, by the mothering (nurturing responsive care) received from mothers, fathers, and others. A vibrant, true self develops within relationships of mutuality that 'affirm, validate, acknowledge, know, accept, understand, empathize, take in, tolerate, appreciate, see, identify with, find familiar … love …'—what Jessica Benjamin calls practices of *mutual recognition*, experiences commonly noted in research on mother–infant interaction: 'emotional attunement, mutual influence, affective mutuality, sharing state of mind' (Benjamin 1988: 15–16).

Simultaneously moulding neurobiological and psychological structures, these experiences ground expectations for the social relationships to come.

Humans naturally experience others in terms of vitality or energy dynamics (Stern 2010). They evaluate others in terms of their emotions and mental states, what they might be thinking and what they really mean, their authenticity in self-expression, anticipating what they are likely to do next, as well as the status of their health, on the basis of the fluctuating vitality expressed in their nearly constant movement. At least five dynamic properties are linked together as a gestalt in our (and babies') experience of vitality: time, movement, intention/directionality, force, and space. These are apprehended together without conscious awareness (though may be studied in isolation).

Vitality dynamics become chronically accessible schemas for ongoing social behaviour. The early social life of the baby shapes capacities for recognizing and performing holistic dynamic movement in the social world through experiences in everyday life: the practice of micro-communicative movements with caregivers. From two and a half months to about six months of age, the baby's behaviour is highly responsive to parental behaviour through touch, facial expressions, and vocalizations. In the Western world, 'face-to-face play becomes the main "game"' (Stern 2010: 106). Generally, some culturally appreciated combination of communications take centre stage: eye gaze, facial expression, vocalizations, gestures, body tonus. Subsequently, as babies become better able to control movements, they easily mirror social partners and initiate social events. Interactions become rich and mutual.

Daniel Stern asks why nature 'planned' for babies not to speak or understand words for the first year or so of life. His answer is that they 'have too much to learn about the basic processes and structures of interpersonal exchange', such as 'the forms of dynamic flow that carry social behaviour' which they must learn 'before language arrives to mess it all up' (Stern 2010: 110). The basic structures of interpersonal exchange 'are all non-verbal, analogic, dynamic Gestalts that are not compatible with the discontinuous, digital, categorical nature of words' (Stern 2010: 110). What kinds of things is a baby prepared to learn socially in the first eighteen months?

- Mutual eye gaze practices (how, how long, with whom)
- How to read postures
- How to solicit others for needs such as food or play
- 'Rules' of games
- Turn taking
- Greetings
- Joking
- Expressing affection
- Making friends

• And much more

This implicit, relational, and non-verbal knowing that is predominately processed in the right hemisphere of the brain rapidly develops, under conditions of good care, in the first years of life. Parent 'matching/mismatch of vitality forms can shape what the infant does and how he feels about doing it. It is like sculpting his mind from the inside out' (Stern 2010: 115). The interpersonal dynamics of synchronizing motives, intentional states and behaviours with another—the forming of a duet of 'being with' the other person by participating in the dynamic flow—can be described as a *communicative musicality* (Trevarthen 1999). Each relationship is a way to implicitly learn an alternative pattern of social being: 'Dad and I relate this way; Mum and I relate that way'. The child learns to be alive together with each caregiver, an aliveness missing in many who suffer early trauma (Clancier and Kalmanovitch 1984). Generalizations about relationships are made from these early experiences.

Human infants, like other apes, develop strong attachments to caregivers in the first year of life. In fact, the neurobiology of attachment appears to ground lifetime brain function as well as social and moral behaviour (Gross 2007). Emotions that guide 'attachment for companionship' are innate and test possibilities and values of shared experience (Trevarthen 2005). Loving care is conveyed by the caregiver's enjoyment of bathing, clothing, and feeding the child—'it's like the sun coming out, for the baby' (Winnicott 1957: 14–15).

Psychologically, the ongoing (emotional and physical) support that caregivers provide communicates to the young child the trustworthiness of his body signals and the safety and supportiveness of the world in getting needs met. Consistent responsiveness leads to a self highly secure and deeply rooted in the social landscape, a self who skilfully derives pleasure from and prosocially contributes to the community. When caregivers are not ongoingly supportive (e.g. isolating the baby from touch and calming comfort), the child's foundational neurobiology and sense of living can form instead around a sense of danger (Sandler 1960), along with a sense of rejection or negation (Litowitz 1998).

Sandler (1960) suggested that the early sense of danger grows into cynicism or anxiety, minimally into an adult with little trust or confidence in the self and the world, and maximally into an adult with personality disorders. The insecure self harbours a sense of abandonment and badness, apparent in insecure attachment, which unconsciously flavours interpretation of life experience and propels behaviours to avoid those feelings, demonstrated in neurobiological inflexibility ('stiffness' of the mind or 'heart'). Using the terms of the early object-relations theorists, such as Klein and Fairbairn, we may seek to understand this as involving the internalization of a 'bad object', although such phrasing is heavy with various controversial theoretical commitments, especially if internalization is understood as a defensive process motivated by anxiety, rather than the implicit development of a schema through habituation.

But however one further theorizes the process, we may agree that early dynamic experiences undergird our expectations and sensibilities for social life, rooted in neurobiologically grounded 'narratives' or schemas for the self: 'I am good and competent and the world is to be trusted' versus 'My urges are bad and the world is to be distrusted' (Narvaez 2011). 'Dynamic forms of vitality are part of episodic memories and give life to the narratives we create about our lives' (Stern 2010: 11).

When a young child's evolved needs are met through companionship care, including experiences of ongoing intersubjectivity with familiar, loving others, cooperation with self and others becomes an intuitive baseline for life (Narvaez 2014; Trevarthen 2005). Are there other early caregiving practices that are critical to the formation of a social and thence a moral self?

Species-Typical Child-Raising and the Evolved Developmental Niche

A key oversight of Freud that still continues within most branches of the social sciences is the failure to understand the importance of attending to the particular types of early care a child experiences for shaping specific individual capacities, which Stern (2010), for example, tried to explicate. (Researchers who are starting to focus on species-expectant care include Greenough, Black, and Wallace (1987) and McLaughlin, Sheridan, and Nelson (2017)). Winnicott (1957) emphasized the 'good enough' holding and handling environment that allows a baby to feel omnipotent until ready to face the reality principle. But we can go further and be more specific if we consider *typical* and *atypical* child-raising from an evolutionary perspective. Species-typical child-raising involves the evolved developmental niche (EDN) described in the Introduction (soothing perinatal experience, extensive breastfeeding and affectionate touch, quick and warm responsiveness to needs, multiple responsive adult allomothers, positive social support and climate, self-directed free play). These components provide the environment for optimal development, matching up with and constantly interacting with the maturational development of the child with epigenetic and plasticity effects. *Atypical* child-raising occurs outside the nest, much like Harry Harlow's (1958) monkeys, raised without maternal love, touch, responsiveness, and breastfeeding. The results are disturbed development.

Most people, including scholars and practitioners, still lack awareness of the type of child-raising that is typical for our species and how strange and atypical civilized child-raising is for the human species (although I think that perhaps many psychotherapists suspect that something went wrong with the childhoods of their patients, that mistreatment or trauma occurred at some point from babyhood to early adulthood). Early life experience may be the most critical factor in shaping the type of human being that is

raised. Schemas for self in relation to other, representative of the quality of one's neurobiological self-regulation and social growth, can go awry in a variety of ways depending on the nature of undercare.

As noted by Winnicott, the ecology of the child is a system: 'The unit is not the individual, the unit is an environment-individual set-up. The centre of gravity of the being does not start off in the individual. It is in the total set-up' (Winnicott 1975: 99). Along similar lines, Urie Bronfenbrenner's (1979) ecological systems theory identifies several levels of interactive influence in the child's life (e.g. family and peer relations, relations of the family with the community, job pressures on parents, cultural and historic events). Bronfenbrenner's theory provides a *vertical* view of a child's life which is complemented by the *horizontal* view of development across generations provided by evolutionary systems theory (Oyama 1985). This focuses on a host of evolutionary inheritances (genes are only one of many inheritances) such as the developmental system or nest, maternal ecology (health, nutrition), and the cultural and environmental ecologies left by prior generations, among other extra-genetic features. Relational developmental systems meta-theory (Overton 2013, 2015) focuses on the *ongoing interactions* of individual and context as the individual self-organizes through developmental processes. Each theory points to the *constant dynamic interplay* of many elements in the developmental life course. Ethogenetic theory (Narvaez 2018) integrates these theories to describe the nature and pathways of humanity's moral development, focusing on inheritances and neurobiological foundations that are epigenetically and plastically integrated in early childhood as the child functionally adapts to the social and physical environment.[10]

The child has a built-in maturational schedule, in which layers of foundation are laid for more complex, later-developing systems, all self-organizing during sensitive periods (Knudsen 2004). Caregiver interaction with a child is not a moulding of clay but the layering of a rapidly growing agent. Physiologically, multiple systems are setting parameters and thresholds based on maturational schedule and the nature of early care. Of course, proper environmental 'holding' ideally is provided by adults who themselves were well cared for, who are willing to adapt to the needs of the baby in the critical first months and years.

One complex and fundamental set of capacities highly influenced by early experience is basic self-regulation, involving regulatory systems that are all too often considered innate and involuntary (e.g. the stress response).[11] We know now that most self-regulatory systems (e.g. the stress response) are shaped by experience during sensitive periods inside and outside the womb (Lupien, McEwen, Gunner, and Heim 2009). Multiple neurobiological systems and layers of systems (e.g. those underpinning other systems such as vagal tone, Porges 2011) which become increasingly self-organized are nurtured into being by postnatal care. Neocortical self-control of arousal (through the later-developing cortex) is not in place till the end of the first year, so maintaining proper arousal is largely up to the caregiver, who keeps baby from over- or under-arousal. Of course, the baby has limited capacities for self-calming (although can do simple things

like turn away or close eyes), but otherwise relies on caregivers to guide the development of self-regulatory capacities.

Babies are optimally aroused to play and be happy in a particular zone of arousal. Too little or too much parental stimulation shifts the baby out of the optimal zone. Caregivers help baby stay calm with skin-to-skin carrying (a remarkably calming tool), rocking and patting, and other touch-plus-movement behaviours. Representatively, the orbitofrontal system connects directly to the autonomic system and, when properly functioning, regulates its two subsystems (sympathetic and parasympathetic). The sympathetic system mobilizes the body for action (flight–fight) whereas the parasympathetic system conserves energy (freeze–faint) to preserve life. When the orbitofrontal system is immature or underdeveloped from lack of comforting touch and responsive care, both the sympathetic and parasympathetic systems can mis-perform. The child will have difficulty adapting appropriately to situations and will shows a deficit of empathy (Schore 2003a). Instead of automatic self-soothing and self-regulation after a stressor, the individual will respond cacostatically—i.e. too strongly or too weakly, taking extra time to return to homeostasis.

Much of the social self is grounded in the early months and years when foundations for multiple systems are laid down, interactively shaped among themselves, and tuned up by experience. The same, I argue later, can be said for the moral self. Morality too emerges from neurobiologically wired capacities significantly shaped during this period. Before turning to that argument, it is worth briefly noting the species-typical context for human development provided by small-band hunter-gatherer communities.

Small-Band Hunter Gatherers: Humanity's 99 Per Cent

Archaeological studies have indicated that the human genus has been around for over two million years.[12] And prior to the emergence of agricultural settled societies in the last 12,000 years or so (humanity's 1 per cent), all human beings spent their lives in small-band hunter-gatherer communities, hundreds of which still exist today. Anthropologists note the similarities of these communities which developed independently all over the world.

Small-band hunter-gatherers (SBHG, aka nomadic foragers) are groups of about five to twenty-five individuals whose membership shifts from day to day. They have no possessions, forming 'immediate-return' societies—consuming food resources as they are encountered and not hoarding resources, including cultivation of plants or domestication of animals. Despite living in vastly different landscapes around the world, they share similar cultural and personality characteristics. They live within a set of landscapes over which they migrate regularly. They live in highly cooperative but fluid groupings with deep values of egalitarianism and sharing. There is no coercion, even between adults and children, but high autonomy (Boehm 1999). All over the world SBHG provide the evolved developmental niche (EDN), which converging evidence suggests leads to the adult personalities that are also similar around the world: generous, calm, content, humble, kind, highly autonomous, and highly communal. Unlike the characters in the mythologies about them promoted by some scholars, SBHG are not warlike (they have no possessions to fight about), though jealous male rages are recorded.[13]

The 'Moral Sense'

For the remainder of this chapter, we turn to the question of the implications of this broader view of the human situation in terms of the EDN for our understanding of morality and the place of social and self-schemas/object relations in moral development.

First, what do species-typical experiences bring about in terms of morality? Species-typical upbringing leads to the moral capacities noted among the adults of indigenous peoples around the world by first-contact explorers and later by anthropologists, but perhaps most clearly by Charles Darwin.

In response to Herbert Spencer's early arguments that selfishness and aggression were part of human nature, Darwin (1871) brought forth the idea of an evolved 'moral sense.' He identified its characteristics—social pleasure, empathy, concern for the opinion of others, and habit development for the sake of the community—and how they were apparent in other animals that had evolved prior to human beings, making the moral

sense part of human nature, not the other way around. He assumed these were inherited characteristics. But recent evidence suggests otherwise—that they develop after birth and may require the early nest (Kochanska 2002).

Ethnogenetic theory describes the early-life neurobiological foundations of an individual's preferred moral orientations (Narvaez 2016). For example, normal, species-typical, human development, with EDN provided and secure attachment established, fosters a relationally attuned, emotionally present, heart-centred orientation. How do we know this? We can see what is species-typical among small-band hunter-gatherer communities who provide the evolved developmental niche for children throughout their lives and end up with the type of personalities described above (for reviews, see Ingold 2005; Narvaez 2013). (The alternative, self-centred orientations that develop with species-atypical care are described later in the section on self-protectionism).

The key to human development, and especially social and moral development, is relationship, beginning with conception, gestational experience, and early life. Many babies died when it was assumed that physical care (food, warmth, nourishment) was enough (Spitz 1945). As emphasized previously, early relationships provide the soil for the growth of neurobiological systems (e.g. neurotransmitter function and proliferation, stress response system function, vagus nerve myelination). During this time much more than internal working models or object relations are set up: the multiple neurobiological systems set thresholds and parameters for life. Our psyches rely on these psychobiosocial foundations.

Firm foundations for a good life include the proper shaping of the visceral-emotional nervous system on the hypothalamic-limbic axis (Panksepp 1998), which includes multiple limbic and subcortical structures and multiple types of neurotransmitters. Evolved emotion systems of *care* and *play* (the italics denote physiologically mapped emotion systems), which guide sociality and learning (Konner 2002), are the primary systems for the social self, self identity, and sense of what is true (MacLean 1990). 'Knowledge of the world is gained by moving about in it, exploring it, attending to it, ever alert to the signs by which it is revealed' (Ingold 2011: 55). So too, the social world. From our embodied experience, we learn to see and to be. Our knowledge is situated in the direct engagement with the world. Existing in a dynamic flow of being is enlivening. '"Forgetting" ourselves is how we lose our sense of separation and realize that we are not other than the world' (Loy 2002: 7). This communal flow is learned in the early nest which engraves expectations for relations with others, i.e. sets up the child's social schemas. (When this goes well then, as object-relations theory has it, the child has 'internalized a good object').

Human brains are designed to be reward-seeking, primarily from social relationships (Panksepp and Biven 2011). However, these inclinations are shaped postnatally. With immersion in supportive and socially stimulating family and community, the individual will grow the capacities for sociality—micro-skills for getting along well, along with pleasure in being with others because it is so much fun. Empathic and sympathic capabilities will

grow as a matter of course. If the individual is minimally supported socially and spends most time alone or away from intimate relationships (as most USA children do today), these capacities will not grow properly. The child will have fewer social and emotional capacities and find social relations less pleasurable as a result. Deficiencies will be mappable in endocrine and neuronal structures (e.g. Pollak and Perry 2005; Weaver, Szyf, and Meaney 2002). Social engagement and compassionate functioning will be impaired. The individual likely will have greater hostility and distrust towards others (Kruesi, Hibbs, Zahn, Keysor, Hamburger, Bartko, and Rapoport 1992).

With companionship care, capabilities for emotional presence and secure attachment develop that allow for an *engagement* ethic, an orientation of egalitarian relational attunement.[14] Shaped initially by early learning of an intuitive dance in relationships with caregivers (as described earlier), and then from envelopment in a broad 'circle of attachments', the child simultaneously practises and grows capacities for reverence, intersubjectivity, play, and egalitarian respect (Narvaez 2014). The formation of a positive sense of self and relationships was well described by R. D. Laing who observed that ontologically secure persons:

> have a sense of … presence in the world as a real, alive, whole, and in a temporal sense, a continuous person. As such [they] can live out in the world and meet others: a world and others experienced as equally real, alive, whole, and continuous (1959/1990: 39).

Regular experiences of mutual recognition lead to a sense of deep relatedness and being known.

A species-typical nest promotes the development of *losing the self* initially in caregivers' arms and then in social pleasure, in communal trance or dance. Because of the early formation of secure attachment through companionship care, deep trust of the social world is foundational; socially attuned relating to others forms the framework for a good life. The deep, routine experiences of empathy, resonance, intersubjectivity with caregivers 'tunes up' the child's neurobiological self (e.g. vagus nerve, internal working models of how the world works) to at first dynamically mimic and then become what is experienced. What the young child practices is what she becomes. Routine experiences of empathy, social attunement, and social pleasure lead to values of compassion, social harmony, and togetherness as a matter of course. I–Thou, rather than I–It, relations become the baseline for social functioning. The life course and personality are set to be other-regarding rather than self-centred (Narvaez 2014).

Although an engagement ethic orientation is sufficient for many situations, humanity's fullest moral flowering occurs with the full development of the neocortex and related thalamic structures, a somatic-cognitive nervous system on the thalamic-neocortical axis (MacLean 1990; Panksepp 1998). These systems take several decades to complete themselves with ongoing supportive experience (three decades for executive functions; four or five decades for synthesizing broadly). Higher capacities for executive functions (e.g. foresight, goal-coordination) and reasoning continue to develop into adulthood;

moral reasoning too develops more sophistication with maturation and experience (Rest, Narvaez, Bebeau, and Thoma 1999). These capacities can be rooted in the sensorimotor social experiences of early life and develop gradually. Within a species-typical developmental system, executive functions are grounded in communality, curtailing their use in a manner contrary to well-being of the community. (In a species-*a*typical developmental system, executive functions may develop in a more self-centred direction from missing the companionship care that is provided in a species-typical system. Moral reasoning can then involve only intellect and operate in an emotionally detached manner).

Communal imagination is rooted in the engagement ethic, but adds abstraction and metacognitive capabilities (Narvaez 2014). Communal imagination coordinates instincts, intuitions, and deliberation, as well as internal and external information, for intentional compassionate action that attends to steps, obstacles, and consequences. Imagination is integrated with empathy and attachment. That is, it is far-seeing but not far-hearted. It is grounded in concern for one's particular community but also for communal welfare in distant times and places, for those not present in time or place. Societies where children are raised within a species-typical development system also support the development of wise elders. Wise elders display communal imagination capacities to the greatest extent, and some societies also build it into their planning across generations (e.g. Japan; Native American peoples with concern for the seventh generation).

Self-Protectionism

Civilization presents an alternative pathway for social and moral development, one of self-protectionism. What does the self-protective pathway look like? Let's suppose a child who experienced some degree of a species-atypical early life: traumatized by painful procedures at birth, left largely alone in carriers, playpens through the day, and cots at night, who is left to cry alone because parents are told this is best or even want their own independence. These are examples of a violated evolved nest, what I call 'undercare'. Undercare shifts energies away from growing the emotion systems of sociality (care, play), scheduled to develop after birth, and instead enhances the survival systems with which we are born—emotion systems of *fear*, *anger*, *panic/grief*, *seeking* (anticipatory euphoria that guides exploratory and acquisitive behaviour) and primitive lust (Panksepp 1998).

An early life of inadequate or under-care results in layers of deficiencies, from brain structures to hormonal regulation to structures underlying the psyche and integral to overall system integration. Such an individual has not been able to develop expectations and internalization of good-enough others who relate to the individual in supportive, positive ways. Of course, the problems go 'all the way down' to endocrine and neurotransmitter function, neural synapses and networks, paralleling impaired emotional self-regulation from the lack of early physiological shaping by responsive care during sensitive periods. These multilayered, somatosensory 'knowings' lead to the unique combination of experiential traces and fantasy, distorting the individual's view of the social world.

Set on the wrong trajectory, the child will not properly develop the neurobiological structures that are scheduled to develop during early life and that undergird species-typical sociality. When adults leave a child to cry in rage or panic, they are lubricating a dispositional orientation towards anxiety. In a dissociated state (detachment from the immediate situation), the individual is cut off from external and internal stimuli and fantasy takes over (Schore 2003a). A false, grasping self takes over, signalling a shift to the primitive survival systems of rage or ritual, false selves or false narratives that keep the self calm enough.[15] Instead of agile relational capacities, the individual stands apart. What becomes enlivening in species-atypical nests is often destructive of self or other.

When the stress response kicks in, self-protectionism predominates. As studies following terror-management theory demonstrate, activating a fear response lessens empathy and concern for others and increases distrust of outgroup members (Nisbett and Cohen 1996; Rosenblatt, Greenberg, Solomon, Pyszczynski, and Lyon 1989). Self-protectionism is characterized by an emphasis on survival mechanisms such as following precedent and maintaining territoriality (MacLean 1990). In this mindset, ruthless use of shaming, threat, and deception to control others seems like the right thing to do (Shaver and

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Mikulincer 2007; Staub 1992). When threat seems pervasive, strong-armed and strongman tactics seem reasonable.

Toxic stress in early life promotes a generalized threat reactivity, shifting one to conditioned responses (what worked for self-calming in the past), thwarting free will in the moment. Capacities for other-regarding ethics evaporate. The social world is persecutory. The individual sets up a sense of security around a harsh social world, of one kind or another, so as not to expect too much and thereby not be devastated again. Devastation can occur through such things as engulfment or petrification by the other or by personal implosion (Laing 1959/1990). Without a witness or advocate to process the lack of a proper early nest and childhood the individual becomes stuck in denial. A baby abandoned and unloved develops bad object relationships and, in a consequent negative transference towards people generally, projects her bad objects into others, thus isolating herself from creative social attunement. Brain-behavioural disorders (e.g. personality disorders) are a natural outcome. Deep ontological insecurity (Laing 1959/1990) leads to social self-protectionism. The individual may favour one or another or bounce among social self-protectionisms: externalizing—hostility and aggression towards others, seeking control and dominance; or, internalizing—social withdrawal, depression, and anxiety (Perry 2000; Schore 2003a, 2003b). Each dissolves prosociality. Avoidance of a sense of non-being, of shame, and of annihilation shapes actions and reactions, with negative transferences to others predominating. Thus, self-protectionist ethics reflect an enhancement of the survival systems through early conditioning while right-hemisphere lateralized self-regulatory and relational capacities are underdeveloped or shut down. Unable to stand negative feelings towards the self (e.g. guilt), the individual slides into bullying or being victimized as comfortable psychic locations. What becomes normalized is a role in a dominance hierarchy, either through aggressive action or through appeasement or withdrawal. The self-protective individual is not relaxed and open but braced against others.

The Impact on Moral Imagination

In species-atypical developmental systems, the moral imagination develops awry. When the child's needs are not met:

> there will be a prematuration of the system; his sense will awaken precociously and the child will use understanding as a defence system against traumatism … intellectual activity, may be a bad thing that leads at first to a false system, in the wrong direction, without belonging to the body. A certain type of mental functioning—such as memorizing or cataloguing impingements with a view to assimilation at later stages of development—may be a burden for the psyche-soma, or for the continuity of existence that constitutes the self. This type of

mental functioning acts as a foreign body if it is associated with inadequate adaptation to the environment

(Clancier and Kalmanovitch 1987: 60).

In the species-atypical nest, experiences of physical and emotional isolation build in a lasting detachment and distrust rather than a deep sense of empathy and relational responsibility (*detached imagination*, Narvaez 2014, 2016). Morality becomes only an intellectual exercise about hypotheticals or logic problems where intellect can be used to rationalize anything (see also Backström, this volume). Relational embeddedness and responsibility are alien. When one has learned to be detached from emotions (without awareness or intention), imagination too becomes detached from a relational grounding, making it possible to dream up and justify activities, actions, and products that harm others.

With significant undercare, trauma, or abuse, executive functions and reasoning may root themselves in *vicious imagination*, based on a splitting of the self that leads to rejection and the scapegoating or ruthless control of others. Missing are the early foundations of sociality that otherwise guide imagination and abstraction. In a threat-filled world, abstracting capabilities also become misguided, building on self-protective mechanisms. When one has learned to be socially oppositional, violence and aggression seem morally logical.

Conclusion

What has gone wrong with humanity? My contention is that species-atypical child-raising seeds underdeveloped and even skewed human nature and morality. The resulting misdeveloped adults create societies that perpetuate the undercare of children, fostering communities of people with neurobiologically framed paranoiac perceptions of the relational world.

Prior scholars have pointed out the inadequacy of modern child-raising arrangements. Many commentators on USA culture have pointed to the adolescent nature of adult culture today. For example, Paul Shepard (1998) pointed to adolescence as a key time when traditional societies provided initiation ceremonies into adulthood. As noted earlier, I think the misdevelopment begins much earlier.

Although psychoanalysts from Freud onwards have long intuited the importance of early experience and developed theories of object relations, they have had neither the data nor the tools to provide empirical support and context for these insightful intuitions. This has changed. We have extensive animal studies showing causal neurobiological effects of experience. We can see similar findings in human brains through retrospective studies of maltreated children. Clinical studies show the damaging effects of trauma and

maltreatment in early life, while empirical approaches in child development have produced extensive evidence favouring schema theory.

However, both psychoanalytic and empirical descriptions of normal development have lacked an appropriate baseline against which accounts of normal and deviant development may be judged. The baseline of the early nest suggests that undercaring for children impairs human cognitive, social, and moral capacities. In fact, perhaps psychiatric (including psychoanalytic) descriptions of pathologies might be considered an atlas of deficits resulting from a degraded evolved nest. I contend then that psychic and moral health go hand in hand (see Harcourt this volume). Thus, we might also compile an atlas of *moral* deficits from a degraded evolved nest

Moreover, the deformities that result appear to be linked to the destructiveness not only towards self and others but toward the other-than-human—the rest of the planet's living entities. In fact, Western scholars for centuries and the field of psychology from the beginning turned away from partnering with the natural world (Kidner 2001; Merchant 2003), with Freud (1929/2002) even suggesting that for civilization to move forward, humans needed to take up the attack on nature to force it under human will, guided by science. Clearly this combination of child undercare, disregard for the natural world, and narratives to justify those behaviours have contributed to the ecological catastrophe we face today.

Human beings are complex creatures whose capacities are developed mostly after birth, unlike virtually every other animal. To grow well, each baby needs a set of responsive caregivers to provide the nurturing care, the mothering, that babies need to grow well (Hrdy 2009). Early experiences powerfully influence neurobiology and personality and ought to match up with what children evolved to need. The biosocially constructed self relies on the evolved nest. And so does our morality. We can build receptive intelligence and communal imagination or shrink the circles of moral awareness and concern to the self by not providing what babies and young children evolved to need. Which shall it be?

References

Andersen, S. M. and Thorpe, J. S. (2009). 'An IF-THEN theory of personality: Significant others and the relational self'. *Journal of Research in Personality 43*: 163–170.

Beebe, B. and Lachmann, F. (2002). *Infant research and adult treatment: Co-constructing interactions*. Hillsdale, NJ: Analytic Press.

Benjamin, J. (1988). *Bonds of love*. New York: Pantheon.

Boehm, C. (1999). *Hierarchy in the forest: The evolution of egalitarian behaviour*. Cambridge, MA: Harvard University Press.

Bowers, M. E. and Yehuda, R. (2016). 'Intergenerational transmission of stress in humans'. *Neuropsychopharmacology 41*: 232–244.

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Bronstein, J. L. (ed.) (2015). *Mutualism*. New York: Oxford University Press.

Cantor, N. (1990). 'From thought to behaviour: "Having" and "doing" in the study of personality and cognition'. *American Psychologist 45*: 735–750.

Cassidy, J. and Shaver, P. R. (1999). *Handbook of attachment: Theory, research and clinical applications*. New York: Guilford Press.

Ceballos, G., Ehrlich, P. R., and Dirzo, R. (2017). 'Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines'. *Proceedings of the National Academy of Sciences (PNAS)*, published ahead of print 10 July 2017. doi: 10.1073/pnas.1704949114

Clancier, A. and Kalmanovitch, J. (1984/1987). *Winnicott and paradox: From birth to creation*, trans. Alan Sheridan. London/New York: Tavistock Publications.

Cushman, P. (1995). *Constructing the self, constructing America*. Reading, MA: Addison-Wesley.

Darwin, C. (1871/1981). *The descent of man*. Princeton, NJ: Princeton University Press.

Davis, E. P., Glynn, L. M., Schetter, C. D., Hobel, C., Chicz-Demet, A., and Sandman, C. A. (2007). 'Prenatal exposure to maternal depression and cortisol influences infant temperament'. *Journal of the American Academy of Child and Adolescent Psychiatry 46*: 737–746.

Dunn, R. (2011). *The wild life of our bodies: Predators, parasites, and partners that shape who we are today*. New York: Harper.

Eagle, M. (2013). 'The Implications of Conceptual Critiques and Empirical Research on Unconscious Processes for Psychoanalytic Theory'. *Psychoanalytic Review 100*(6): 881–917.

Ferguson, N. (2012). *Civilization: The West and the rest*. New York: Penguin.

Freud, S. (1929/2002). *Civilization and its discontents*. London: Penguin.

Fry, D. P. (2006). *The human potential for peace: An anthropological challenge to assumptions about war and violence*. New York: Oxford University Press.

Fry, D. P. (ed.) (2013). *War, peace and human nature*. New York: Oxford University Press.

Gottlieb, G. (2002). 'On the epigenetic evolution of species-specific perception: The developmental manifold concept'. *Cognitive Development 17*: 1287–1300.

Greenberg, J. and Mitchell, S. (1983). *Object Relations in Psychoanalytic Theory*. Harvard, MA: Harvard University Press.

Greenough, W. T., Black, J. E., Wallace, C. S. (1987). 'Experience and brain development'. *Child Development 58*: 539–559.

Gross, J. J. (ed.) (2007). *Handbook of emotion regulation*. New York: Guilford.

Harlow, H. (1958). 'The nature of love'. *American Psychologist 13*: 673–685.

Henrich, J., Heine, S. J., and Norenzayan, A. (2010). 'The weirdest people in the world?'. *Behavioral and Brain Sciences 33*(2–3): 61–83.

Hewlett, B. S. and Lamb, M. E. (2005). *Hunter-gatherer childhoods: evolutionary, developmental and cultural perspectives*. New Brunswick, NJ: Aldine.

Hillman, J. and Ventura, M. (1992). *We've had a hundred years of psychotherapy—and the world's getting worse*. New York: HarperCollins.

Hobson, R. P. and Lee, A. (1999). 'Imitation and identification in autism'. *Journal of Child Psychology and Psychiatry 40*(4): 649–659.

Hrdy, S. (2009). *Mothers and others: The evolutionary origins of mutual understanding*. Cambridge, MA: Belknap Press.

Ingold, T. (2005). 'On the social relations of the hunter-gatherer band'. In R. B. Lee, R. B. Daly, and R. Daly (eds), *The Cambridge encyclopedia of hunters and gatherers* (pp. 399–410). New York: Cambridge University Press.

Ingold, T. (2011). *The perception of the environment: Essays on livelihood, dwelling and skill*. London: Routledge.

Kidner, D. W. (2001). *Nature and psyche: Radical environmentalism and the politics of subjectivity*. Albany, NY: State University of New York Press.

Knudsen, E. I. (2004). 'Sensitive periods in the development of the brain and behaviour'. *Journal of Cognitive Neuroscience 16*(8): 1412–1425.

Kochanska, G. (2002). 'Committed compliance, moral self, and internalization: A mediational model'. *Developmental Psychology 38*: 339–351.

Kolbert, E. (2014). *The sixth extinction: An unnatural history*. New York: Henry Holt.

Konner, M. (2002). *The Tangled Wing*. New York: Owl Books.

Konner, M. (2005). 'Hunter-gatherer infancy and childhood: The !Kung and others'. In B. Hewlett and M. Lamb (eds), *Hunter-gatherer childhoods: Evolutionary, developmental and cultural perspectives* (pp. 19–64). New Brunswich, NJ: Transaction.

Konner, M. (2010). *The Evolution of childhood*. Cambridge, MA: Belknap Press.

Korten, D. (2015) *Change the story, change the future*. Oakland, CA: Berrett-Koehler Publishers Inc.

Kruesi, M. J., Hibbs, E. D., Zahn, T. P., Keysor, C. S., Hamburger, S. D., Bartko, J. J., and Rapoport, J. L. (1992). 'A 2-year prospective follow-up study of children and adolescents with disruptive behaviour disorders. Prediction by cerebrospinal fluid 5-hydroxyindoleacetic acid, homovanillic acid, and autonomic measures?'. *Archives of General Psychiatry 49*(6): 429–435.

Laing, R. D. (1959/1990). *The divided self*. London: Penguin.

Lancy, D. F. (2015). *The anthropology of childhood: Cherubs, chattel, changelings*, 2nd edn. New York: Cambridge University Press.

Lee, R. B. and Daly, R. (eds) (2005). *The Cambridge encyclopedia of hunters and gatherers*. New York: Cambridge University Press.

LeVine, R. A., Dixon, S., LeVine, S. E., Richman, A., Keefer, C., Liederman, P. H., and Brazelton, T. B. (2008). 'The comparative study of parenting'. In R. A. LeVine and R. S. New (eds), Anthropology and child development: A cross-cultural reader (pp. 55–65). New York: Wiley.

Litowitz, B. E. (1998). 'An expanded developmental line for negation: rejection, refusal, denial'. *Journal of the American Psychoanalytic Association 46*(1): 121–148.

Loy, D. R. (2002). *A Buddhist history of the West: Studies in lack*. New York: SUNY.

Lupien, S. J., McEwen, B. S., Gunnar, M. R., and Heim, C. (2009). 'Effects of stress throughout the lifespan on the brain, behaviour and cognition'. *Nature Reviews Neuroscience 10*(6): 434–445. doi:10.1038/nrn2639

MacLean, P. D. (1990). *The triune brain in evolution: Role in paleocerebral functions*. New York: Plenum.

Margulis, L. (1998). *Symbiotic planet: A new look at evolution*. Amherst, MA: Sciencewriters.

Marshall, S. P. (1995). *Schemas in problem solving*. Cambridge: Cambridge University Press.

McLaughlin, K. A., Sheridan, M. A., and Nelson, C. A. (2017). 'Neglect as a violation of species-expectant experience: Neurodevelopmental consequences'. *Biological Psychiatry 82*(70): 462–471.

Merchant, C. (2003). *Reinventing Eden: The fate of nature in Western culture*. New York: Routledge.

Millennium Ecosystem Assessment (2005). *Ecosystems and human well-being: Synthesis*. Washington, DC: Island Press.

Mischel, W. and Shoda, Y. (1995). 'A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure'. *Psychological Review 102*(2): 246–268.

Narvaez, D. (2011). 'The ethics of neurobiological narratives'. *Poetics Today 32*(1): 81–106.

Narvaez, D. (2013). 'The 99%—Development and socialization within an evolutionary context: Growing up to become "A good and useful human being"'. In D. Fry (ed.), *War, Peace and Human Nature: The convergence of Evolutionary and Cultural Views* (pp. 643–672). New York: Oxford University Press.

Narvaez, D. (2014). *Neurobiology and the development of human morality: Evolution, culture and wisdom*. New York: W. W. Norton.

Narvaez, D. (2015). 'The co-construction of virtue: Epigenetics, neurobiology and development'. In N. E. Snow (ed.), *Cultivating Virtue* (pp. 251–277). New York: Oxford University Press.

Narvaez, D. (2016). *Embodied morality: Protectionism, engagement and imagination*. New York: Palgrave Macmillan.

Narvaez, D. (2018). 'Ethogenesis: Evolution, early experience and moral becoming'. In J. Graham and K. Gray (eds), *The Atlas of Moral Psychology* (pp. 451–464). New York: Guilford Press.

Narvaez, D., Bock, T., Endicott, L., and Lies, J. (2004). 'Minnesota's Community Voices and Character Education Project'. *Journal of Research in Character Education 2*: 89–112.

Narvaez, D., Braungart-Rieker, J., Miller, L., Gettler, L., and Hastings, P. (eds) (2016). *Contexts for young child flourishing: Evolution, family and society*. New York: Oxford University Press.

Narvaez, D., Gleason, T., Wang, L., Brooks, J., Lefever, J., Cheng, A., and Centers for the Prevention of Child Neglect (2013). 'The Evolved Development Niche: Longitudinal Effects of Caregiving Practices on Early Childhood Psychosocial Development'. *Early Childhood Research Quarterly 28*(4): 759–773. doi:10.1016/j.ecresq.2013.07.003

Narvaez, D., Panksepp, J., Schore, A., and Gleason, T. (eds) (2013). *Evolution, early experience and human development: From research to practice and policy*. New York: Oxford University Press.

Narvaez, D., Valentino, K., Fuentes, A., McKenna, J., and Gray, P. (eds) (2014). *Ancestral landscapes in human evolution: Culture, childrearing and social wellbeing*. New York: Oxford University Press.

Narvaez, D., Wang, L., Gleason, T., Cheng, A., Lefever, J., and Deng, L. (2013). 'The Evolved Developmental Niche and sociomoral outcomes in Chinese three-year-olds'. *European Journal of Developmental Psychology 10*(2): 106–127.

National Research Council (2013). *U.S. Health in International Perspective: Shorter Lives, Poorer Health*. Washington, DC: National Academies Press.

Nisbett, R. and Cohen, D. (1996). *Culture of honor*. New York: Westview Press.

Overton, W. F. (2013). 'A new paradigm for developmental science: Relationism and relational-developmental-systems'. *Applied Developmental Science 17*(2): 94–107.

Overton, W. F. (2015). 'Process and relational-developmental-systems'. In W. F. Overton and P. C. M. Molenaar (eds), *Theory and Method*, vol. 1 of *Handbook of child psychology and developmental science*, 7th edn (pp. 9–62). Hoboken, NJ: Wiley.

Oyama, S. (1985). *The ontogeny of information: Developmental systems and evolution*. Cambridge: Cambridge University Press.

Panksepp, J. (1998). *Affective neuroscience: The foundations of human and animal emotions*. New York: Oxford University Press.

Panksepp, J. and Biven, L. (2011). *The archaeology of mind: Neuroevolutionary origins of human emotions*. New York: W. W. Norton.

Paracer, S. and Ahmadjian, V. (2000). *Symbiosis*, 2nd edn. New York: Oxford University Press.

Pauly, D. (1995). 'Anecdotes and the shifting baseline syndrome of fisheries'. *Trends in Ecology and Evolution 10*(10): 430.

Perry, B. D. (2000). '**Traumatized children: How childhood trauma influences brain development**'. *Child Trauma Academy*.

Piaget, J. (1954). *The Construction of Reality in the Child*. New York: Basic Books.

Piaget, J. (1970). *Genetic Epistemology*, trans. E. Duckworth. New York: Columbia University Press.

Piaget, J. and Inhelder, B. (1969). *The psychology of the child*, trans. H. Weaver. New York: Basic Books.

Pinker, S. (2011) *The better angels of our nature*. New York, NY: Viking.

Pollak, S. D. and Perry, B. (2005). 'Early neglect can hinder child's relationships'. *Proceedings of the National Academy of Sciences*, Nov. 21–25.

Porges, S. W. (2011). *The polyvagal theory: Neurophysiologial foundations of emotions, attachment, communication, self-regulation*. New York: W. W. Norton.

Ramon y Cajal, S. (1909–11). *Histolgie du systeme nerveux de l'homme et des vertebres*. Paris: A. Maloine.

Rest, J. R., Narvaez, D., Bebeau, M., and Thoma, S. (1999). *Postconventional moral thinking: A neo-Kohlbergian approach*. Mahwah, NJ: Erlbaum.

Rosenblatt, A., Greenberg, J., Solomon, S., Pyszczynski, T., and Lyon, D. (1989). 'Evidence for terror management theory: I. The effects of mortality salience on reactions to those who violate or uphold cultural values'. *Journal of Personality and Social Psychology 57*(4): 681–690.

Rumelhart, D. E. (1980). 'Schemata: the building blocks of cognition'. In R. J. Spiro, B. C. Bruce, and W. F. Brewer (eds), *Theoretical issues in reading comprehension* (pp. 33–58). Hillsdale, NJ: Erlbaum.

Rumelhart, D. E. and McClelland, J. L. (eds) (1986). *Parallel distributed processing*, 2 vols. Cambridge, MA: MIT Press.

Sandler, J. (1960). 'The background of safety'. *International Journal of Psychoanalysis 41*: 352–356.

Schore, A. N. (2003a). *Affect dysregulation & disorders of the self*. New York: W. W. Norton.

Schore, A. N. (2003b). *Affect regulation and the repair of the self*. New York: W. W. Norton.

Schore, A. N. (2017). 'All our sons: The developmental neurobiology and neuroendocrinology of boys at risk'. *Infant Mental Health Journal 38*(1):15–52. doi: 10.1002/imhj.21616

Scott, E. and Panksepp, J. (2003). 'Rough-and-tumble play in human children'. *Aggressive Behavior 29*: 539–551.

Shaver, P. R. and Mikulincer, M. (2007). 'Adult attachment strategies and the regulation of emotion'. In J. J. Gross (ed.), *Handbook of Emotion Regulation* (pp. 446–465). New York: Guilford Press.

Shepard, P. (1998). *Coming Home to the Pleistocene*, ed. F. R. Shepard. Washington, DC: Island Press/Shearwater Books.

Siegel, D. (1999). *The developing mind*: *How relationships and the brain interact to shape who we are*. New York: Guilford Press.

Spinka, M., Newberry, R. C., and Bekoff, M. (2001). 'Mammalian play: training for the unexpected'. *Quarterly Review of Biology 76*: 141–168.

Spitz, R. A. (1945). 'Hospitalism; an inquiry into the genesis of psychiatric conditions in early childhood'. *Psychoanalytic Study of the Child 1*: 53–74.

Staub, E. (1992). *The roots of evil*. Cambridge: Cambridge University Press.

Stern, D. N. (1985). *The interpersonal world of the infant*. New York: Basic Books.

Stern, D. N. (2010). *Forms of vitality: Exploring dynamic experience in psychology, the arts, psychotherapy, and development*. New York: Oxford University Press.

Taylor, S. E. and Crocker, J. (1981). 'Schematic bases of social information processing'. In E. T. Higgins, C. P. Herman, and M. P. Zanna (eds), *Social Cognition: the Ontario symposium*, vol. 1 (pp. 89–134). Hillsdale, NJ: Erlbaum.

Trevarthen, C. (1999). 'Musicality and the Intrinsic Motive Pulse: Evidence from human psychobiology and infant communication'. In 'Rhythms, musical narrative, and the origins of human communication', *Musicae Scientiae, Special Issue, 1999–2000* (pp. 157–213). Liège: European Society for the Cognitive Sciences of Music.

Trevarthen, C. (2005). 'Stepping away from the mirror: Pride and shame in adventures of companionship—Reflections on the nature and emotional needs of infant intersubjectivity'. In C. S. Carter, et al. (eds), *Attachment and bonding: A new synthesis* (pp. 55–84). Cambridge, MA: MIT Press.

Trevathan, W. R. (2011). *Human birth: An evolutionary perspective*, 2nd edn. New York: Aldine de Gruyter.

Van den Berg, C. L., Hol, T., van Ree, J. M., Spruijt, B. M., Everts, H., and Koolhaas, J. M. (1999). 'Play is indispensable for an adequate development of coping with social challenges in the rats'. *Developmental Psychobiology 34*: 129–138.

Weaver, I. C., Szyf, M., and Meaney, M. J. (2002). 'From maternal care to gene expression: DNA methylation and the maternal programming of stress responses'. *Endocrine Research 28*: 699.

Westen, D. (1990). 'Towards a revised theory of borderline object relations: contributions of empirical research'. *International Journal of Psychoanalysis 71*: pp. 661–694

Westen, D. and Gabbard, G. O. (2002a). 'Developments in cognitive neuroscience: I. Conflict, compromise, and connectionism'. *Journal of the American Psychoanalytic Association 50*: 53–98. doi:10.1177/00030651020500011501

Westen, D. and Gabbard, G. O. (2002b). 'Developments in cognitive neuroscience: II. Implications for theories of transference'. *Journal of the American Psychoanalytic Association 50*: 99–134. doi:10.1177/00030651020500011601

Winnicott, D. W. (1957). *The child and the family*. London: Tavistock.

Winnicott, D. W. (1971). *Playing and reality*. London: Tavistock.

Winnicott, D. W. (1975). *Through paediatrics to psychoanalysis*. London: Hogarth Press and the Institute of Psycho-Analysis.

Woodburn, J. (1982). 'Egalitarian societies'. *Man 17*: 431–451.

Worster, D. (1994). *Nature's economy: A history of ecological ideas*, 2nd edn. Cambridge: Cambridge University Press.

Notes:

(1.) Many thanks to the editors for their suggestions and assistance in finalizing the chapter.

(2.) The particular culture to which I refer is Western capitalism, which considers the other-than-human resources to be exploitable for human ends. Korten (2015) pointed out how the dominant culture is guided by the Sacred Money and Markets story, which contrasts with the long sustainable Sacred Life and Living Earth story that guided most societies previously and sustainable societies currently.

(3.) And accumulating evidence shows that boys are much more affected by early experience—more vulnerable over a longer period to stressors in the social environment —because of their slower maturation and less innate resilience in comparison to girls (see Schore 2017).

(4.) I discuss elsewhere how the assumptions of a selfish, aggressive human nature emerge from both species-atypical early nests, which influence world view, and the cultural narratives that have emerged to justify that misdevelopment (Narvaez 2013, 2014, 2015, 2016).

(5.) Among small-band hunter-gatherers (nomadic, immediate-return societies with few possessions), broader social practices include radical individual autonomy and radical connection to and understanding of the natural environs (e.g. Ingold 2005).

(6.) Prehistorically, and among small-band hunter-gatherers and earth-centred communities, this includes other-than-humans.

(7.) In our ancestral environments, mothering was a pleasurable experience, with mutual benefits, that necessarily was supported by the community (Hrdy 2009).

(8.) Note that womb experiences also influence brain development (e.g. Davis, Glynn, Schetter, Hobel, Chicz-Demet, and Sandman 2007) and we can inherit some traits due to the experiences our parents and grandparents had, such as anxiety (Bowers and Yehuda 2016).

(9.) I understand 'object relations' here in a broad sense, as identified by Greenberg and Mitchell (1983) and Westen (1990), without commitment to the specific claims of Klein, Fairbairn and other original object-relations theorists.

(10.) Functional adaptation refers to the accommodation made by an individual within her lifetime. This is to be distinguished from adaptation in the evolutionary sense. The latter requires outcompeting one's rivals over multiple generations, which can only be assessed retrospectively.

(11.) There are many forms of self-regulation, such as *continent* self control—avoiding the chocolate cake while still desiring it, versus *virtuous* self control—not desiring the chocolate cake at all because it is not a healthy person's choice, *compliant* self-control in the face of another's aggression, and so on. Here, I focus on some basic neurobiological self-regulatory systems shaped in early life.

(12.) For reviews, see Fry 2006; Ingold 2005; Lee and Daly 2005; Narvaez 2013; Woodburn 1982.

(13.) Pinker (2011) lumps them together with more complex societies that emerged in the last 1 per cent of human genus history and calls them all more violent than present-day peoples! (Only physical violence is gauged, not institutional, emotional, or psychological violence which are rampant in the modern world). See data-intensive refutations of this warrior-history view in Fry 2013.

(14.) [Eds: A link may be drawn here with Backström's conception of love as openness (Backström, 'Hiding from Love: The Repressed Insight in Freud's Account of Morality', this volume).]

(15.) Of course, downshifting to the primitive survival systems can occur for most anyone when the stress response overwhelms other capacities.

Darcia F. Narvaez

Department of Psychology, University of Notre Dame

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