Publisher : John Wiley & Sons Ltd
Location : Hoboken, NJ, USA
ISBN (print-13) : 9781118922514
Title (main) : Peace Ethology
Title (subtitle) : Behavioral Processes and Systems of Peace

Numbering (edition) : First Edition

Creators (author) : Peter Verbeek

Creators (author) : Benjamin A. Peters

Affiliation : University of Alabama at Birmingham, Alabama, USA
University of Michigan, Michigan, USA

Subject Info : http://psi.wiley.com/subject/PS42

Title (name) : Part
Title (main) : Development
Numbering (main) : Two
ID (unit) : c6
ID (file) : c6
Event (xmlCreated) : 2018-01-27 (SPi Global)
Numbering (main) : 6
Numbering (pageFirst) : 95
Numbering (pageLast) : 112

The Developmental Niche for Peace

Darcia Narvaez

A Baseline for a Cooperative and Peaceful Society: Small-Band Hunter-Gatherers

Prior to the spread of agriculture, small-band hunter-gatherer societies (SBHG) were universal. After the spread of agriculture, SBHG continued to exist side by side with settled agricultural communities, indicating a stable social structure (Ingold 1999) and "a persistent and well-adapted way of life" (Lee 1998, p. 61). SBHG conversion to agriculture was generally by force (Gowdy 1998). Lee and Daly (1999, p. 3) defined the hunter-gatherer lifestyle as "subsistence based on hunting of wild animals, gathering of wild plant foods, and fishing, with no domestication of plants, and no domesticated animals except the dog."*Small-band hunter-gatherers* refers to "immediate-return" societies characterized by worldviews and subsistence systems that have few

possessions and emphasize quick returns on individual effort (e.g., eating meat from a successfully hunted animal within days instead of drying and saving it for later) (Woodburn 1998). These contrast with delayed-return societies that emphasize waiting for the return of one's invested energy (e.g., harvesting crops several months after planting). Anthropologists have summarized the characteristics of SBHG societies and, unless otherwise noted, their reviews are used here (Ingold 1999; Lee & Daly 1999; Fry 2006).

There seems to be something about SBHG society that makes for a peaceful character and social life. Adulthood and adult-generated society are considered endpoints of development, so it can be worthwhile to examine adult behavior and culture and then work backward for how a society constructs them. Three caveats: (1) It should be noted that in many cases, prior to examination, studied SBHG were displaced from their historic landscapes by European settlements and governments. In the last few centuries, most traditional societies, originally "comparatively free from material pressures" (Marshall, 1961, p. 243, cited by Sahlins, 1998, p. 11), "were selectively stripped by Europeans before reliable report could be made of indigenous production" (Sahlins 1998, p. 11). These events shifted longstanding stable social systems into stressed, disequilibrated systems, which we now know can make people more self-centered. Despite these disequilibria, many SBHG still exhibit the characteristics noted by explorers upon early contact. (2) Some illustrations are from hunter-gatherers who are less nomadic or more complex in social structure but who nevertheless exhibit some of the SBHG characteristics. (3) The present tense is used to describe SBHG, even though some of these societies today may be altered by colonization and dominant cultural incursion.

Several social elements of SBHG are highlighted here: social intensity, group fluidity and mobility, personal autonomy, egalitarianism, sharing, concern for public opinion, placefulness, trust, and sustainability (for more detail, see Narvaez 2013, 2014).

Social Intensity

Anthropologists and resident scholars have noted the intense social fabric of SBHG and the prevalence of positive social interactions (e.g., Everett 2009). They enjoy social company and social activities, doing virtually nothing alone. Although anyone can leave at will to go off alone, in most cases band members enjoy being with others virtually all the time (anthropologists complain that they were even followed into the jungle when they relieved themselves; e.g., Dentan 1968). "To them the worst fate that could befall anyone was being left alone and solitary.... Not even monkeys walk alone" (Bowen 1964, pp. 173–174). The Ju/wasi "are extremely dependent emotionally on the sense of belonging and companionship," notably sitting shoulder to shoulder and ankle across ankle in the vast Kalahari (Marshall 1976, p. 287).Touching a friend or loved one releases oxytocin which is related to greater relaxation and prosociality (Zak, 2012).

Work is light and made enjoyable through socializing, singing, and joking. Generally only adults do much work (typically only a few hours per day), and even then it is voluntary. Gowdy (1998, p. xv) points out that among the !Kung, people worked between ages 20 and 40 and "spent their abundant leisure time eating, drinking, playing, and socializing – in short, doing the very things we associate with affluence." Such a lifestyle fosters relaxation, and studies show that relaxation (e.g., the relaxation response) is fundamental to good health (Kabat-Zinn 1990). Among SBHG are social practices that we now know calm stress responses and foster the production of bonding hormones, allowing for prosocial emotions to be activated, for example, through practices such as laughter, joking, singing, and dancing, which are commonplace. These social activities benefit immune systems, well-being, and health (e.g., Valentine & Evans 2001; Hayashi *et al.* 2007).

Group Fluidity and Mobility

Mobility is cherished, with constant movement of people in and out of a group; whether at one site or shifting sites, people move, together or apart (Woodburn 1998). In many cases group membership shifts daily, and researchers find that their confidants can disappear without warning, gone for days or weeks at a time (Bowen 1964). When conflicts are not resolved through consensus or compromise, movement away from the conflict often takes place. Disagreeing parties may split the group or take their family members to another

group. “Relocating was always preferable to conflict,” and sometimes “the stress” of conflict “is too great and the accusations too terrible” (Thomas 2006). Mobility allows for segregation from conflicting parties without economic or social penalty (Woodburn 1998).This is a demonstration of the high autonomy assumed by and given to individuals.

Personal Autonomy

To complement intense sociality, every individual has personal autonomy (which also relates to mobility). No one tells others what to do. Individuals choose themselves what to do (e.g., to go hunting or gathering or not). In fact, some community members may never help with hunting – for which there is no sanction (Sahlins 1972). Psychological research refers to autonomy as a basic human need. For example, when children in modern societiesare not given meaningful choices in school, they are more likely to misbehave (Deci & Ryan 1985). Among SBHG, parent–child relations are not coercive. For example, when inoculations were being promoted by a health organization, Wolff (2001) reported that a Senoi mother asked her child if he wanted the vaccine, and when he said no, she did not press; that was that. Autonomy is so valued that young children are allowed to play with dangerous objects at will (e.g., sharp spears and axes), and even babies are encouraged to start learning to use them (Hewlett & Lamb 2005).

Some bands place greater emphasis on self-reliance than others. In these cases, individuals are responsible for their own food gathering (as among the Ju/wasi of the Kalahari Desert in present-day Namibia: berries, roots, and slow game): “You find it, you own it. And you carry it” (quoted in Thomas 2006, p. 193). The Piraha of the Amazon did not expect others to help them with their responsibilities, but they also did not change their activities to help someone sick or dying. However, they would come to the aid of others in immediate need (Everett 2009).

Egalitarianism

Though humanity’s ancestral primate lineage included hierarchical dominance patterns, the most recent human ancestor was egalitarian, emerging at least 100,000 years ago (Boehm 1999). From SBHG descriptions, all members experience purposeful social egalitarianism (Gowdy 1998; Fry 2006). There are no culturally imposed social hierarchies but instead a collective dominance over inegalitarian behavior that maintains the autonomy of every member. Egalitarianism and personal autonomy are fiercely enforced to the degree that a person who bossed someone else would quickly hear about it. Coercion could break a relationship.

In studies of egalitarianism across species, negative reactions to perceived unequal treatment are common (e.g., Brosnan & de Waal 2014). Wilkinson and Pickett (2009) compiled data across and within nations that show that the more unequal the society is, the worse individuals fare on multiple measures (see Hyslop & Morgan, this volume, Chapter 13).

Sharing

Sharing is a way of life for SBHG, so much so that it is considered good manners and does not require a thank you (van der Post 1961). “Selfishness and favoritism were death” (Marshall quoted in Thomas 2006, p. 243). As Lee (1988, p. 252) noted, when a cabin of hungry Iroquois encounters hungry others, they share what they have “without waiting to be asked, although they expose themselves thereby to the same danger of perishing as those whom they help at their own expense so humanely and with such greatness of soul” (from Lafitau 1724/1974). Sharing is so fundamental that when sharing is not forthcoming, individuals may loudly insist on their claim to a portion of the food that others have acquired (Barnard & Woodburn 1997). Generally, band members cannot build up savings of anything because people will ask for the excess, and one must give it away or experience gossip and complaints. Other animals act this way too, “inviting themselves to the picnic,” so to speak, as they scavenge, coming by to get their share of a carcass or attractive foodstuff (Dirkmaat 2012).

Sharing indicates mutual dependence, a form of communalism, and is a means for maintaining equality. Lee (1988) calls the economics of hunter-gatherers *primitive communism*: "A deep-rooted egalitarianism, a deep-rooted commitment to the norm of reciprocity, a deep-rooted desire for *...communitas*– the sense of community" (p. 268). Lee describes it concretely this way:

> A useful way of looking at primitive communism is to visualize a ceiling of accumulation of goods above which nobody can rise, with the corollary that there is also a floor below which one cannot sink. The ceiling and the floor are dialectically connected; you cannot have one without the other. If there is any food in the camp, everybody in the camp is going to get some of it. (p. 267)

Lee points out, "All theories of justice revolve around these principles, and our sense of outrage at the violation of these norms indicates the depth of its gut-level appeal" (Lee 1988, p. 268), a reaction that our monkey and ape cousins also demonstrate (Brosnan & de Waal 2014).

Concern for Public Opinion

When Darwin (1871/1981) described the development of humanity's moral sense through the tree of life, he identified a concern for public opinion as a fundamental characteristic. Among SBHG, "anything other than peace and harmony in human relations makes the Ju/wasi uneasy" (Marshall quoted in Thomas 2006, p. 193). "They are also extremely dependent emotionally on the sense of belonging and on companionship. Separation and loneliness are unendurable to them" (Marshall 1976, p. 287). In such tightknit societies, concerns about one's reputation and place in the community are effective means of social control of personal behavior. For example, when a person is considered to be in danger of ego inflation or self-aggrandizement, like a hunter credited with a good hunt, ridicule and joking are used to keep his ego in check. In SBHG societies around the world, a similar type of joking is used – a rough humor that includes playful putdowns and teasing, a method of enforcing humility (Lee 1988). "Leveling" comes to the fore when there is a good hunting outcome. The members of the hunting party "insult the meat" by complaining to the hunter credited for bringing it in, denigrating the size or quality of the meat (e.g., "look how small it is – maybe we should find something bigger, like a rabbit"). In fact, the bigger and better the prize, the more insults given. Such leveling is thought to assist in maintaining the values of humility but also sharing. "Public opinion was police, judge and jury, and its expression in ridicule or ostracism made other punishment unnecessary" (Bowen 1964, p. 209). When someone is too aggressive (e.g., killing another) or a repeat offender, he can be expelled.

Placefulness, Trust, and Sustainability

Hunter-gatherers feel like they belong to where they are. They have a "sense of place" on the earth. This includes a sense of fitting in with their environment. They have deep personal knowledge and collective knowledge about local environs, and often laugh at visitors' lack of perception (e.g., "Don't you recognize this bush?").

As immediate-return societies, SBHG live as if there is no need to save foodstuff for a rainy tomorrow as they feast on the food they hunt or gather, eating it up. Though some call it confidence, from a psychological viewpoint I would call this trust – trust in Nature, the natural world, to provide what is needed but also trust in one's capacity to deal with what comes. Many of these bands see the world as a giving place (Bird-David 1990). The Mbuti of the Ituri Forest in Republic of the Congo consider the forest like a mother, telling unborn and young children, "The forest is good, the forest is kind; mother forest, father forest" (Turnbull 1983, p. 34).

Typically, and at least due in part to these beliefs, SBHG live in ways that do not destroy their habitat. Of course, the bands are small. But, like other migrating animals who return to feeding grounds cyclically, they move on before irreversible destruction occurs. They live off renewable flows of resources instead of

exhaustible stocks (Gowdy 1998). Native Americans, representing different types of societies shifting over time, describe the "honorable harvest" in which nonhumans are respected by asking permission of plants and animals for their lives, employing principles such as taking no more than half of a plant resource (Kimmerer 2013). These attitudes contrast with those of moderns who have cultural narratives of humans against nature and have anxiety about survival in the future, and who often lack a sense of place (Shepard 1982).

Living sustainably also means playing the "sacred game" of moving between being predator and prey and living in wily ways with predators. There is no immediate inclination to kill predators for human safety as sometimes occurs in modern communities (Thomas 2006). This does not mean people are not wary. Like hunter-gatherers generally do, the Ju/wasi sleep lightly at night with intermittent sleeping during daylight hours, making vigilance easy to carry out.

Sahlins (1998) suggested that hunter-gatherers have limited wants because scarcity is not apparent. Barnard and Woodburn (1997) speak of limited production targets instead of limited wants. That is, the least amount of effort is put out to meet the basic amount of need (they think agriculturalists have to work too hard). Members of agricultural societies consider hunter-gatherers to "not be using" or be "doing nothing" with the land on which they forage and hunt (Thomas 2006).

The characteristics of hunter-gatherer societies are integrated into a whole. Gowdy (1998, p. xiii) refers to "the indissoluble connection between social and environmental harmony." Simple and complex hunter-gatherer societies "were environmentally sustainable because they were egalitarian, and they were egalitarian because they were environmentally sustainable" (p. xiii). Mobility (along with the few possessions that make it possible) makes sustainability more attainable.

Adults' Personalities in Small-Band Hunter-Gatherer Societies

The social practices described thus far in this chapter are rarely found in modern civilizations, which may matter for developing personalities and dispositions. Anthropologists have described personalities among adult members of SBHG societies from around the world as self-controlled and patient, kind and generous, open and flexible, and nonviolent. (Note that we do not really have psychological research data to examine personality differences, so these are generalizations based on behavioral observations reported by explorers and ethnographers.)

Self-Control and Patience

SBHG are commonly perceived to maintain equanimity (unless under the influence of alcohol provided by outsiders). Among the Ju/wasi, self-control of negative feelings was expected, such as not showing hunger, envy, or anger. Sometimes, self-control occurred to a remarkable degree. For example, Thomas (2006) reports on a Ju/wasi girl who stepped on a hyena trap set by a visiting Western biologist, impaling her foot. She stood for hours in pain, alone, in an area with predators, waiting for assistance; when her wound was being dressed, she acted as if it were nothing. Thomas (2006, p. 232) also notes that although the ancient lifestyle started to break down when Western civilization encroached with all its degenerative cultural border aspects (alcohol, disease, poverty, and hunger), they were able to curb their violence: "No matter how provoked, they rarely acted out their discomfort, nor did they vent it on one another.... Not for nothing did they call themselves the Harmless People, the Pure People, when the harm and impurities were jealousy, violence, and anger."

Self-control, or self-regulation, is fundamental for life, for all animals. It represents a biosocial adaptation critical for both physiological and social functioning. Self-regulation facilitates getting along with others in part because it ensures that the focus in social relations is not solely on the self (Eisenberg 2000; Narvaez & Gleason 2013). Built on physiological mechanisms, self-regulation in social terms refers to the capacity to control negative emotions or self-protective mechanisms like fear (e.g., Porges & Carter 2010), and these capacities appear to be especially strong in SBHG.

Self-control extends to eating. SBHG do not necessarily eat every day. In fact, they can go several days without eating (to the consternation of Western visitors). But they take advantage when foodstuffs are available. For example, wWhen Piraha visit the city, they stuff themselves on the first meal and perhaps the second, but by the third meal they complain, saying, "Are we eating again?" (Everett 2009).

Kindness and Generosity

Although culturally expected with community members, generosity extends to outsiders and is usually shown without reluctance. As noted in this chapter, even those with very little share what they have with others. Possessions are shared and not hoarded. The accumulation of objects is not associated with status (Marshall 1961). Among indigenous American groups, generosity is explicitly mentored in the young who are encouraged to practice it, such as by giving away one's favorite possession (Jacobs 1998). The Piraha, though oriented toward self-reliance, helped linguist Dan Everett who was struggling to carry his share of wood through the jungle (to repair Everett's home). Each man originally carried about 50 pounds, so the man who helped Everett carried 100 pounds, without complaint (Everett 2009).

Openness and Flexibility

Groups exhibit flexible lifestyles. For example, sleeping takes place anytime of the day and is more intermittent both day and night (Sahlins 1998). Among the Piraha, naps take up to two hours each at day or night, and there is loud talking all night. Activities can take place at any time (e.g., fishing), so that if a night-fishing expedition is successful everyone gets up to share the meal (Everett 2009).

Hunter-gatherers are known for their non-exclusive, open social systems (Bird-David 1988). Lee (1979) noted the !Kung's conscious attempt to maintain a boundary-less universe. This openness makes them flexible in relations with outsiders, adopting their codes when interacting but not changing their social practices in any fundamental way (Bird-David 1998).

Nonviolence

Typically, there is little aggression among hunter-gatherer adults, and any act of aggression by a young child is quickly interrupted (Thomas 2006). Among the Semai, which are settled hunter-gatherers of the Malay Peninsula, to make someone unhappy by frustrating her desires is to put her at risk of being hurt from having an accident (Dentan 1968). When asked about hitting a child, the Semai say, "How would you feel if it died?" and when asked about hitting another adult, the response is "Suppose he hits you back?" (Dentan 1968, p. 58). Although there is occasional physical violence due to sexual jealousy, the usual response to conflict is discussion to consensus; if that does not work, the group splits up to join or form a different band (Fry 2006).

I have reviewed some of the common characteristics within SBHG, many of which run counter to prevailing views of our "savage" cousins or even views of human nature. What are the mechanisms for building such highly social, egalitarian societies with adults displaying these kinds of peaceful personalities? It begins with childrearing.

A Peacebuilding Nest: The Evolved Developmental Niche

Westerners have noted the pleasant nature of children in SBHG societies. For example, Thomas (2006, p. 200) states, "No culture can ever have raised better, more intelligent, more likable, more confident children." Attributing this to childrearing, she noted that Ju/wasi childhoods were "serene,""pleasant," and "free of hurt and punishment." Indeed, one of the distinctive features of SBHG society is the nest provided for the young.

Intensive parenting initially emerged among social mammals, having evolved to fixation between 30 and 40 million years ago (Konner 2005). Parenting intensified further through human evolution as humans became bipedal and babies had to be born earlier to fit the shrunken birth canal (Trevathan 2011). Humans are born extremely immature (with 25% of their adult brain), with many systems under final development in the first years postnatally and the longest maturational period (over 20 years) of any animal. Thus, intense parenting evolved to match up with the maturational schedule of human young. Based on new insights from neurobiological research, I suspect that early childhood experiences might be a key source of the differences in adult personality between moderns and SBHG (for extensive detail, see Narvaez 2014). Because the child cannot self-regulate at birth, caregivers act as external regulators while physiological systems develop their parameters and thresholds (Montagu 1957; Schore 1996). Attentive care in early life contributes to a species-typical trajectory. "Departure from [these practices] since the end of the hunting-gathering era constitute a discordance and may have psychological and biological consequences that merit further study" (Konner 2005, p. 63). Indeed, among human societies until recent times, there has been great consistency in caregiving, and these practices are associated with social attachment capacities and well-being (Hrdy 2009).

Hunter-gatherer childhoods, as summarized across studied groups, include natural childbirth, 2–5 years of breastfeeding, responsiveness to child needs, nearly constant positive touch and no punishment, multiple adult caregivers, positive social support, and extensive free play (Hewlett & Lamb 2005). Each of these characteristics has been documented to influence child development and adult well-being (Narvaez, Panksepp *et al.* 2013). Recent research in neurobiology shows how influential early caregiving environments are on lasting neurobiological functions, both physiologically and psychologically. Research into each component (including experimental studies with mammals and observational or post-hoc comparison studies with neglected humans) shows that the evolved developmental niche (EDN) fosters physiological, psychological, and social health. For example, epigenetic effects (up or down gene regulation) occur for hundreds of genes in rat pups as a consequence of mother affection in the first few days of life – high nurturance sets up genes for controlling anxiety, whereas low-nurturing care does not, with similar indications in humans (Meaney 2010). Vagal tone (the function of the tenth cranial nerve, the vagus nerve), which maintains the self-regulation of multiple body systems, is trained by responsive parenting – for example, calming baby distress (Porges 2011). Indeed, Kochanska (2002) has done extensive research demonstrating that mutually responsive caregiving leads to children with not only greater self-regulation but also greater empathy, conscience, and prosocial capacities.

The EDN fosters a healthy, well-functioning neurobiology and self-regulation from the first hours of life (see reviews in Narvaez, Panksepp *et al.* 2013; Narvaez *et al.* 2014). My colleagues and I investigate the EDN and its effects on well-being and morality. To put it in a nutshell, even after controlling for demographic variables and maternal responsiveness, maternal EDN practices for 3–5-year-old children are related to more of the good stuff: empathy, conscience, self-control, cooperation, and intelligence, and less of the bad stuff: depression and aggression (for details, see Narvaez, Gleason *et al.* 2013; Narvaez, Wang *et al.* 2013). Furthermore, adults who report EDN-consistent childhoods are more likely to be mentally healthy and have prosocial moral capacities and orientations (Narvaez *et al.* 2014). It appears that the EDN fosters basic universals in the type of implicit procedural social knowledge that guides thought, emotion, and action. In other words, after experiencing the EDN in childhood, the uniqueness of a particular culture is the frosting on the cake of a common human nature.

Human Peacefulness

Until recently in human evolutionary history, the EDN was universally experienced as there were no alternatives (e.g., no infant formula, and no daycare centers or schools where children are sent away from loved ones). The contention here is that the EDN for young children occurs during a time when thresholds and physiological and psychological habits for the social life are established. Mammalian social-emotional needs for touch and responsive care are vital not only in the first years of life for structuring body systems that are developed from calming touch (facilitating calming hormones like oxytocin), but throughout life. Indeed, from observational reports of SBHG, affectionate touch among all ages is pervasive, a practice that would facilitate the flow of calming hormones like oxytocin (Narvaez 2014). The peaceful, prosocial adult personalities of

SBHG appear to be biosocial outcomes of the EDN in early life and beyond. The EDN evolved to foster not only optimal physiological development but also the psychosocial underpinnings of human sociality, a key to human adaptation. Early life is when the implicit social procedural knowledge is established that guides future behavior and forms the basis for lifelong sociality. In a way, EDN-consistent early care provides a "cultural commons" for the development of peaceable character.

The sociomoral developmental core that develops in SBHG environments includes social effectivity (effectiveness plus self-efficacy) ~~roots~~ and a communal autonomy. Psychologically, these are dispositions that contribute to collaborative morality, which represents human nature's higher capacities. First, because the individual is grounded in intensely supportive community experience from the beginning of life, fundamental skills for basic sociality are developed, such as emotional presence and interpersonal responsiveness (intersubjectivity). Consistent, regular practice builds a sense of social efficacy as well as pleasurable sensations for these experiences, resulting in social effectiveness. All these experiences contribute to procedural emotional intelligence – automatic social knowhow or tacit knowledge. These roots are established implicitly by the way that the infant is treated in early life when brain networks and systems are established. Second, the individual develops deep personal knowledge about how her actions affect others (autonomy space). When the surges for autonomy occur (e.g., the "terrible twos" in North America but not terrible in most cultures), the individual seeks to test his or her capacities. Within the close community of the SBHG, these surges are shaped by prosocial guidance from adults and older children in the community. So, if a child takes a stick and aims it at someone, that person makes a game of it, laughing it off and redirecting the aggression. When children are raised with these experiences, they turn into adults who create a cooperative society that continues raising children in this manner.

We can see two moral inheritances that emerge from empathic effectivity ~~roots~~ and a communal autonomy space. These underlie inherited moral mindsets from which one takes action. One is what I call the *engagement ethic*, built on the types of experiences that SBHG adults provide their children. Loving care provides extensive experiences of intersubjectivity and related types of experiences (as noted in this chapter). These are critical for establishing conscious and unconscious capacities for relational communication and connection. An active engagement ethic entails being emotionally present with the Other, co-constructing the moment together in a playful dance. From all accounts, SBHG spend most of their social time in this orientation. A second ethical mindset, communal imagination, is the capacity to deliberate and imagine alternate possibilities within an inclusive framework. Imagination capacities generally rely on later-evolved brain areas such as executive functions in the prefrontal cortex that allow for stepping outside the present moment to consider alternative possibilities, a capacity that may be one of humanity's greatest gifts. Good care during the early sensitive period facilitates strong linkages between executive functions in the prefrontal cortex and control of self-preservational systems in evolutionarily older parts of the brain (Schore, 2003a, 2003b). Then, when imagination is deployed, it automatically fits the parameters of a communal autonomy space. These capacities contribute to a peaceable nature and thus reflect a species-typical outcome. However, deficiencies in early caregiving from a community of adults can lead to species-atypical outcomes.

What Happens When the EDN Is Missing or Degraded?

In the last 1% of human evolutionary history (the last 10,000 years or so), humans have forgotten or rejected their evolutionary history and dismantled the EDN for young children (and especially in the last 200 years or so with medicalized birth, formula feeding, stranger daycare, etc.). Childrearing practices that do not match the evolved baseline can be called *undercare*. (The term *undercare* is used to distinguish it from *neglect* as understood in the legal and medical communities; neglect does not take into account all evolved caregiving practices.) *Undercare* specifically refers to the absence of one or more of the caregiving practices characteristic of the EDN identified thus far. Undercare is to care as malnourishment is to nourishment. Malnourishment in the extreme is starvation. Undercare in the extreme is trauma and abuse. But there are many degrees in between nourishment and malnourishment, and between full care and undercare. It does not take that much violation of the evolved early caregiving environment to have long-term effects because undercare causes stress (e.g., lack of touch increases stress hormones), which in early life can be toxic to brain development (Champagne 2014). Although it might not be as visible, undercare leads to various suboptimal outcomes

such as autoimmune and emotional disorders. The stress response, whose parameters and thresholds are established early in life, can be set to be hyperreactive (Lupien *et al.* 2009). Undercare promotes a "stressed brain" with poor social brain networks that are otherwise developed with good care, underpinning moral capacities.

Without the EDN, human nature appears to misdevelop in multiple ways (toward aggression and self-centeredness) depending on the type, duration, intensity, and timing of undercare. Extensive research with animals and humans demonstrates that lifelong deficits can occur when early experience is suboptimal (e.g., Narvaez, Panksepp *et al.* 2013). If a child does not receive intensive social support during sensitive periods when brain and body systems are established, the foundations for health and well-being are undermined. Instead of developing prosocial networks and self-regulation from companionship care, the child develops a stress-reactive physiology sensitized to personal distress with relative inflexibility. Stress reactivity undermines not only higher order thinking and capacities for intimacy but also empathic response and communal imagination (Narvaez 2014). When things go wrong in early life, brain and body systems develop suboptimally, and the submoral components previously described are misaligned. Systems governing sociality are misformed. For example, the right hemisphere does not receive the experience it expects during the period when it is developing rapidly, undermining the development of neural networks critical for physiological self-regulation (e.g., the vagus nerve, which influences all systems of the body; Porges 2011) and for sociality (Schore 2001a, 2001b). These misdevelopments undermine empathy and imagination, propelling the individual to rely on rigid scripts and ideologies for self-calming instead of a set of flexible social skills developed in a species-typical early life.

Within cultures where the EDN is frayed or absent, during autonomy surges a child may not be surrounded by a close, prosocial community to shape autonomy. Worse, the child may be (mis)guided by aggressive adults. In these cases, through punishment, disrespect, or encouragement, the child will be caught in maintaining aggressive selfishness, growing an egocentric autonomy space. Instead of curtailing energies to account for the needs of others, self-aggrandizing energies will be encouraged without sensitivity to their destructive power toward relationships, peoples, or other species.

Without appropriate care in early life, mammals can grow up with erratic biological systems that are easily thrown into disarray when unpredictable things happen. When the EDN is inadequate, social capacities, which depend on early experience, are underdeveloped and innate survival systems are sensitized to protect the individual from harm. And when there are impaired capacities to self-regulate, the stress response will persist. The personality may grow to rely on survival systems that become easily activated under perceived threat. Self-protection can become the default system for social life. Self-protectionist ethics rely on the survival systems present at birth: mammalian emotions systems of fear, rage, and panic. The stress response is related to the functioning of these systems, so when the stress response becomes habitual, these primitive systems will dominate personality (also as a result of the right hemisphere and prefrontal controls being underdeveloped). The primitive systems are rigid, so the individual will demonstrate social inflexibility, lack of social creativity, and a reliance on routines and precedent.

Besides a general safety orientation to the social life that seeks to stay safely in control, there are two subtypes of this basic safety ethic that can operate "in the moment." One is anger-based and aggressive (combative), where one feels enough strength and power to take action against the threat (one-up). In fact, with a dispositional combative safety mindset, one feels less than adequate unless one is dominant; hence, the bulldoggedness of some personalities in the face of challenge. This externalizing, or pushing away of others with hostility or aggression, can become habitual in social situations as a learned form of self-regulation. The other safety subtype is fear-based appeasement based in a dissociated state (emotional detachment from the immediate situation); the individual is cut off from external and internal stimuli. In this case, one feels paralyzed or too weak to take action and so withdraws physically and/or emotionally. Energy is internalized toward anxiety and depression. This, too, can become habitual in social situations as a way to cope in a perceived hostile environment. How much one resorts to using these innate instincts for self-protection and rigidity in moral decisions and actions is initiated during the preverbal years of life (although one can revamp one's orientations to a degree later; Gilbert 2010; Narvaez 2014). The early years have lasting effects, affecting one's imagination and cognitive sensitivity to others. In our research with adults, my colleagues and

I have found that EDN-consistent childhood experiences are related to more secure attachment (biosocially comfortable and skilled sociality) and better mental health, perspective taking, and moral engagement. In contrast, EDN-inconsistent experiences are related to insecure attachment (biosocial discomfort and awkwardness with sociality), worse mental health, personal distress, and self-protective morality (see Narvaez *et al.* 2015).

Imagination can take different forms, and the forms that become habitual can reflect early experience as well (Schore 2001b). As noted in this chapter, communal imagination is our heritage, formed in supportive environments. But in species-atypical environments, imagination can partner with self-protective concerns. When early needs are thwarted, imagination may develop in self-protectionist directions. When the stress response is activated from a perceived threat, which becomes habitual in the ill-formed imagination, imagination can be hijacked for self-aggrandizement or revenge. Angry and aggressive emotions underlie combative morality that, when enhanced with imagination capacities, fuels vicious imagination and planned social aggression. Anxiety is directed toward grasping or controlling the Other in an ongoing, ranking, "us-versus-them" orientation. Because of heightened fear and panic (overt or covert), the individual will demonstrate intolerance of perceived outgroup members and fear of contamination; such individuals are unable to live in the present moment with the Other, whom they quickly categorize. Ideologies that tout the superiority of one's group are attractive ("safety nests") and reinforce insensitive beliefs and behavior, characteristics of ethnocentric monoculturalism (Sue *et al.* 1999).

The other form of safety-based imagination is emotionally detached and dissociated. Emotional distancing and fearful orientation underlie a withdrawing morality that, when enhanced with imagination capacities, becomes a *detached imagination*, morally disengaged (Bandura 1999) and distanced from affiliative emotions and consequences of actions. Detached imagination is encouraged in emotionally desiccated environments (e.g., babies left to cry and sleep alone with little touch) that perhaps offer some support but not enough to promote empathy and social intimacy, supporting instead narcissism and moral egoism (the sense of disconnection to others, human and nonhuman, and an emphasis on self-reliance and defiance), which have gained traction in recent centuries among civilized peoples. Many Western cultural narratives fuel detached imagination. Moral disengagement, something expected in Western science, economics, and business, can lead to great harm from taking actions without concern for long-term consequences, lacking deep sociality (empathic effectivity roots) and a broad cooperative autonomy with all of Life. Instead, one dismisses responsibility or concern for those deemed inferior – whether other human groups, animals, plants, or whole ecosystems – and uses them for one's own ends.

Inegalitarianism is at the heart of safety-based imagination, usually valuing one set of humans over another. Safety-based imagination is governed by past conditioning of distrust of one's softer emotions and distrust of the goodwill of others, making receptivity to and emotional presence with others difficult. Prior experience is imposed on the present. It is detached from present reality and uses categorizations and stereotyping as a replacement for flexible adaptation, for example by employing rigid scripts for social interactions instead of flexible adaptedness and the co-creation of the relationship in the moment. Categorizing others based on a worldview or ideology engenders miscalculations, illusions that increase hostility and the chance of conflict (Narvaez 2014). Detached and vicious imaginations can lead to war and environmental degradation but also to impositional altruism, imposing one's will on others "for their own good." Clearly, these are characteristics not tolerated or cultivated in SBHG.

In modern cultures, the only SBHG social characteristic that is supported is personal autonomy but only to a limited degree as individuals have chains of obligations put on them from which they cannot escape into the bush or jungle. The rest of the characteristics have been eliminated with the population surges needed for agriculture (decreasing social intensity, group fluidity, and mobility), the hierarchies that developed from unequal distribution of goods (undermining egalitarianism and sharing), and agriculture itself, which alienates humanity from Nature (sense of place, trust in nature, and sustainable living).

What Can We Do Today?

Whereas evolution has set us up for a "moral sense" (Darwin 1871/1981), early experience, in very deep neurobiological ways, influences what *type* of moral sense develops. Even our imaginations are rooted in biology and are shaped by social experience (Emde *et al.* 1991). Although humans evolved to be prepared for communal morality, we are realizing now that its roots must be cultivated carefully during sensitive periods (such as the first few years of life) and maintained with social support. Caregivers who follow the EDN promote pleasurable social experience. Extensive joyful interaction promotes brain development on all levels (neurochemical, circuitry, and integration; Schore 2001a). Caregiving environments that match up with human evolved needs shape dispositions for humanity's fullest moral capacities, what I call the *ethics of engagement* and *communal imagination*. But these prepared inheritances appear to be epigenetic and plastically dependent on caregiving practices that evolved to match the maturational schedule of the baby.

Nevertheless, humans may be distinctive from other animals for their capacity to self-author or self-transform. Individuals can remake themselves, and so can communities and cultures (e.g., Norway, once violent, became a peaceful nation; Fry 2006). One of humanity's gifts is the ability to transcend the present moment and imagine possibility. With the ability to make narratives of meaning that govern action choices, humans can purposefully shift consciousness, moving to a greater awareness of the Whole.

Gowdy (1998) suggested that, from an economic perspective, the modern world could learn from the social and ecological harmony of hunter-gatherer societies (whom he called, after Sahlins [1972], "uneconomic man"). Specifically, modern societies could organize around "social security; living off renewable flows rather than exhaustible stocks; sexual equality; cultural and ecological diversity based on bioregionalism; and social rather than private capital" (Gowdy 1998).

From a developmental psychological perspective, here are three things that adults can do. First, redirect societal energies to restore the EDN for the raising of the young. Denying babies what they evolved to need risks building self-centered adults and societies that are destructive to life on the planet. Parents often treat their children the way they were treated. (In animal studies, a low-nurturing mother breeds a daughter who is even worse as a mother, and so parenting can spiral downward over generations; Meaney 2010.) Of course, what one believes to be appropriate childrearing depends on what one believes a child's nature to be and what entails a good adult. And what we think about human moral nature and its possibilities is highly influenced by our cultural inheritances, the culture's stories about who we are, as well as beliefs and attitudes about the etiology and development of morality. All these influence how adults treat children during sensitive periods when the biopsychosocial self, including moral personality, is being formed. Because these behaviors are guided by belief about human beings in general, it is important to understand humanity's heritages: that we are naturally cooperative under species-typical environments and that our intelligence can be much broader and include receptive intelligence toward nonhumans.

Second, and concretely, we can help families and communities "get the neurobiology right" in their child raising. This requires educating all societal members not only about the evolved developmental niche but also about child development; understanding the brain and its functions, including the stress response, mindfulness, and positive moods; and understanding how environments influence worldview, thoughts, and behavior (Narvaez 2014). This requires that hospitals become baby-friendly, an initiative of the World Health Organization (WHO & UNICEF 2009) (e.g., no separation of baby from mother, and no feeding of formula or sugar water), and provide soothing introductions to the world (no pain-inducing procedures that are unnecessary or can wait). It also requires workplaces and communities to be reorganized to emphasize optimal caregiving in early life, including such things as paid parental leave for a year or more as most countries provide, and arranging workplaces so that babies can be brought to work (when well cared for, they do not cry) and young children can be cared for in quality workplace daycare.

Third, alter social contexts not only for babies but for everyone else. Immersing oneself and one another in socially supportive environments primes good moods and prosocial values. Psychological research provides guidance on how to change the schemas and filters we use to understand life events (Narvaez 2005). Contexts prime our emotions, actions, and imaginations (Bargh 1989; Narvaez & Lapsley 2005). Intense repeated experience builds schemas (generalized knowledge structures) that guide perception, interpretation, and behavior (Bargh 1989; Narvaez & Lapsley 2005). Making stories about and practicing cooperation (instead

of competition or aggression) routinely will ensure that they become automatic filters and frames ~~of~~for everyday experience (Hogarth 2001; see also Ali & Walters, this volume, Chapter 5). This means altering social discourse that emphasizes competition as natural over cooperation, toughness over empathy, and so on. Self-aggrandizing vicious imagination should be nipped in the bud. Detached imagination should be used for a limited set of situations. Always consult the wisdom of those who see the big picture over multiple generations. Attention should be routinely drawn to communal values, and the identity narratives we tell one another should be those that foster an inclusive communal imagination (e.g., no us-against-them rhetoric but inclusive we-members-of-Earth-community discourse).

We need to enfold attitudes and skills regarding conflict resolution and compassionate behavior into everyday discourse and action at home, school, and work. We need to foster skills for self-calming and help one another learn to control the stress response and practice relational attunement (Narvaez 2014). We can avoid putting children and ourselves into desensitizing experiences, such as violent media. We can adopt a developmental approach to people's misbehavior under age 30, using functionally appropriate forms of gossip and leveling to suppress a safety ethic in each other. We can make empathy and openness part of our expectations for leaders and parents.

In short, instead of accepting slipping baselines for childrearing, human potential, and normative social life, we can challenge them with evidence, and practice alternative ways to be and live.

Conclusion

We can see how the EDN can be analyzed at multiple levels beyond developmental issues, the focus of the chapter: In terms of immediate causation, emotion systems must be well developed to function optimally. Social life requires a flexibly responsive set of emotion systems and their regulation. With poor development during early life, stress reactivity can become built in, undermining executive controls and impairing relational attunement and receptive intelligence; one will be attracted to ideologies of aggression or withdrawal, domination or submission (Tomkins 1965). In terms of function, when humans fulfill their human essence, which is a peaceful nature built epigenetically and maintained through social support, they can live mindfully and sustainably like other animals in natural conditions. In terms of evolution, barring the need to employ survival systems to survive (eat, reproduce, and react to threat cues), peaceful processes are predominant in nature. Species coexist and mutually help one another (Margulis 1998).

Recent neurobiological research has confirmed what ancestral societies knew intuitively from generations of practice and attention – that meeting a baby's needs with EDN-consistent practices fosters a well-functioning brain, body, and person. We understand now that this occurs through epigenetic and plasticity effects during the time period when thresholds and system parameters are being established. The body/brain has to work well for the person to develop optimal morality. One can imagine that a child who was too anxious, stress reactive, or aggressive would have made a difficult member of the community and would not have survived in SBHG communities. Cooperation was of utmost importance in a physically challenging environment. When the EDN is not provided (undercare), empathy can be undermined and autonomy uncontrolled by empathy. Nevertheless, cultures and individuals can revamp their capacities for peaceable existence with immersion in environments and activities that foster intuitions for engagement and communal imagination.

References

Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review*, **3**(3), 269–275.

Bargh, J.A. (1989). Conditional automaticity: Varieties of automatic influence in social perception and cognition. In J.S. Uleman & J.A. Bargh (Eds.), *Unintended thought* (pp. 3–51). New York: Guilford.

Barnard, A., & Woodburn, J. (1997). Property, power and ideology in hunter-gathering societies: An introduction. In T. Ingold, D. Riches, & J. Woodburn (Eds.), *Hunters and gatherers, Vol. 2: Property, power and ideology* (2nd ed., pp. 4–31). Oxford: Berg.

Bird-David, N. (1990). The giving environment: Another perspective on the economic system of hunter-gatherers. *Current Anthropology*, **31**, 189–196.

Bird-David, N. (1998). Beyond "The original affluent society": A culturalist reformulation. In J. Gowdy (Ed.), *Limited wants, unlimited means: A reader on hunter-gatherer economics and the environment* (pp. 115–138). Washington, DC: Island Press.

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

Bowen, E.S. (1964). *Return to laughter*. New York: Doubleday Anchor.

Brosnan, S.F., & de Waal, F.B.M. (2014). Evolution of responses to (un)fairness. *Science*, **346**(6207). doi:10.1126/science.1251776

Champagne, F. (2014). The epigenetics of mammalian parenting. In D. Narvaez, K. Valentino, A. Fuentes, J. McKenna, & P. Gray (Eds.), *Ancestral landscapes in human evolution: Culture, childrearing and social wellbeing* (pp. 18–37). New York: Oxford University Press.

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

Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Publishing.

Dentan, R.K. (1968). *The Semai: A nonviolent people of Malaya*. New York: Harcourt Brace College Publishers.

Dirkmaat, D. (Ed.). (2012). *A companion to forensic anthropology*. New York: Wiley-Blackwell.

Eisenberg, N. (2000). Emotion, regulation, and moral development. *Annual Review of Psychology*, **51**, 665–697.

Emde, R.N., Biringen, Z., Clyman, R., & Oppenheim, D. (1991). The moral self of infancy: Affective core and procedural knowledge. *Developmental Review*, **11**, 251–270.

Everett, D. (2009). *Don't sleep, there are snakes: Life and language in the Amazonian jungle*. New York: Vintage.

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

Gilbert, P. (2010). *Compassion-focused therapy*. London: Routledge.

Gowdy, J. (Ed.). (1998). *Limited wants, unlimited means: A reader on hunter-gatherer economics and the environment*. Washington, DC: Island Press.

Hayashi, T., Tsujii, S., Iburi, T., Tamanaha, T., Yamagami, K., Ishibashi, R., Hori, M., Sakamoto, S., Ishii, H., & Murakami, K. (2007). Laughter up-regulates the genes related to NK cell activity in diabetes. *Biomedical Research*, **28**(6), 281–285.

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

Hogarth, R.M. (2001). *Educating intuition*. Chicago: University of Chicago Press.

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

Ingold, T. (1999). On the social relations of the hunter-gatherer band. In R.B. Lee & R. Daly (Eds.), *The Cambridge encyclopedia of hunters and gatherers* (pp. 399–410). New York: Cambridge University Press.

Jacobs, D.T. (1998). *Primal awareness*. Rochester, VT: Inner Traditions.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. New York: Delta.

Kimmerer, R.W. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Minneapolis, MN: Milkweed Editions.

Kochanska, G. (2002). Mutually responsive orientation between mothers and their young children: A context for the early development of conscience. *Current Directions in Psychological Science*, **11**(6), 191–195.

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

Lafitau, J.-F. (1974). *Custom of the American Indian* (Vol. **1**, Trans. and eds. W. Fenton & E. Moore). Toronto: The Champlain Society. (Original work published 1724)

Lee, R.B. (1979). *The !Kung San: Men, women, and work in a foraging society*. Cambridge: Cambridge University Press.

Lee, R. (1988). Reflections on primitive communism. In T. Ingold, D. Riches, & J. Woodburn (Eds.), *Hunter and gatherers, Vol. 1: History, evolution and social change* (pp. 252–268). Oxford: Berg.

Lee, R. (1998). What hunters do for a living, or, how to make out on scarce resources. In J. Gowdy (Ed.), *Limited wants, unlimited means: A reader on hunter-gatherer economics and the environment* (pp. 43–64). Washington, DC: Island Press.

Lee, R.B., & Daly, R. (Eds.). (1999). *The Cambridge encyclopedia of hunters and gatherers*. New York: Cambridge University Press.

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

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

Marshall, L. (1961). Sharing, taking, and giving: Relief of social tensions among !Kung Bushmen. *Africa*, **31**, 231–249.

Marshall, L. (1976). *The !Kung of Nyae Nyae*. Cambridge, MA: Harvard University Press.

Meaney, M.J. (2010). Epigenetics and the biological definition of gene X environment interactions. *Child Development*, **81**(1), 41–79.

Montagu, A. (1957). *Anthropology and human nature*. New York: MacMillan.

Narvaez, D. (2005). The Neo-Kohlbergian tradition and beyond: Schemas, expertise and character. In G. Carlo & C. Pope-Edwards (Eds.), *Nebraska Symposium on Motivation, Vol. 51: Moral motivation through the lifespan* (pp. 119–163). Lincoln: University of Nebraska Press.

Narvaez, D. (2013). 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. 341–358). 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., & Gleason, T. (2013). Developmental optimization. In D. Narvaez, J. Panksepp, A. Schore, & T. Gleason (Eds.), *Evolution, early experience and human development: From research to practice and policy* (pp. 307–325). New York: Oxford University Press.

Narvaez, D., Gleason, T., Wang, L., Brooks, J., Lefever, J., Cheng, A., & Centers for the Prevention of Child Neglect. (2013a). The evolved development niche: Longitudinal effects of caregiving practices on early childhood psychosocial development. *Early Childhood Research Quarterly*, **28**(4), 759–773.

Narvaez, D., & Lapsley, D.K. (2005). The psychological foundations of everyday morality and moral expertise. In D.K. Lapsley & C. Power (Eds.), *Character psychology and character education* (pp. 140–165). Notre Dame, IN: University of Notre Dame Press.

Narvaez, D., Panksepp, J., Schore, A., & Gleason, T. (Eds.). (2013b). *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., & Gray, P. (2014). *Ancestral landscapes in human evolution: Culture, childrearing and social wellbeing*. New York: Oxford University Press.

~~Narvaez, D., Wang, L., & Cheng, A. (2015). Evolved developmental niche history: The effects of early experience on adult health and morality. Manuscript under review.~~Narvaez, D., Wang, L, & Cheng, A. (2016). Evolved Developmental Niche History: Relation to adult psychopathology and morality. Applied Developmental Science, 4, 294-309. http://dx.doi.org/10.1080/10888691.2015.1128835

Narvaez, D., Wang, L., Gleason, T., Cheng, A., Lefever, J., & Deng, L. (2013c). The evolved developmental niche and sociomoral outcomes in Chinese three-year-olds. *European Journal of Developmental Psychology*, **10**(2), 106–127.

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

Porges, S.W., & Carter, C. (2010). Neurobiological bases of social behavior across the life span. In M.E. Lamb, A.M. Freund, & R.M. Lerner (Eds.), *The handbook of life-span development. Vol. 2: Social and emotional development* (pp. 9–50). Hoboken, NJ: John Wiley & Sons.

Sahlins, M. (1972). *Stone age economics*. New York: Aldine de Gruyter.

Sahlins, M. (1998). The original affluent society. In J. Gowdy (Ed.), *Limited wants, unlimited means: A reader on hunter-gatherer economics and the environment* (pp. 5–42). Washington, DC: Island Press.

Schore, A.N. (1996). The experience-dependent maturation of a regulatory system in the orbital prefrontal cortex and the origin of developmental psychopathology. *Developmental Psychopathology*, **8**, 59–87.

Schore, A.N. (2001a). Effects of a secure attachment relationship on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal*, **22**, 7–66.

Schore, A.N. (2001b). The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal*, **22**, 201–269.

Schore, A. N. (2003a). Affect dysregulation & disorders of the self. New York, NY: Norton.Schore, A. N. (2003b) Affect regulation and the repair of the self. New York, NY: Norton.Shepard, P. (1982). *Nature and madness*. Athens: University of Georgia Press.

Sue, D.W., Bingham, R.P., Porche-Burke, L., & Vasquez, M. (1999). The diversification of psychology: A multicultural revolution. *American Psychologist*, **54**, 1061–1069.

Thomas, E.M. (2006). *The old way: A story of the first people*. New York: Picador.

Tomkins, S. (1965). Affect and the psychology of knowledge. In S.S. Tomkins & C.E. Izard (Eds.), *Affect, cognition, and personality*. New York: Springer.

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

Turnbull, C.M. (1983). *The human cycle*. New York: Simon and Schuster.

Valentine, E., & Evans, C. (2001), The effects of solo singing, choral singing and swimming on mood and physiological indices. *British Journal of Medical Psychology*, **74**, 115–120.

Van der Post, L. (1961). *The heart of the hunter: Customs and myths of the African Bushman*. San Diego, CA: Harvest/Harcourt Brace & Co.

Wilkinson, R., & Pickett, K. (2009). *The spirit level: Why greater equality makes societies stronger*. New York: Bloomsbury.

Wolff, R. (2001). *Original wisdom*. Rochester, VT: Inner Traditions.

Woodburn, J. (1998). Egalitarian societies. In J. Gowdy (Ed.), *Limited wants, unlimited means: A reader on hunter-gatherer economics and the environment* (pp. 87–110). Washington, DC: Island Press.

World Health Organization (WHO) & UNICEF. (2009). *Baby-Friendly Hospital Initiative: Revised, updated and expanded for integrated care*. Geneva: World Health Organization. Available from http://www.who.int/nutrition/publications/infantfeeding/bfhi_trainingcourse/en/Zak, P. (2012). The moral molecule: The source of love and prosperity. New York: Dutton Adult.