Baselines for Virtue
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Abstract: In this last 1% of human genus existence, many humans have forgotten what humans are and what they can be.[i] We have forgotten many things, including human origins, what humans need for typical development, and for positive development and optimal functioning. Baselines for human virtue are better found in converging scholarship and scientific evidence from anthropology, evolution and neurobiology, evidence that emphasizes processes and systems developed over the course of human evolution. Across human societies through time, leaving nonhuman entities out of the picture is not the typical way humans have viewed virtue. The notion of virtue, in my view, includes flourishing and living the life that is good for a creature to live cooperatively with and within a biodiverse world.

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Our screens and newspapers are filled with human violence, aggression, mental illness and abuse. Some yawn and think this is "normal" for humans and even argue that social life is much better than it used to be in humanity's distant past (Pinker, 2009, but see Fry, 2013). Such a view represents the tyranny of the contemporary, a fallacy that does not fit the data about the past nor the characteristics humans accumulated through their emergence through the tree of life. When we look at the data carefully, we can see that when humans are properly developed, they are more like the peaceful bonobos (who French kiss and have sex frontally like humans) than male chimpanzees whose violent (so-called 'selfish gene') tendencies are cited as a justification for human violence (Wrangham & Peterson, 1997).

It is my contention that in this last 1% of human genus existence, many humans have forgotten what humans are and what they can be.[ii] We have forgotten many things, including human origins, what humans need for typical development, and for positive development and optimal functioning. As a result, we have experienced a slippage in baseline assumptions, a common problem across scholarship (Pauly, 1995) as scholars tend to make contemporary experience a baseline for gauging what is normal. I'd like to redirect attention to a longstanding baseline and reexamine human potential, an aim typical for virtue theories (Kupperman, 2005).

What is virtue? People often look back to the ancient Greeks like Aristotle, whose writings about virtue are extant. But the purview for virtue among the Greeks and by scholars today typically includes only humans, and "civilized' humans at that. In my view, extracting a baseline from the last 1% of human genus existence (last 15,000 years or so since "civilization" began) is misleading. Discussions of virtue often skip over what humanity in the 1% has done, often intentionally, to the rest of the natural world since the beginning of totalitarian agricultural and at an increasingly accelerated pace in the last millennium (Merchant, 2003). The cultures that became dominant during this period depersonalize plants and animals, adopting a view of human superiority and rightful enslavement of nonhumans for human purposes. Responsible for the demise of much of the planet's life, bio- and cultural diversity, using the last 1% as a frame gives us an inappropriate baseline—one that likely incorporates a similar destructive mindset of human superiority. Obviously, this is humanistically narcissistic, especially if we take into account views from the majority of societies through human history that treated nonhuman entities (e.g., animals, plants, mountains, rivers) as agents too, with purposes deserving of respect. Across human societies through time, leaving nonhuman entities out of the picture is not the typical way humans have viewed virtue (Ingold, 1999).

Baselines for human virtue are better found in converging scholarship and scientific evidence from anthropology, evolution and neurobiology, evidence that emphasizes processes and systems developed over the course of human evolution. The notion of virtue, in my view, includes flourishing and living the life that is good for a creature to live cooperatively within a biodiverse world. Aquinas (after Aristotle), noted that all people desire the good in any given moment, (and when raised well, are good). "Every creature is oriented toward its own goodness, that is, its fullness of being in accordance with the ideal of its species" (Porter, 1990, p. 49). There is no distinction between what a person should do and what is in the person's best interest. In fact, all animals are oriented to the good of the universe as a whole (Aquinas, I. 65.2; Porter, 1990, p. 50). This is actually a biological, not just a metaphysical imperative: biology is driven to optimize self-development in the moment.

Each animal learns which ways of being are most effective. "Most behaviors are intermixtures of innate and learned tendencies" (Panksepp, 1998, p. 38). Birds don't need to learn about *how* to fly, it's hardwired, but about *where* to fly. Young rats don't need to learn to rough and tumble play but "which moves are most effective" (ibid, p. 27). Similarly, children don't learn about sociality, it's hardwired, but they learn *how* to be social in a life of relationships. Under evolved expected care (described below), interactions are those that are socially respectful (Turnbull, 1983). In this context, Piaget's (1932) adage is true: "morality is the logic of action" because, at least in part, moral behavior leads to greater survival, thriving and dispersal

(Gottlieb, 1991), but it is necessarily a biosocial logic, that is, we co-construct ourselves, including our biological and genetic functions, *within relationships* (Ingold, 2013).

Virtue learning, like all learning, is *bio*social. Thus, precursors to adult moral capacities are embodied, shaped by caregiving practices in childhood, best through practices that evolved to match the maturational schedule of the child. Virtue is initially biological bottom-up learning from relational immersion in early life (Kochanska, 2002). Implicit biosocial procedural knowledge that underlies conscious thought is shaped by supportive environments with mutually-responsive caregiver relations in which cognitive and emotional capacities develop together (Greenspan & Shanker, 2004; Narvaez, 2014). There is an evolutionary standard I will describe that, when violated, impairs the trajectory of virtue development at the biological level, affecting moral intuitions, sensitivity to situations, and capacities for deliberation. Because each organism is designed to aim for what is good in the moment, misdevelopment can make aims go awry.

Going beyond Aristotle's focus on humanity, I will argue that neither human development nor virtue is an exclusively human affair. A morally virtuous life accounts for the web of relationships, the *whole* web and *all* relationships (including with nonhuman entities). I touch on all these topics. But first, a better understanding of humanity's evolutionary story and the baseline for human virtue are needed.

What is a Human?

To begin to fully understand baselines, one must understand where a human is situated horizontally--in the tree of life and the animal kingdom, and vertically—developmentally in social life. (These ideas are discussed in more detail in Narvaez, 2014.)

Tree of Life. First, of course, humans are integrated with all life forms through the tree of life, for example, through DNA inheritances—we share 98% of our DNA with bonobos and chimpanzees, over 99.999 with one another (very little competes). We also are integrated with most life forms through extra-genetic inheritances like body and cell plans (Margulis, 1998). In fact, Darwin (1871) pointed out how humanity's moral sense includes multiple characteristics gathered through evolution. Further, to get baselines right for virtue, one must attend to *where* humans are—on a biodiverse, deeply cooperative earth (Margulis, 1998). The natural world is one of cooperative mutualism and humans are part of that. We evolved with biodiversity and need it to thrive. Our bodies are a case in point. Each human body is a community of organisms. A person's biome has trillions of organisms. Of the genes we each carry, 90-99% are not human (Dunn, 2011).

Mammalian Nature. Next, it is important to understand that humans are animals, animals of a certain sort, with basic needs that must be met for optimality. Animals need warmth and nourishment without which they cannot survive. But humans are also mammals who need affection and play; and as *social* mammals humans need bonding and community support. When these needs are not met, social mammals do not develop optimally (Panksepp, 1998). Further, humans need meaning and purposeful activities in a community, one that engages hearts and imaginations. Otherwise individuals (and groups) can become paranoid and create destructive ideologies.

Developmental Immaturity. One of the key features of human beings is their extreme immaturity at birth and their lengthy maturation. At birth humans resemble the fetuses of other animals and should stay in the womb another 9-18 months, but when humans became bipedal, pelvises shrank, making that impossible (Trevathan, 2011). Not only are humans the most immature of hominids they, have the longest developmental maturational schedule of any animal (20 years for physical growth; longer for brain development). As a result, much of who humans become is shaped by caregiving, especially in early life when brain and body systems are establishing their parameters and thresholds (Narvaez, Panksepp, Schore & Gleason, 2013), making humans truly biosocial creatures (Ingold, 2013).

One would think that with such immaturity and extensive maturational schedule, humans would have evolved caregiving practices to make up the difference. Indeed, like all animals, humans evolved an early "nest" that matches the evolved maturational schedule of the offspring (Konner, 2005). Animal experiments show the effects of the early nest on the young. Though, as noted above, human offspring needs are much greater than the animals used in experiments, the studies demonstrate how caregiver behavior has dynamic and epigenetic effects on infants. For example, Hofer (1987, 1994; Polan & Hofer, 1999) tested eight physiological systems in rat pups and found that the presence of the mother coordinated each one. Michael Meaney and colleagues have demonstrated the power of maternal care on rat pups in several classic experiments. Those with nurturing mothers during a critical window turn on gene expression to control anxiety for the rest of life whereas those with low nurturing mothers never do (for reviews, see Meaney, 2001, 2010). Meaney's research group has found similar epigenetic effects in humans (McGowan et al., 2009). The developmental plasticity in early life means that the nest parents provide will have significant effects on development and trajectory of the offspring.

The Human Evolved Developmental Niche (EDN). The required intensive parenting after birth has been called "exterogestation," a type of "external womb" (Montagu, 1978). This extra-genetic "evolved

developmental niche" (EDN) matches up with the maturational schedule of the young child, shaping body/brain systems for optimal functioning. EDN-consistent care in early life includes longterm breastfeeding, extensive positive touch, responsiveness to child needs to avoid distress, extensive free play in the natural world with multi-aged mates, social support, and soothing birth experiences. Scientific studies are demonstrating that these experiences all have long term effects on health and wellbeing, shaping the trajectory of multiple systems into adulthood (for reviews by experts see Narvaez, Panksepp et al., 2013; Narvaez, Valentino, Fuentes, McKenna & Gray, 2014).

So, we have established built-in characteristics of human beings as special social mammals and we have noted baselines for early life care that shapes human nature. We can say that when individuals receive EDN-consistent care they develop in a species-typical direction. When they don't, they develop in a species-atypical direction. How do we know what human nature looks like either typically or atypically? We need one more baseline.

Our 99%. Humanity spent most of its history in small-band hunter-gatherer communities (SBHG) which have been studied both contemporaneously and historically (Lee & Daly, 1999). These are immediate-return societies, that is, they do not collect possessions, domesticate animals, or cultivate plants. They are nomadic bands of 5-25 persons, on average. They live close to the earth and, like other migratory animals, move on before an area's resources are damaged beyond repair. Common social characteristics are found in small-band hunter-gatherer societies all over the world, suggesting that it is a stable organization (Gowdy, 1998; Sahlins, 1968). Worldwide, these communities have three things in common (for greater detail, see Ingold, 1999; Narvaez, 2013): First, as adults, they show a common prosocial personality that is inclusive, humble, egalitarian and generous. Second, culturally these societies demonstrate peaceful cooperative living, mostly gathering foods but also hunting. Much time is spent in leisure and pleasurable social interaction. Generosity and sharing are expected, as are noncoercive relationships. Third, child raising follows the EDN; in fact, that is where anthropologists observed the common human EDN (Konner, 2005).

We can surmise that providing the EDN is at least partially related to the personalities and cultural practices of the adults. Of course we cannot return to the lifestyle of our 99% in full but there are things we can learn. It gives us a glimpse into human possibility for fostering and maintaining virtue.

Baselines for Virtue Development

Let's examine what EDN-consistent parenting brings about, extrapolating from the evidence gathered by anthropologists and first-contact explorers and linking it to the neurobiological evidence (see Narvaez, 2013, 2014 for details). When babies receive the care they evolved to need, they start on a species-typical trajectory toward virtue and flourishing. The self is largely unconscious in early life, emerging at birth, if not before, when the infant is ready to communicate with caregivers (Trevarthen, 2005). The sense of self is launched in early life through collaborative experience with mother, at first with somatosensory experience internal and external to the body (Winnicott, 1957). In the first months of life, the infant is able to communicate affectively with caregivers in multiple ways, including physical movement and face-to-face sharing of emotional signaling, in these ways exercising and developing emotion systems (Beebe, Lachmann, & Jaffe, 1997; Tronick, 2007). The child shows creativity and imagination in relationship (Trevarthen, 2005). Children learn self-regulation capacities from the external regulation (calming) that caregivers provide. They learn empathy from their immersion in empathic relationships. Children learn how to *be* in relationship.

We are learning from integrative studies, including developmental neuroscience, that everyday morality relies on the nature of one's embodiment—how well the body/brain works in social situations. The contention here is that early experience influences not only health and wellbeing but also moral capacities and moral orientation.[iii] The strength of the prepared inheritances identified by Darwin as part of the moral sense (e.g., empathy, social pleasure) appears to require particular experiences at critical times of development. Just like genes are impotent without experience "turning them on" (gene expression or epigenetics), the development of moral capacities appears to depend on particular types of social support (Kochanska, 2002). In fact, lacking the responsive care of shared emotional signaling in early months, an infant's trajectory may be shifted away from full social capacities. Without intensive training of emotional signaling at sensitive periods—when emotion systems are being "tuned up" with what will be a tacit knowledge base—the individual may never develop the fluidity of the interrelational dance of his culture.

What type of moral virtue trajectory develops with EDN-consistent care in early life? Putting together the different sources of information thus far mentioned, there are two aspects built in early life that might be called moral subcomponents (Kupperman, 2005), that construct an "affective core" upon which a virtuous life is founded (Emde et al, 1991). EDN-consistent care fosters a disposition towards relational attunement in-the-moment that

relies on capacities for emotional presence and empathic embrace, an Engagement orientation takes into account the welfare of the face-to-face other. With development and maturation, Engagement capacities form the foundations for Communal Imagination—an inclusive use of abstracting capabilities. In this case, autonomy is kept within the bounds of empathy--actions are taken with the welfare of others in mind (Narvaez, 2013, 2014). The human inheritances of Engagement and Communal Imagination are egalitarian and attuned to the social world (inclusive of nonhumans in indigenous contexts). Such capacities are grounded in EDN-consistent care, the baseline for optimal, species-typical development.

In my lab we have been examining the relation of EDN-consistent care to early moral virtue development. Preschool children who have more EDN-consistent care demonstrate more empathy, self-regulation and conscience development (Narvaez, Wang, Gleason, Cheng, Lefever & Deng, 2013). Longitudinally, for example, those with more observed maternal positive touch in the first years of life had fewer behavior problems at age 3 (Narvaez, Gleason et al., 2013). When adults report on their childhoods, greater EDN-consistent care is related to greater empathy and perspective taking (Narvaez, Wang & Cheng, 2015).

Depending on whether early experiences match or mismatch with the EDN, different physiologies and moral habits emerge. Thus are individual virtue trajectories influenced by early caregiving. When the EDN is violated, what appears logical is no longer evolutionarily normative morality but something else. When the EDN is missing, individual development necessarily will be suboptimal—i.e., not reach human potential.

The Evolutionary Moral Fall

Childrearing practices in many nations have shifted away from the evolved developmental niche. In the USA, there have been considerable changes in child birthing and rearing practices, many over the course of the 20th century, which may have a causal relation to "the hedonism of the 1960s, the narcissism of the 1970s, the materialism of the 1980s, and the apathy of the 1990s" (Peterson and Seligman, 2004, p. 5). For example, before World War II most babies were born at home whereas after the war most were born in hospitals in ways designed to be convenient for doctors, with little understanding of the impact on infants, and accompanied by beliefs that infants don't feel pain. Books and shows depicting childbirth and subsequent motherhood in the 1950s such as *The Hours* or *Mad Men* provide illustrations of mothers who did not deeply bond with their children as a result of these hospital practices. Such effects cascade across generations.

The caregiving environment that has been normalized by culture represents an aberration in human species history, creating systematic "undercare" of children, denying their evolved needs. Indeed the increasing epidemics of diseases in mental, physical and social health in Americans suggest that something is very wrong with childrearing (National Research Council, 2013; Shonkoff & Phillips, 2002; Shonkoff et al., 2012). For many human beings today, flourishing is not an outcome.

The natural flow of childhood established over hosts of generations has been radically shifted. In today's world, because so many untoward and haphazard experiences occur during sensitive periods for brain/body development, individuals have a wider range of psychopathologies than in environments that support and provide the EDN (Narvaez, Panksepp et al, 2013b). If the child has to scream consistently to get needs met, her body and brain misdevelop, becoming more stress reactive, curtailing growth of higher functions and undermining socioemotional intelligence.[iv] If the baby is isolated and left in despair (as in "cry-it-out" sleep training) then the child learns that both her body and the world are untrustworthy. She learns to withdraw from living life very fully. She learns procedurally not to rely on such a worrisome world. The social separation that is forced on infants and children in settled, particularly Western, societies influences perceptions, attention, and social capacities, creating 'one-person' psychologies and avoidant attachment. Poor emotion development leads to practices of keeping others at a distance and parents transfer this social distancing to their children. In fact, empathy in USA college students is decreasing while avoidant attachment is increasing (Konrath et al., 2011; Konrath, Chopik, Hsing & O'Brien, 2014). EDN-deprived people are set on a trajectory to grow into emotionally illiterate people consumed by narcissism, also increasing in college students (Twenge & Campbell, 2009). The shifted baselines for childrearing away from the EDN contribute to the shift in understanding what is considered to be normal human behavior and human nature.

Socio-emotional illiteracy leads to self-protectionism: social encounters are win-lose, all or nothing, or zero tolerance, making it difficult to cooperate across perceived divisions (which are everywhere when you are socio-emotionally impaired). A "protectionist" orientation is governed by survival systems present at birth: emotion systems of FEAR, RAGE and PANIC.[v] The stress response is related to the functioning of these systems so much so that when the stress response becomes habitual early on, these primitive systems will dominate personality in part because self-regulatory systems governed by the right hemisphere and prefrontal cortex are underdeveloped from the toxic stress of undercare. When primitive survival systems dominate action, the individual is oriented to threat and dominance

and cannot be sensitive to the needs or communications of others except in those terms. Attention is preoccupied with self-protective routines and ideologies. The individual compulsively moves to a hierarchical moral relation (one-up or one-down) for self-protection, often based in procedural memory from early life (e.g., power struggles to get needs met).

The Self-Protectionist ethic aims to re-secure a sense of safety, trumping all other values in the moment. The two subtypes of a safety mindset that operate "in the moment" are the anger-based, aggressive Combative or Bunker Protectionism and the fear-based, appeasing Compliant or Wallflower Protectionism. In the aggressive form 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 fear-based safety subtype operates in a dissociated state (detachment from the immediate situation), cut off from the normal flow of external and internal stimuli. The individual gives in, feeling paralyzed or too weak to take action and so withdraws physically and/or emotionally from presence with the other. Energy can be internalized towards anxiety and depression. This approach, too, can become habitual in social situations as a way to cope in a perceived hostile environment. Or, individuals can flip between the aggressive and withdrawing forms, depending according to the situation. Dominance-submission reactions can happen quickly and unconsciously to unfamiliar ideas, actions or people.

The primitive, self-protective survival systems are rigid and so the individual will demonstrate inflexibility and a reliance on routines and precedent—he is unable to be emotionally present to the unfamiliar or relationally attuned to others in the moment; instead he will react to others as members of a category. In other words, one is *less* perceptive and attentive to reality and less sensitive to the needs or interests of others. One loses free will and is governed by past fear and anger conditioning. Such insecurity and self-protective procedural memory undermine virtue. When the EDN is missing, generally, one is less imaginative, less gracious, less aware and perceptive because one has had to spend growth and energy excessively on mechanisms for survival, control, or withdrawal.

How much one resorts to using these innate instincts for self-protection in moral decisions and actions can be initiated during the preverbal years of life (or later from trauma during other sensitive periods), with lasting effects on imagination, openness and sensitivity to others. Those with EDN-impoverishment are more likely to develop skills for detachment and withdrawal as well as dominant aggression and vicious imagination.

In my lab we have accumulating evidence to support these conclusions (Narvaez, 2013b; Narvaez, Brooks & Mattan, 2011; Narvaez, in preparation). For example, we have developed short questionnaires to measure how much a person is oriented to a particular mindset (safety, engagement, imagination). Each set of terms is presented separately: general safety: controlled, tough, unyielding, competitive; engagement: caring, compassionate, merciful, cooperative; imagination: thoughtful, reflective, inventive, reasonable. We find that Engagement is correlated with secure attachment, empathy, and integrity. A general Self-Protectionist (Safety) orientation is correlated with insecure attachment, distrust and lack of integrity. We have also developed a measure to examine the relation between retrospectively-reported EDN experience on adult health and moral functioning. In a study of over 400 adults EDN was correlated with ethical orientation (Narvaez, Wang & Cheng, 2015). The EDN items ask about childhood experience in terms of breastfeeding length, responsivity (combination of happiness, support, responsiveness to needs), touch (affection, corporal punishment), play (adult-organized, free inside, free outside), and social support (family togetherness). We used measures of the two safety-focused orientations: *combative* ("combative, vigilant, belligerent, fierce") and *compliant* ("submissive, yielding, timid, unassertive") orientations. We found significant effects. A *combative orientation* was related to less family togetherness and less play inside and outside. A *compliant orientation* was related to less family togetherness, less affection, less organized play and less free play inside and out. On the positive side, an *engagement orientation* was related to having experienced in childhood longer breastfeeding, greater response care, greater affectionate touch, less corporal punishment, more free play inside and outside, and greater family togetherness. *Imagination orientation* was related to longer breastfeeding, greater responsivity, less corporal punishment and greater inside and outside play, and greater family togetherness. The lack of family social support and play were related to both safety orientations with lack of affection also mattering for compliant orientation. Engagement and imagination were correlated with all EDN variables except that only engagement related to affectionate touch. In addition, anxiety and depression were positively correlated with compliant and combative ethics and negatively correlated with engagement and imagination. As expected, poor mental health was related to more self-concerned moral orientations.

So we have converging evidence that human virtue may be undermined by early experience that does not match up with evolution. What do we do now?

Recovering from Culture Trumping Biology

In effect in the last 1% of human genus history, culture and ideologies have trumped biology and evolution. Cultures and religions have decided that human animal nature is to be ignored, beginning with denying babies what they yearn for—the physical, loving attention of mother and caregivers. When parents are told that babies are evil or can be spoiled, they ignore or punish them for the needs they express, and end up co-constructing poor physiology and mistrust from which the child's dispositions towards life emerges. Without the EDN, individuals and groups are more self-protective, easily stressed and threat reactive. Misdeveloped people create cultures and lifestyles to match, ones that undermine flourishing for all by letting their behaviors be dominated by fear, greed, anger, revenge, or emotional detachment from the wellbeing of others.

Thomas Hobbes (1651/2012), inspired by Thucydides, considered human nature to be rebellious and ungovernable, an aberrant view among human societies (Sahlins, 2008). Hofstede (1984) suggests that the USA was built on this Hobbesian philosophy, along with the religion of Calvin—both considering human nature to be at odds with goodness. So it is not a surprise that the brains of those raised in the USA are marked with threat (Baumeister & Vohs, 2004). But the tide is changing towards emphasizing the cooperativeness and compassionate nature of humanity (de Waal, 1996; Keltner, 2009). Indeed, cultures can change. Norway, once violent, is now a leading peacemaker in the world (Fry, 2006). Humans have successfully dismantled several moral travesties, such as the Atlantic slave trade. We can re-adopt the systems that promote our optimal nature and grow it with greater awareness and intelligence, understanding ourselves as dynamic systems whose initial conditions affect long term wellbeing and virtue.

The right brain hemisphere is deeply involved in self-regulation, empathy and capacities for "presence," so the undermining of its development during its scheduled growth spurt in early life is unsound. If survival systems were extensively activated and self-protection rehearsed in early childhood, an emotional commitment to self-protection in adulthood should be no surprise. A reshaping of automatic behaviors will be needed. The right hemisphere can grow throughout life and can change from experiences that allow the individual to "re-parent" capacities for relational attunement. For example, at least some neurobiological aspects of engagement and communal imagination may be changeable later in life.[vi] One can build them up as a novice often learns a skill, following a set of practices step by step with guidance from mentors (for detailed suggestions, see Narvaez, 2014). One can foster appropriate intuitions and implicit understanding from being immersed in environments that fosters good intuitions (Hogarth, 2001)—those that emphasize and display virtue, not vice. One can use one's abstraction capacities to select new environments to foster new intuitions, deliberately practice new skills, and review the narratives that guide one's life. Iris Murdoch, like Simone Weil, placed a great deal of emphasis on attention. Attention shapes desires (Murdoch, 1989). Keeping this in mind, one can foster an Engagement orientation with practices of mindfulness and compassionate meditation. Resetting one's vagus nerve, the 10th cranial nerve that enervates every system in the body, can be done through self-calming practices such as meditation and deep breathing (Kabat-Zinn, 1990). In classrooms, student engagement can be fostered in this manner (Lozada, D'Adamo & Carro, 2014) and with programs that bring babies to school (e.g., Gordon, 2003). Therapy can release the anger or fear that is tightly, implicitly held, and actually rewire brain networks (Doidge, 2007). One can read sympathetic accounts of people who are different and thereby increase empathy for them.

If we constrict our circle of concern to include only other humans, a human-exclusive evolved developmental niche is sufficient. Moral virtue in adulthood will be built upon the early empathic effectivity roots, capacities for action within the bounds of empathy, which will circumscribe the extension of an individual's actions. However, whether aware of it or not, we exist and develop in a web of relationships that extends beyond humanity. It may be a matter of justice and also intelligence to expand our circle of empathic and moral concern to all entities. I believe that a virtuous life, one that encompasses respectful and supportive relationships with all entities, requires it.

Linking to the Communal Whole

Among indigenous groups, Engagement and Communal Imagination extend to non-humans as well. Indigenous peoples consider this inclusivity a matter of responsibility but also survival. Intensive agriculture in the last 1% brought about the common practice among settled communities to treat living things in nature as objects to be manipulated (or feared), to not feel in relationship with them. This makes it easy to mistreat them. Insensitivity to the natural world is perpetuated by foundational principles of many Western enterprises—from science, which treats any entity other than human as an object, to economics, which breaks relational responsibility to others in advocating the hoarding of capital and exploiting the natural world as "resources," to religions that emphasize humans as superior dominators to the rest of the natural world. The dominance orientation of empire that treats the entities of the earth like expendable or dead objects has led to the decimation of biodiversity and speciescide all over the world. Every

ecosystem on the planet is under duress from human activity (Millenium Ecosystem Assessment, 2005), half the species present in 1970 have disappeared (World Wildlife Fund, 2014), and the climate is highly unstable (Intergovernmental Panel on Climate Change, 2014). To turn things around, human intelligence needs to be much more expansive, moral sensitivity broadened and nature-inclusive virtue developed. We may need to take up the ecological perspective of many indigenous societies.

Small-band hunter gatherers (SBHG) have a "common-self" view of the natural world where humans are one among many entities sharing the gift economy of the natural world. Among the indigenous, human humility is practiced in face of the natural world. SBHG raise virtuous individuals from the ground up with whe EDN preparing a common base for human personality that reflects a host of virtues, including humility, generosity, self-control and flexibility. SBHG social practices fit with nature's laws. Life is embedded in nature. Survival and virtue go hand in hand. One cooperates with nature instead of trying to dominate it. One honors the agency and purpose of nonhumans. The welfare of nonhuman entities is tied to one's own welfare as a human and as a human community. In SBHG societies, especially in the past, living close to the earth, virtue and survival were intertwined or one perished. This is actually true for us as well, though we have cushioned ourselves from that awareness and are currently spending Nature and destroying our habitat and that of many species.

When we expand our circle of concern to include all of nature, we realize the embeddedness of the early nest in the natural world, the co-development of child and animal, child and plant, and the receptive intelligence that develops from such an immersion. In this case, adults integrate the young child's life into the natural world and model concern for a natural world as full of agents for whom we care and have responsibility. The self "moves with" Nature instead of against it (Ingold, 1999).

Conclusion

Adults can revamp their mindsets, fostering Engagement and Communal Imaginations that are inclusive of the rest of the entities on the earth. In order to raise children with full capacities, societies need to be redesigned with our social mammalian nature in mind, that is, to build in EDN-consistent care. This needs to include extensive, "listening" experience in the natural world, taking the perspective of nonhumans. As we wake up to our nature, we can "rewild" our hearts, which means "becoming reenchanted with nature…nurturing our sense of wonder…opening our hearts and minds to others…minding animals…imagine the Earth's perspective, which is to say, the collective perspective and well-being of all her inhabitants" (Bekoff, 2014, pp. 5-6).

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[i] Quinn, 1997, calls this the "great forgetting."

[ii] Quinn, 1997, calls this the "great forgetting."

[iii] It must be said that there are other sensitive periods. However, maturational schedules often provide sensitive or critical periods for certain developments. When the window is passed it is next to impossible to change the parameter or threshold that has been engraved into neurobiological processes.

[iv] Babies are not allowed to spend time crying in foraging communities, where it would have attracted predators and created an unhealthy, uncooperative child.

[v] These are capitalized as a reference to specific biological emotion circuits mapped in mammalian brains (Panksepp, 1998).

[vi] As I outline in my book, *Neurobiology and the Development of Human Morality: Evolution, Culture and Wisdom*, adults who were raised harshly without needed supports can self-mend to some degree, for example, with learning self-calming techniques (e.g., deep breathing), building social enjoyment through learning to play with others, and expanding their imaginations by making friends with others from different backgrounds.