



Peace Review

A Journal of Social Justice

ISSN: 1040-2659 (Print) 1469-9982 (Online) Journal homepage: <https://www.tandfonline.com/loi/cper20>

Early Life Experience and Aggression

Mary S. Tarsha & Darcia Narvaez

To cite this article: Mary S. Tarsha & Darcia Narvaez (2019) Early Life Experience and Aggression, *Peace Review*, 31:1, 14-23

To link to this article: <https://doi.org/10.1080/10402659.2019.1613591>



Published online: 25 Jun 2019.



Submit your article to this journal [↗](#)



View Crossmark data [↗](#)



Early Life Experience and Aggression

MARY S. TARSHA AND DARCIA NARVAEZ

Is the human species hard-wired for violence? It is often assumed to be the case, accompanied by the assumption that external controls are needed to mitigate aggressive tendencies. But there are several empirically based counterarguments to this pessimist view, many of which underscore that the pessimistic view reflects shifted baselines—from child-raising practices, to what is considered normal human development and nature. We examine briefly views from ethological, historical, developmental, anthropological, and biological research.

Lethal aggression: Ethological studies indicate that lethal aggression is costly and avoided in the animal kingdom. When animals are aggressive toward conspecifics apart from times of startle, mating, or food, it is due to past trauma or severe stress. Industrialized humans, especially in the United States, are extensively traumatized from birth so it is not a surprise that violence may be high among them (more below). Testosterone is correlated with violent behavior. Unlike today, in many traditional societies, all ages lived together with joint child raising; biological studies show that in order for testosterone to rise, males must separate themselves from children as holding children decreases testosterone. Anthropological studies show that among traditional human societies, although there may be “war games” in which there is dress-up drama between opposing groups, it is mostly for show and little real harm is done in the end. For example, “counting coup” involves nonviolent raids—to touch enemy weapons or steal their horses—to demonstrate personal courage and skill. Even in industrialized societies where men are typically separated from children throughout the day, it used to be difficult to get soldiers to shoot people. The difficulty in training soldiers to shoot individuals diminished with the onset of several modern developments, one of which includes the widespread use of first-person-shooter video games. Moreover, modern warfare is typically waged by people who hold no initial grudge against the other side—they are coerced into it by elites who seek some kind of power.

Evolutionary history: Careful analysis of humanity’s social history challenges the notion that aggression is an innate feature shaped

by evolution. Douglas Fry and colleagues have dismantled the “myths” of a violent past. For example, Fry and Söderberg show that in mobile, small band foragers, the type of society in which the human genus spent 99 percent of its history (no cultivation of plants, domestication of animals nor hoarding of resources; mean size of 26 including children), most lethal aggression is personal (e.g., male jealousy). They found that there is next to no evidence of war behavior among these groups today, or war mortality in the Pleistocene, nor benefit of outside contact and state government.

Moreover, the “chimpanzee model” of violence does not hold for humans. When Fry and Souillac extracted the 21 mobile forager band societies from the standard cross-cultural sample database representing 186 cultural provinces from around the world, they found three societies with no lethal events and one society responsible for 48 percent of the 148 total lethal aggression reports—the Tiwi, which has a clan structure, showing strings of tit-for-tat killings. Among all lethal events, including accidents, the vast majority were homicides by males involved in personal disputes.

Development: Clinical neuroscientist, Allan Schore, hinted at an alternative view to innate aggression: “When a child commits a violent act, it means that his or her developmental trajectory has gone seriously askew so very early in the lifespan.” Some have suggested that there is an increase in “aggression” to age 30 months. Certainly, young children have a surge in autonomy as they become more mobile and test their capacities. So, it is important to examine how researchers are measuring aggression in young children. The aggression metric used by Tremblay and others consists of three items that ask the mother and/or father if the child “never, often or sometimes” (a) hits, bites, kicks; (b) fights; (c) bullies others.

There are several issues with this limited three-item metric. First, there is no reference to context. It is unclear whether the child is truly “aggressive” (which requires some intent to harm), is displaying a surge of autonomy, or is responding to a deprivation of basic needs (e.g., extensive physical touch through carrying and co-sleeping). Second, the metric relies solely on perception of the parent, rather than utilizing a multi-informant approach to validate the behavior. Third, both amount and frequency are unclear: What does “sometimes” mean—once or six times? Once a day or ten times a day? These are response issues that public health research has addressed with more specific questions (recall Woody Allen’s film, *Annie Hall*, where both protagonists were asked by their

respective therapists how often they had sex; the female partner said, “all the time—once a week” and the male said, “never—once a week.”)

Last, it is well documented that children’s behavior is not static but dynamic and often changes depending on the caretaker and the quality of the relationship. There is no evidence in this short metric that the child displays the same behavior across circumstances. Therefore, the question emerges as to where this is truly aggression or a surge of autonomy. It can be argued that this short metric is capturing a less-defined construct that includes autonomy, context-specific reactions to events and needs, and parental perception of the child. Evidence from supportive communities with traditional *laissez-fair* child raising indicate that the notorious “terrible twos” is a Western lamentation; the “terrible twos” is unheard of in these communities. One wonders too then if the Western perception of aggression in young children is a cultural phenomenon rather than an aspect of human nature.

It is noteworthy that gender differences also exist regarding frequency of violent behavior, with males exhibiting more violent acts. Among humans, male children are much more influenced by early experience than females; males have less built-in resilience as well as a slower developmental maturational course. Consequently, they need much more nurturance over a longer period of time than do girls. Diana Baumrind published a report about boys whose parents were warm and permissive (rather than firm and/or cold)—they did not exhibit the aggressive tendencies of typical “boys will be boys” characteristics. It is also important to recognize that it is relatively easy to raise aggressive mammals, accidentally or intentionally, as Harry Harlow and others have demonstrated. Humans are much more social and biosocially constructed than the animal species used in research, and will be even more highly affected by poor early experience.

Genes and epigenetics: Schore suggested that violence is not an innate tendency, thereby challenging the common view that human aggression is inborn. Indeed, one of the most ubiquitous debates in Western science has been the “nature-nurture debate.” This debate, however, is not universal. Instead, the debate adheres to institutions that are rooted in WEIRD societies (“Western, Educated, Industrialized, Rich, Democrats”) where dichotomous thinking is prevalent. Nevertheless, although contemporary experts recognize that genes (nature) and environment (nurture) cannot be understood separately or independently because they are in constant interaction, many lay people and even some scientists attribute greater power to genes than to experience. Mounting empirical evidence supports the interdependence of both factors but the greater power of experience.

No gene predicts any specific psychiatric disorder. It is true that scientists have identified specific genetic markers that are associated with aggressive behavior in adults, but experience plays a critical role. When children carrying the marker experience a negative environment, such as abuse in childhood, the risk for violent behavior significantly increases, whereas otherwise there is no association between the marker and violent behavior. This has resulted in the “genetic differential susceptibility” hypothesis, that some genetic markers are particularly susceptible to environmental influences more so than others because the environment (experience) determines how the gene is expressed. The study of how environments influence genes are expressed or become (in)operative is the field of epigenetics.

Epigenetics research examines the process by which molecular modifications change gene activity without altering the DNA sequence. These molecular modifications come about from experience; that is, experience acts on the genome, often during sensitive periods, altering how much and whether that gene is activated. In mammals, epigenetic alterations begin immediately from conception and continue in utero and postnatally in response to experiences with maternal hormones and behavior. As the infant interacts with the environment, mother, and others over the course of development, specific genes are supported (turned on) while other genes are down-regulated. Thus, we see that the environment plays a particularly important role in shaping the child, all the way down to his/her genetic expression.

For example, decades of studies with animals (for example, rats) demonstrate that variation in the amount of touch (licking and grooming) during a sensitive period in infancy is a significant predictor of stress reactivity in adulthood. Animals that receive low levels of grooming from their mothers have reduced expression of glucocorticoid receptors, impairing feedback on the hypothalamic–pituitary–adrenal axis, a component of the stress response. Specifically, rat pups with less affectionate mothers in the first ten days of life have a reduced number of receptors that control the negative feedback loop of stress (for a human infant the equivalent of the first ten days in a rat pup’s life is the first six months of life). Consequently, these animals exhibit higher stress reactivity and anxiety when faced with unfamiliar stimuli. Further, analysis of hippocampal mRNA levels of the gene that codes for these receptors demonstrates that the altered gene expression persists into adulthood, much like many other epigenetic modifications that occur during sensitive periods in infancy. Multiple neurobiological pathways are modified by toxically stressful early experience, including the serotonin and oxytocinergic systems whose malfunction predisposes one to aggressive behavior. Moreover, genetic modifications can carry over into subsequent generations, transmitted transgenerationally from parent to offspring.

Shore's investigation of affective neurobiological development led him to understand that human nature is deeply shaped by early experience. Whether an individual grows well the various self-regulatory systems that are conducive to health and social well-being depends on early experience with mothers and others. Human development and personality are shaped not only by epigenetics but general plasticity of developing systems, which humans display much more than their chimpanzee cousins. But what specific kinds of experiences are needed by human children for self-regulatory and even nonviolent development? To address this question, we must examine several inheritances beyond genes. We discuss three extra-genetic inheritances: culture, immaturity, and developmental course and the developmental system for raising the young.

Culture: Culture is one of humanity's extra-genetic inheritances. If we examine the type of community in which humanity spent 95 to 99 percent of its existence, mobile small-band gatherer-hunter societies (SBGH), we note that they are largely unaggressive. As such, studying these communities is extremely helpful when examining differences in extra-genetic inheritance and its relationship to peaceful, nonaggressive behavior. Ethnographic studies investigating SBGH communities demonstrate that these communities contain common social characteristics across the world, regardless of region. These characteristics consist of both commonalities in behavior as well as prosocial dispositions.

Regarding behaviors, SBGH societies are nomadic foragers, maintain few possessions, and function as egalitarian, immediate-return societies (unlike those who cultivate plants, domesticate animals, and accumulate resources—factors that can lead to inequality and war). Although materialistically poor, SBHG are socially rich, demonstrating high sociality with inclusive, humble, and egalitarian mindsets. Most of their time is spent engaging with other community members in pleasurable social interactions and leisure activities. In addition, noncoercive relationships, generosity, and sharing are expected.

Last, these communities demonstrate two ecological systems that enable them to live peacefully and sustainably with each other and the world around them. These two systems are: the nest for their young (i.e., their approach toward rearing children) and the relational disposition with which they embrace their ecological surroundings. Our focus here is on exploring the value of the nest, the ecological system dedicated to the young (elsewhere the second author reviews the second system, the way SBGH societies embrace their ecological surroundings).

Immaturity and plasticity: A second factor vital to understanding aggression is human immaturity, plasticity, and lengthy maturation.

Humans are vastly immature at birth. Human infants look like fetuses until 18 months of age. Compared to other hominids, humans possess the longest maturational schedule, taking around 20 years to fully mature physiologically and even longer for the brain neurologically. Early experience during sensitive periods influences all neurobiological systems. In response to these needs, humans evolved a developmental system or nest to meet the needs of their needy offspring.

Evolved nest: A third extra-genetic inheritance is represented by the developmental system that SBGH societies practice when caring for their young, the evolved nest or Evolved Developmental Niche (EDN). The EDN represents a set of expected experiences under which human neurobiological systems evolved, a system consistent with Bowlby's "environment of evolutionary adaptedness." The EDN is provisioned by the entire community—not solely by mothers—providing experiences that are fundamental to optimal normal development. Human infants, similar to other catarrhine mammals but even more so, require abundant, social nurturing. The characteristics that make up the EDN include: First, positive touch, being held or kept near others constantly, which has epigenetic and plasticity effects on such functions as the stress response and the vagus nerve; second, prompt and appropriate responses to fusses, cries, and needs, which are causally related to all sorts of measures of child social and neurobiological well-being; third, frequent breastfeeding on request (2 to 3 times/hour initially) and on average for 2 to 5 years, which properly builds the body and brain such as the immune system; fourth, multiple allomothers; that is, frequent care by responsive individuals other than mothers (fathers and grandmothers, in particular), which facilitates maternal responsiveness and a child's sense of belonging; fifth, multiage self-directed group play in nature, which builds capacities for sociality and controlling aggression; sixth, high social embeddedness, which facilitates health and well-being; seventh, soothing perinatal experiences, which support maternal-child bonding and self-regulation.

These characteristics may seem radical compared to typical Western childcare practices today, particularly in the United States, where undercare of babies (from the standpoint of the evolved nest) is a contemporary norm. But when evaluated from a larger, worldwide, and historical perspective, the EDN summarizes the way in which the majority of human societies and our ancestors care(d) for their young. But how are the components of the EDN directly beneficial to developing nonaggressive behavior?

Maternal responsiveness has been widely studied and shown to encourage positive child outcomes such as secure attachment, and more

prosocial and less aggressive behavior. Recently, the Narvaez lab has been examining the relationship between each component of the EDN, beyond responsiveness, and individual well-being and sociomoral development, controlling for responsiveness. Here are examples of the findings.

In a sample of Chinese mothers and preschool children using standardized measures of morality and validated measures of parenting attitudes and behaviors, maternal reports of EDN-consistent practices were significantly related to standardized measures of their child's self-control (behavior regulation), empathy, and conscience even after controlling for maternal income and education. In a study testing mediation models in the United States and China, maternal touch behavior in both countries significantly mediated the effects of maternal touch attitudes on young child empathy and (inhibitory) self-control. In an examination of a longitudinal dataset of mothers and children from 4 to 36 months, low externalizing behaviors (aggression) were significantly predicted by maternal touch, responsiveness, and maternal social support. Moderate to strong relationships between positive touch and concurrent self-control (behavioral regulation) were found along with positive correlations between low corporal punishment and sociomoral outcomes.

Research from multiple laboratories—including labs from neuroscience, psychology, and epigenetics—provides converging evidence that everyday morality, including aggressive behavior, relies on how well the body/brain work in social situations. Early experience influences those capacities, including well-being, morality, and orientations to aggression. When in early life infants and children receive the care they need and expect, as in the case with SBGH societies, children develop into species-typical adults; individuals who are bio-psychosocially healthy and peaceable. Otherwise, undercare, without later intervention or impactful experience, can lead to stress reactivity and inability to cope with unfamiliar circumstances and people, manifesting in a stiffness of mind and exclusionary tribalism.

It is important to realize that virtually all brain research or psychological studies are done with unnested individuals. These individuals necessarily will lack the full self-regulation and capacities of nested children/adults and so no certain conclusions can be drawn about human nature from such participants.

Pactical implications: Where to go from here? A useful metaphor for investigating human violence has been offered by peace studies researcher Lisa Schirch in which she uses a tree diagram to map the

causes and symptoms of community violence. The roots of the tree represent the deep, causal issues that give rise to violence, represented by the tree trunk. The branches and leaves of the tree represent the symptoms of violence, such as high crime rates, youth gangs, ethnic clashes, or refugees. Schirch continues in her description of the tree analogy by observing that in many parts of the world, specific trees regenerate even after they are cut down (violence returns despite its eradication). This lens for understanding violence illustrates that even when symptoms of violence have been addressed, the root causes continue growing and seeding violence.

The tree analogy becomes particularly useful when thinking about individual aggression through a developmental psychology perspective. Unless the roots of disorders are addressed, symptoms of aggressive behavior will continue to regenerate within a society. Practitioners and researchers might continue to manage the symptoms of aggression, but this attends only to the branches of the problem. Efforts and intervention strategies should include a focus on addressing root causes. One root cause of aggression and violence begins in early life through exposure to adverse experiences and undercare (lack of the evolved nest), experiences that can have lasting effects into adulthood. For example, Prescott has examined caregiving behavior in pre-industrialized societies studied by anthropologists and found that nonviolent societies are by and large predicted by maternal carrying in the first year and lengthier breastfeeding (for at least 30 months).

One way to address a root cause of aggression in adults is to sensitize parents, families, and communities to what infants need in the early, highly formative days, months, and years. Efforts to educate and support parents and alloparents (other caregivers in addition to the mother) should be emphasized, in a manner that is respectful of the family's culture and traditional methods of living. In this way, by supporting families, caregivers, and alloparents, infants and children can receive the care they need from the start of life, care that directly fosters a healthy, well-functioning neurobiology, decreasing the likelihood that children will resort to aggressive and violent behavior in the years that follow.

In summary, we find converging evidence from the fields of genetics, epigenetics, developmental psychology, and anthropology that highlight the importance of the environment in shaping aggression and self-regulatory capacities. Viewing aggression through the understanding that environmental factors hold profound influence over self-regulatory capacities helps us to understand how a child is bio-socially formed. Cultural and community environments in early life shape dispositions (or not) for violence and aggressive behavior. Epigenetic studies provide detailed

evidence for mechanisms by which environmental effects take place. The child's family and caregivers shape the child's stress response, social engagement systems (how they interact with others, their sociality) and sociomoral capacities. The evolved nest supports human flourishing, well-being, and emotional regulation. Returning to providing the evolved nest may be a critical step in efforts to eradicate the roots of violence.

RECOMMENDED READINGS

- Baumrind, D. 1971. "Harmonious Parents and Their Preschool Children." *Developmental Psychology* 4 (1, Pt.1):99–102.
- Champagne, F. A. 2018. "Beyond the Maternal Epigenetic Legacy." *Nature Neuroscience* 1 (6):773–4. doi:10.1038/s41593-018-0157-6.
- Fry, Douglas P. 2006. *The Human Potential for Peace: An Anthropological Challenge to Assumptions about War and Violence*. New York: Oxford University Press.
- Fry, Douglas P., and P. Söderberg. 2013. "Lethal Aggression in Mobile Forager Bands and Implications for the Origins of War." *Science* 341 (6143):270–3.
- Fry, Douglas P., and G. Souillac. 2013. "The Relevance of Nomadic Forager Studies to Moral Foundations Theory: Moral Education and Global Ethics in the Twenty-First Century." *Journal of Moral Education* 42 (3):346–59.
- Gleason, Tracy R., and Darcia Narvaez. 2014. "Childhood Environments and Flourishing," In *Ancestral Landscapes in Human Evolution: Culture, Childrearing, and Social Wellbeing*, edited by Darcia Narvaez, Kristin Valentino, Agustin Fuentes, James J. McKenna, and Peter Gray. New York: Oxford University Press.
- Hrdy, S. 2009. *Mothers and Others: The Evolutionary Origins of Mutual Understanding*. Cambridge, MA: Belknap Press.
- Jablonka, E., and M. J. Lamb. 2005. *Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life*. Cambridge, MA: The MIT Press.
- Meaney, M. J. 2001. "Maternal Care, Gene Expression, and the Transmission of Individual Differences in Stress Reactivity across Generations." *Annual Review of Neuroscience* 24 (1):1161–92. doi:10.1146/annurev.neuro.24.1.1161.
- Meaney, M. 2010. "Epigenetics and the Biological Definition of Gene X Environment Interactions." *Child Development* 81 (1):41–79. doi:10.1111/j.1467-8624.2009.01381.x.
- Montagu, A. (ed.). 1978. *Learning Non-Aggression: The Experience of Non-Literate Societies*. New York: Oxford University Press.
- Narvaez, Darcia. 2013. "The 99%—Development and Socialization within an Evolutionary Context: Growing up to Become "A Good and Useful Human Being," In *War, Peace and Human Nature: The Convergence of Evolutionary and Cultural Views*, edited by Douglas Fry, 643–72. New York: Oxford University Press.
- Narvaez, Darcia. 2014. *Neurobiology and the Development of Human Morality: Evolution, Culture, and Wisdom*. New York: W.W. Norton & Company.
- Narvaez, Darcia. 2017. "Are We losing It? Darwin's Moral Sense and the Importance of Early Experience," In *Routledge Handbook of Evolution and Philosophy*, edited by R. Joyce, 322–32. London: Routledge.
- Narvaez, Darcia. 2018. "Ethogenesis: Evolution, Early Experience and Moral Becoming," In *The Atlas of Moral Psychology*, edited by J. Graham & K. Gray, 451–64. New York: Guilford Press.

- Narvaez, Darcia, Panksepp, J., Schore, A., & Gleason, T. (eds.). 2013. *Evolution, Early Experience and Human Development: From Research to Practice and Policy*. New York: Oxford University Press.
- Porges, S. W. 2011. *The Polyvagal Theory: Neurophysiological Foundations of Emotions, Attachment, Communication, Self-Regulation*. New York: W.W. Norton.
- Schirch, L. 2013. *Conflict Assessment and Peacebuilding Planning*. Boulder, CO: Kumarian Press.
- Schore, A. N. 2003. "Early Relational Trauma, Disorganized Attachment, and the Development of a Predisposition to Violence," In *Healing Trauma: Attachment, Mind, Body, and Brain*, edited by D. Siegel & M. Solomon, 101–67. New York: Norton.
- Schore, A. N. 2017. "All Our Sons: The Developmental Neurobiology and Neuroendocrinology of Boys at Risk." *Infant Mental Health Journal* 38 (1):15–52. doi: [10.1002/imhj.21616](https://doi.org/10.1002/imhj.21616).
- Tremblay, R. E. 2015. "Developmental Origins of Chronic Physical Aggression: An International Perspective on Using Singletons, Twins and Epigenetics." *European Journal of Criminology* 12 (5):551–61. doi:[10.1177/1477370815600617](https://doi.org/10.1177/1477370815600617).
- Trevathan, W. R. 2011. *Human Birth: An Evolutionary Perspective*, 2nd ed. New York: Aldine de Gruyter.

Mary S. Tarsha, M.Ed., is a graduate student in Psychology and Peace Studies at the Kroc Institute for International Peace Studies at the University of Notre Dame. E-mail: mtarsha@nd.edu

Dr. Darcia Narvaez is Professor of psychology and Faculty Fellow at the Kroc Institute for International Peace Studies at the University of Notre Dame.