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Chapter 4. Early Experience and Triune Ethical Orientation

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Child wellbeing in the USA is among the worst in the developed world.[1] The American Academy of Childhood and Adolescent Psychiatry[2] is now describing a "crisis" in children's mental health: one in five children has a diagnosable psychiatric disorder and one in ten suffers from a mental illness severe enough to impair everyday life. A recent report found that all US citizens under age 50, regardless of background, were at a health disadvantage compared to the 16 other nations in the study.[3] These epidemiological data, as well as recent psychiatric and neurobiological research, show signs of being linked to early life experiences and seriously challenge the status quo of modern American childrearing culture.[4]

Recently, attention has been drawn to the importance of early caregiving environments for setting development on a track toward wellbeing.[5] Triune Ethics Metatheory postulates that experiences in early life, when brain circuitry and system thresholds are being established, influence how the brain's functions will guide an individual throughout his or her lifespan.[6] The capacity for agile moral functioning requires emotional self-regulation, physiological wellbeing and sociality. Emotional self-regulation involves many subcomponents such as the development of an affective core[7] as well as the epigenetic controls of anxiety[8] and vagus nerve function,[9] which are critical for sociality. How well underlying physiology works in a particular situation impacts the function of higher order capacities, such as the give and take necessary for healthy, interdependent relationships. Emotional wellbeing is represented not only by secure attachment but by the repeated experience of a supportive emotional climate that encourages positive emotionality, which is linked to greater sensitivity and responsiveness to the needs of others.[10] This brief review suggests that early experience sets trajectories for the development of physiological, emotional and social systems. What should that early experience be like?

A Baseline for Early Experience: The Human Evolved Developmental Niche

Every animal has a niche for its offspring that supports the maturational schedule of the infant and represents a set of inherited extra-genetic features that foster thriving or optimal development in the young.[11] Although we cannot know exactly what our ancestors did, we do have evidence that certain caregiving practices emerged with social mammals over 30 million years ago and that many of these practices are evidence in contemporary hunter-gatherer cultures. These cultures represent the type of society in which the human genus spent 99% of its history.[12] Thus far, scientists have focused primarily on the characteristics during infancy and early childhood, the time period more likely linked to biological evolution and adaptation than to culture. Humans are especially immature at birth, with only 25% of brain size at full-term birth, and, in comparison to other animals, should stay in the womb 9-18 months longer.[13] Thus they require supportive caregiving during a period of rapid growth, immense plasticity and lengthy dependency.

The components of the Evolved Developmental Niche (EDN: a broader set of characteristics than what Konner[14] identified as the "hunter-gatherer childhood model") are a slight variant of the intensive parenting that emerged over 30 million years ago with the social mammals and Old World Monkeys.[15] The EDN for young children includes frequent and lengthy breastfeeding, affectionate touch (and no corporal punishment), responsiveness to the child's needs, lots of play, positive social climate and social embeddedness (all integrated in a context of community care). Each of these characteristics has known effects on physiological, psychological and/or social wellbeing. We briefly summarize evidence here.[16]

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[1] OECD, 2009; UNICEF, 2007
[2] American Academy of Childhood and Adolescent Psychiatry, 2011
[3] National Research Council, 2013
[4] Felitti & Anda, 2005; Felitti et al., 1998; Lanius, Vermetten, & Pain, 2010; Weinfield et al., 2008
[5] Narvaez, 2008, 2014; Narvaez & Gleason, 2013; Gleason & Narvaez, 2014
[6] Narvaez, 2014; Schore, 2003a
[7] Emde et al., 1991
[8] Meaney, 2010
[9] Porges, 2011
[10] Fredrickson & Losada, 2005; Keyes, 2002; Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006
[11] Gottlieb, 1997
[12] Konner, 2010
[13] Trevathan, 2011
[14] Konner, 2005
[15] ibid
[16] For reviews of each characteristic, see Narvaez, Panksepp, Schore & Gleason, 2013.

Maternal responsivity. Among early hominids, young children's needs were met quickly and without resistance.[17] Caregivers responded to their particularly helpless infants[18] and in mutual co-regulation, shaped the infant brain for self-regulation. This established emotional patterns that promote confidence and mental health, including adept stress regulation and good vagal tone, critical for every physiological system and social intimacy.[19] Theoretically, such physiological and psychological support from caregivers might explain the connections between responsive childrearing and heightened moral functioning, such as greater empathy[20] and concern for others,[21] as well as early conscience development in children.[22]

Breastfeeding. Beyond considerable health benefits, breast milk is beneficial for psychological development including higher IQ, as well as visual and cognitive development.[23] Lengths of breastfeeding among foraging groups range from 2-5 years (4 years on average).[24]

Physical closeness and touch. Multiple systems are regulated by the presence of a mammalian mother and quickly become dysregulated when she is physically absent.[25] Early experiences with physical touch also influence brain structures and wiring, fostering secure attachment, which promotes social and cognitive functioning in early childhood and in adulthood as well.[26] Maternal harsh touch has been found to be associated with children's emotional/behavioral problems at age two.[27] In that study, those who received a greater amount of nurturing touch had fewer internalizing problems whereas those who received more harsh touch had more internalizing problems.

Allomothering. Human foragers live in small, socially-intensive and intimate, kin and non-kin groups in which mothers received caregiving assistance from many other adults (e.g., father, grandparents). This assistance provides a social safety net for mother and child, increasing a child's survival and decreasing maternal stress.[28] These and other studies suggest a possible curvilinear relationship (an inverted "u") between number of caregivers and child outcomes, also suggesting that it matters how relationally-close the caregivers are.[29]

Family cohesion. Consistent with extended-family groups of human foragers, Bronfenbrenner's[30] ecological system theory emphasizes the layers of communal support needed for flourishing. Modern family routines and time spent together are important for wellbeing.[31] Family rituals lower anxiety, foster a sense of belonging, relate negatively to children's internalizing behaviors, and correlate positively with child competence outside the family.[32]

Play. Play promotes brain and emotion regulation development.[33] Mammals who are deficient in play have difficulty regulating aggressive urges.[34] Those with little play experience early in life have diminished social capacities and greater conflict interactions with peers.[35]

Soothing perinatal experiences and naturalistic childbirth. During healthy childbirth, hormones that influence bonding are produced, affecting maternal mood and behavior, including response to infant cries.[36] These first hours may set the stage for secure mother-infant attachment.

The importance of the EDN becomes apparent when considered in the context of brain and body development. For example, as Niehoff[37] notes, for optimal functioning later, the young brain "must be protected during development from factors that impair growth, damage neurons, or interfere with the formation of synaptic connections." During the first two years and the introduction of the child's systems to the surrounding environment, the immune system "uses early experiences to elaborate a repertoire of antibodies that will determine future vulnerability to infectious disease" and

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[17] Hewlett & Lamb, 2005
[18] Trevathan, 2011
[19] Fleming, O'Day, & Kraemer, 1999; Porges, 2011; Uvnas-Moberg, 1997; Weaver, Szyf, & Meaney, 2002
[20] Siegel, 1999
[21] Eisenberg, 2000
[22] e.g., Kochanska, 1994, 2002
[23] Caspi et al., 2007; Hart et al., 2006; Lauritzen, Hansen, Jørgensen & Michaelsen, 2001; Michaelsen, Lauritzen, Jørgensen & Mortensen, 2003; Mortensen, Michaelsen, Sanders & Reinisch, 2002; although see Kramer et al., 2001; United States Department of Health and Human Services [USDHHS], 2011
[24] Hewlett & Lamb, 2005; Hrdy, 2009; Konner, 2005
[25] Hofer, 1994
[26] for a review, see Cushing & Kramer, 2005
[27] Weiss, Wilson, Seed, & Paul, 2001
[28] For a review, see Hrdy, 2009.
[29] van Ijzendoorn, Sagi & Lambermon, 1992
[30] Bronfenbrenner, 1970
[31] Steinglass, Bennett, Wolin, & Reiss, 1987
[32] Brody & Flor, 1997; Bronfenbrenner & Evans, 2000; Spagnola & Fiese, 2007; Turner, 1967
[33] Gordon, Kollack-Walker, Akil, & Panksepp, 2002; Panksepp, 2007; van den Berg et al., 1999; Panksepp, Burgdorf, Turner, & Gordon, 2002; van den Berg et al., 1999
[34] Potegal & Einon, 1989
[35] van den Berg et al., 1999
[36] Brinsmead, Smith, Singh, Lewin & Owens, 1985; Swain, Tasgin, Mayes, Feldman, & Leckman, 2008
[37] Niehoff, 1999, p. 274

sets the thresholds for stress response used for a lifetime.[38] The stress response system must be protected from "either collapsing or overheating" due to challenges it is not yet prepared to handle.[39]

Examining the Relation of the Evolved Development Niche to Moral Development

Over the course of the last six years, our team has conducted and published a series of studies to observe the relationships among parenting behaviors and attitudes consistent with early care in the EDN and later well-being. We postulated that because the EDN-consistent childrearing practices co-evolved with the increasing helplessness of the human infant and were practiced for over 99% of human genus existence, they might be the key to providing the ideal supportive environment for optimal health and wellbeing. The practices represented in the EDN are receptive to the child's signals in the sense of attunement to the biological and physiological needs that underlie healthy biopsychosocial development. Moreover, we investigate both maternal attitudes and behaviors with respect to these caregiving practices because they are often linked (Harkness & Super, 2006) and may provide unique influences on child outcomes.

(1) Caregiving practices and early childhood psychosocial development.[40] Our first study used longitudinal (4 to 36 months) data from a study on the transition to parenting by at-risk mothers.[41] We tested our overall hypothesis of EDN-consistent care leading to improved child outcomes. We examined four EDN (or EDN proxy) variables: breastfeeding, positive touch, maternal social support, and maternal responsivity. After controlling for maternal education and income, *breastfeeding* was related to reduced aggressive behavior at 24 months; *maternal responsivity* was linked to more optimal behavior regulation at 18 and 30 months, cooperation at 18 and 30 months, and cognitive development at 30 months as well as reduced aggressive and depressive behavior at 24 months. *Positive touch* was positively related to behavior regulation and social engagement at 18 months, and cognitive development at 30 and 36 months. *Maternal social support* was positively related to cooperation at 18 and 30 months and competence at 24 months, and reduced aggressive behavior at 18 months. This provided general support to our hypothesis that the EDN matters for sociomoral development, which prompted us to take a more detailed look at EDN-consistent care and its impact on child outcomes.

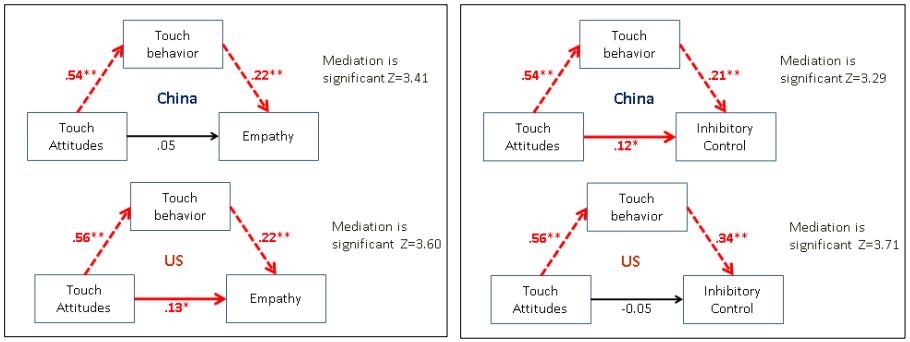
In several subsequent studies, we measured childrearing culture and its relation to child outcomes using the Family Life Attitudes and behavior Measure (FLAM) which we developed and validated. FLAM is a maternal-report battery of measures of maternal EDN-consistent parenting regarding raising young children. FLAM contains components measured both as attitudes and behavior. Behaviors measured include (1) birth experience (type: c-section or not); (2) maternal responsivity; (3) positive touch in preschool and in infancy; (4) negative touch in preschool and in infancy; (5) breastfeeding initiation and length; (6) caregivers and allomothers (closeness, number, kin vs. non-kin); (7) family togetherness; (8) play with mom, adults, other children; and (9) maternal social support (Family Support Scale; Hanley, Tassé, Aman, & Pace, 1998). We examined several sociomoral child outcomes, including *behavior regulation, empathy, and conscience* (Kochanska, DeVet, Goldman, Murray, & Putnam, 1994). These sociomoral outcomes were chosen because (a) they are considered important components of sociomoral development (Kochanska, 2002); (b) research in the US has demonstrated variation in these outcomes as a function of early experience (see reviews in Narvaez, Panksepp et al., 2013), and (c) these outcomes were related to the EDN in our pilot work.

(2) Socio-moral outcomes in American 3-year-olds.[42] We examined the extent to which caregiving practices representative of the EDN are critical, beyond responsivity, for positive sociomoral outcomes in early childhood. We examined frequent positive touch, breastfeeding, multiple adult caregivers, play, and natural childbirth (not cesearean). Mothers also completed standardized measures of their child's behavior regulation (inhibitory control, self-regulation), empathy, and conscience (guilt, concern after wrongdoing). We collected 626 responses from American mothers of three-year-old children through an online platform. To reduce the load on respondents, we grouped items in blocks, and used a spiralling design to pool item blocks into on-line booklets. Each respondent only filled out one booklet, which was a subset of the FLAM. This study helped validate the FLAM, and provided partial support for our first hypothesis. The significant results are displayed in the USA column of Table 4.1 (after controlling for maternal education and income). Child empathy was related to affectionate touch (both behavior and attitudes), mothers' endorsement of responsive parenting, play with mother, and the closeness with caregivers. Child inhibitory control was also related to touch and endorsement of responsive

[38] ibid, p. 274
[39] ibid, p. 275
[40] Narvaez, Gleason, Wang, Brooks, Lefever, Cheng, & Centers for the Prevention of Child Neglect, 2013
[41] Borkowski et.al., 2001-2007
[42] Narvaez, Gleason, Cheng, Lefever & Wang, 2013

parenting. Children's self-regulation was also related to touch and endorsement of responsive parenting as well as the presence of family routines. Child concern after doing something wrong was related to concurrent maternal touch as well as the amount of care received from non-kin (versus care provided by kin). Breastfeeding, childbirth, number of caregivers, and play with others who were not the mothers were not related to the child outcomes.

(3) Socio-moral outcomes in Chinese 3-year-olds.[43] We explored the same relationships of childrearing practices and early child outcomes in a Chinese sample. We collected behavior and attitude data on the same practices from 383 mothers of three-year-olds using a paper-pencil method (rather than online). We controlled for maternal education and income throughout. The significant results are displayed in the China column of Table 4.1. In this sample, every respondent received the full FLAM. We found significant effects for most caregiving practices and attitudes (including breastfeeding length, breastfeeding attitudes, touch behavior, touch attitudes, alloparenting, family cohesion behavior, family cohesion attitudes, play behavior, play attitudes, maternal childbirth attitudes) on child outcomes after controlling for maternal income and education, and most effects remained significant after controlling for maternal responsivity.



Figures 4.1 and 4.2 Mediation model comparisons between China and USA with maternal touch attitudes and behavior on children's outcomes.

As we found significant relationships between all of the child outcomes and both attitudes concerning affectionate touch as well as behaviors across both cultures, we explored the possibility that touch attitudes might mediate the impact of touch behavior on child outcomes. Figures 4.1 shows the models for child empathy and Figure 4.2 shows the models for child inhibitory control. In all four models, touch behavior was a significant mediator of attitudes concerning touch on child empathy and inhibitory control in both the Chinese and American sample. But there were cultural differences: a significant direct effect of attitudes on child empathy remained in the American sample and on inhibitory control for the Chinese sample. We can speculate as to why this might be. Americans culturally have a taboo on tenderness[44] and so attitudes may match this widespread cultural attitude while at the same time maternal behavior does not. In China, inhibitory control is a common cultural concern whereas the behavior of caregivers may not match this attitude, and the Chinese children had significantly more caregivers.

Table 4.1 Significant Relationships between Evolved Development Niche Practices and Child Outcomes after Controlling for Maternal Education and Income in USA and China Samples.

EDN variable	USA	China
Breastfeeding choice	--	--
Breastfeeding length (months)	--	G,C,I
Breastfeeding Attitudes	--	E,C
Touch behavior in infancy	E,I	E,C,S,I
Touch behavior now	E, C, S, I	E,C,S,I
Touch attitudes	E,S,I	E,I
Maternal responsivity attitudes	E,S, I	E,G,C,I
Number of primary kin caregivers	--	G,S,C
Number of primary non-kin caregivers	--	I
Ratio between #kin and #nonkin	C	--
Closeness of primary kin caregivers	E	C
Closeness of primary non-kin caregivers	--	--
Family routines attitudes	S	E,G,C,I
Family routines behavior	S	C,S,I
Play with mom behavior	E	E,C,S,I
Play with other adults behavior	--	E,C,S,I
Play with mom attitudes	--	C,G,S,I
Play with other adults attitudes	--	E,G,S,I
Childbirth attitudes	--	E,G,C,I

Note: E=Empathy; C=Concern after wrongdoing; G=Guilt; I=Inhibitory Control; S=Self-regulation

Comparing across the two studies we found that there were substantial differences in the degree of EDN-consistency between the mothers in the USA and China, and the relationship between EDN components and child outcomes differed in these two populations (see Table 4.2). For example, the amount and quality of play with other adults

[43] Narvaez, Brooks et al., 2011; Narvaez, Wang, Gleason, Cheng, Lefever, & Deng, 2013

[44] Suttie, 1935/1988

significantly related to 3-year-olds' empathy, concern for others, self-regulation, and inhibitory control in the Chinese sample, whereas no such significant relationships were found in the U.S. sample. This finding is likely due to the lack of range/variability in childrearing beliefs and practices in the U.S. sample. Table 4.2 shows the calculation of mean differences between the two samples, with bold indicating significant differences. For the samples we have, on average:

- American children had higher Empathy and Inhibitory Control scores than Chinese children. Chinese children had higher Guilt and Concern scores than American children.

- American mothers had longer breastfeeding length and more positive attitudes toward breastfeeding.

- American families had more family togetherness activities than Chinese families. American mothers had more positive attitudes towards family togetherness than Chinese mothers.

- American children had more play with both mothers and other adults than Chinese children. American mothers had more positive attitudes towards children's play.

- Chinese children had more primary kin caregivers and fewer primary non-kin caregivers than American children. However, American mothers reported that their children were closer to both primary kin and non-kin caregivers than Chinese mothers.

The significant cultural differences are difficult to interpret. One possibility is that EDN-consistent practices, despite their origin in mammalian evolution, do not carry the same meaning cross-culturally. If so, investigation of the different mechanisms by which parenting practices lead to particular child outcomes might illuminate the origins of these differences. Timing of particular behaviors may matter (e.g., touch). Of course, these differences need replication, as the sample from the USA was a convenience sample whose responses likely differ from a more representative sample. Further research needs to be conducted to replicate these cultural differences and investigate whether they or other differences emerge across a wide variety of societies.

Table 4.2. Mean Differences for Child Outcomes and Parenting Practices Between USA and China

Variable (Range)	Mean Difference (US-China)	Standard Error	*t*	*p*
CHILD OUTCOMES				
Empathy (1-7)	0.58	0.05	12.52	<.001
Guilt (1-7)	-0.17	0.05	3.22	0.01
Concern (1-7)	-0.32	0.08	4.04	<.001
Self-Regulation (1-7)	0.04	0.05	0.79	0.43
Inhibitory control (1-7)	0.38	0.06	6.36	<.001
PARENTING VARIABLES				
Breastfeeding choice (0/1)	-0.02	0.02	0.96	0.34
Breastfeeding length (months)	5.04	0.64	7.84	<.001
Breastfeeding attitudes (1 - 5)	0.33	0.05	6.66	<.001
Touch attitudes (1 - 3)	0.08	0.01	5.89	<.001
Maternal responsivity (1 - 6)	0.04	0.04	1.10	0.27
Number of primary kin caregivers	-1.13	0.09	12.25	<.001
Number of primary non-kin caregivers	0.61	0.04	17.14	<.001
Ratio between #kin and #nonkin	-0.60	0.02	26.334	<.001
Closeness of kin caregivers (1 - 4)	0.50	0.06	9.08	<.001
Closeness of non-kin caregivers (1 - 4)	0.24	0.09	2.66	0.01
Family togetherness behavior (0 - 4)	0.43	0.05	8.29	<.001
Family togetherness attitudes (1-5)	0.20	0.06	3.59	<.001
Play with mom behavior (0- 4)	0.31	0.04	7.04	<.001
Play with other adults behavior (0 – 4)	0.17	0.07	2.39	0.02
Play with mom attitudes (1 – 5)	0.43	0.05	7.97	<.001
Play with other adults attitudes (1 - 5)	0.53	0.07	7.71	<.001
Childbirth attitudes (1- 5)	-0.40	0.08	5.19	<.001

Note: Not included are touch behavior scores because they were not comparable due to different scales used in the two samples.

(4) Observed sociomoral and cognitive outcomes in American 3-year-olds.[45] In order to expand the child outcomes assessed and to strengthen the methodology by including observed behavior, we conducted an additional small study. We recruited 55 mothers and their 3 year old children from the local community. Children were observed during challenging tasks requiring inhibitory control and behavioral regulation. Mother-child interactions were also observed and coded for positive affect, warmth and responsiveness.[46]The children also participated in individual assessments of cognitive development (i.e., Peabody Picture Vocabulary Test[47]), social and moral development (e.g., MacArthur Story Stem Battery to measure attachment[48]) and physiological regulation (i.e., cortisol). Mothers completed the FLAM survey. We found that observed maternal warmth strongly predicted children's cognitive development. Children whose mothers scored higher on observed positive affect were able to more quickly recover from the stress of a challenging task (cortisol change: $r = -.39$, $p < .02$). Children whose mothers showed greater warmth/responsivity (combined) were significantly better at identifying emotions such as sadness ($r = .36$, $p < .03$) and had greater inhibitory control (marginal; $r = .29$, $p < .06$). These findings suggest that responsivity has effects on physiological, cognitive, and social development in young children.

Given this initial evidence of the relationship of EDN-consistent caregiving practices and the building blocks for morality in children, we followed up with two additional research studies. First, we examined whether the Evolved Developmental Niche would have long term effects on adult wellbeing and adult Triune ethics orientations. Second, we developed and validated a child measure of triune ethics and tested its relation to nurturing parenting attitudes.

(5) Evolved Developmental Niche-History.[49] Two lines of scholarship inspired us to examine the relation of EDN history to adult morality and wellbeing. First, the research on Adverse Childhood Experiences (ACES) has shown that number of types of adversity experienced during childhood (before age 18), such as sexual abuse or violence in the home, predicts poor mental and physical health outcomes in adulthood.[50] We wondered whether the EDN components might have the opposite effect and be linked to greater mental and physical health.

[45] Narvaez, Wang, Cheng, Gleason, & Lefever, 2011
[46] Landry et al., 1997
[47] Dunn & Dunn, 1997
[48] Bretherton, Oppenheim, Buchsbaum, & Emde, 1990/2003
[49] Narvaez, Wang & Cheng, 2015
[50] Anda et al., 2006; Dong et al., 2004; Felitti et al., 1998; Green et al., 2010

To test the long term effects of the EDN, we recruited an adult sample (N=607; M_{age}= 28.39 years, 51.4% male). Like the ACES studies, we used a retrospective self-report of experiences before age 18, the Evolved Developmental Niche History (EDNH). A variety of items and short measures captured early EDN-consistent experiences: affectionate touch; limited use of corporal punishment; supportive parenting (happy, supportive, needs met; $\alpha = .92$); free play (2 items: outside, inside; $r = .61$); family togetherness (two items: doing things together as a family outside the home and inside the home; $r = .53$); negative home climate (e.g., "dread;" average of 6 items; $\alpha = .88$); and positive home climate (e.g., "serene;" average of 4 items; $\alpha = .85$).

Mothers also completed measures of current: (1) attachment (Close Relationship Questionnaire;[51] single item rating secure attachment); (2) mental health (Inventory of Anxiety and Depression);[52] and (3) sociomoral capacities (Interpersonal Reactivity Index, Davis, 1983; with subscales: empathy, perspective taking, personal distress).

We also used three ethical orientation measures (Narvaez, 2012, 2014; Narvaez, Brooks & Mattan**,** 2011a, 2011b)**:** (1) engagement ethic (as in chapter 3); (2) social opposition/bunker (combative, vigilant, belligerent, fierce; α =.92) and (3) social withdrawal/wallflower (submissive, yielding, timid, unassertive; α =.87). Like the studies in chapter 3, participants rated each set of characteristics (e.g., "*being someone who has these characteristics is an important part of who I am*" or "*My friends think I am like this"*) using a 5-point Likert-type ("*strongly disagree"* to "*strongly agree")*. All reliabilities were good.

The results were consistent with our predictions that early life experiences would be linked to well-being in adulthood. Our first hypothesis was that EDN-consistent childhood experience would be correlated positively with secure attachment (Positive Climate $r = .34$; Low Negative Climate $r = .24$; Play $r = .25$; Family Togetherness $r = .18$; Responsive Childhood $r = .27$; Affectionate Touch $r = .23$; Low Corporal Punishment $r = .14$) and negatively with internalizing mental illbeing (Positive Climate $r = -.21$; Low Negative Climate $r = -.44$; Play $r = -.20$; Family Togetherness $r = -.34$; Responsive Childhood $r = -.21$; Affectionate Touch $r = -.11$; Low Corporal Punishment $r = -.19$). We also predicted that EDNH scores would be related to moral capacities. Three EDNH scores (Play/Affection, Family togetherness/low corporal punishment, supportive childhood) were correlated positively with empathy, perspective taking, and engagement (correlations ranging from .10 to .30, and correlated negatively

[51] Bartholomew & Horowitz, 1991
[52] Watson et al., 2007

with depression, anxiety, personal distress, social opposition, and social withdrawal (correlations ranging from -.06 to -.36). See Table 4.3.

Table 4.3. Correlations among Triune Ethical Orientations, Childhood EDN Variables, Well-Being and Moral Capacities n Adulthood

	Engagement	Protectionist Social Opposition	Protectionist Social Withdrawal
CHILDHOOD EXPERIENCE VARIABLES			
Positive Climate	.34**	-.02	-.29**
Play	.28**	-.17**	-.21**
Family Togetherness	.26**	-.27**	-.29**
Responsive Childhood	.27**	-.13**	-.21**
Affectionate Touch	.19**	-.14**	-.17**
Corporal Punishment	-.22**	.12**	.11**
ADULT OUTCOME VARIABLES			
Secure Attachment	.32**	-.08	-.27**
Anxiety and Depression	-.18**	.43**	.50**
Empathy	.60**	-.32**	-.15**
Perspective Taking	.34**	-.22**	-.11**
Personal Distress	-.04	.19**	.42**

We also conducted several mediation models to test whether the impact of early experiences on later ethical orientation might be mediated by secure attachment and emotional well-being. See Figure 4.3.

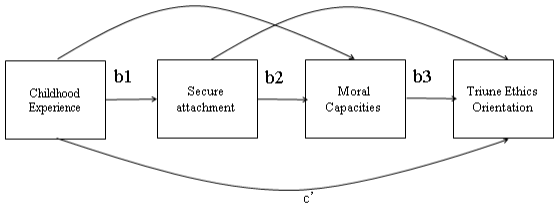


Figure 4.3 Theoretical model for mediation analysis with adult Evolved Developmental Niche History and its relation to attachment, moral capacities and triune ethics orientations.

Significant direct and indirect effects were found with EDN predicting the three ethical orientations tested. The pathway was from EDN-consistent early experiences to attachment, to mental health, to moral capacity, to ethical orientation. *Engagement orientation* had a positive route through secure attachment, better mental health, and perspective taking. *Social Opposition*, an externalizing safety ethical orientation, was predicted through a negative pathway with lack of secure attachment, lower mental health, and low perspective taking. *Social Withdrawal*, an internalizing ethical orientation, was predicted through a negative pathway of lack of secure attachment, lower mental health, and higher personal distress.

These findings suggest that early experience influences morality and wellbeing as predicted. Further research should be conducted with more diverse samples.

(6) Child Triune Ethics.[53] We next examined whether maternal attitudes and behaviors regarding a nurturing parenting environment were related to young children's psychosocial health and sociomoral outcomes. We hypothesized that (1) EDN-consistent parenting attitudes would cohere into components of a nurturing caregiving environment, and (2) Positive attitudes towards EDN-consistent caregiving would positively relate to sociomoral development and negatively relate to psychopathology. We examined the positive associations between a child's sociomoral orientation of engagement and imagination with thriving, empathy, and happiness. We also explored the potential negative associations between a child's sociomoral orientation of self-protection with depression, anxiety, and misbehavior.

Participants were mothers of 3- to 5-year-olds (58.4% boys) who were recruited regionally from the USA. The final sample contained 166 mothers (M_{age} = 33.73). Most were married and college educated with a range of incomes (<$15,000/year to >$100,000/year). Mothers completed the Family Life and Attitude Measure described above. Subscale reliabilities were good.

Child outcomes included the standardized measures of empathy, conscience and behaviour regulation used earlier. They also included psychosocial wellbeing, physiological health and sociomoral development using the Child Triune Ethics Measure. For psychosocial wellbeing, we gathered maternal reports of the child using standard measures of: (a) *Happiness:* original measure (5 items, α = .73; 6-pt. Likert scale; e.g., "Dance spontaneously;"); (b) *Depression:* American Academy of Child and Adolescent Psychiatry (2008) list of childhood depression symptoms (17 items; α = .92; 6-pt. Likert scale; e.g., "How often does your child lack

[53] Gleason, Narvaez, Cheng, Wang, & Brooks, 2016

confidence?"); (c) *Anxiety:* Preschool Anxiety Scale (Spence, Rapee, McDonald, & Ingram, 2001; 29 items; α = .94; 5-pt. Likert scale; e.g., "Is afraid of meeting or talking to unfamiliar people"); (d) *Neuroticism:* Grist & McCord's (2010) preschool personality measure (9 items, α = .82; 5-pt. Likert scale; e.g., "Gets overwhelmed easily by emotions"); and (e) *Misbehavior:* original measure of frequency (6 items; α = .77; 5-pt. Likert scale; e.g., "How often does your child misbehave?").

The *Child Triune Ethics Measure* (*CTEM*) is an adaptation of the Triune Ethics Measure for adults (Gleason et al., in press) that measures different aspects of children's sociomoral orientation, a type of social fittedness (Emde et al., 1991). Parents rated their child's behavior in social situations using a 6-point Likert scale (1 = '*never*' to 6 = '*several times a day*'). After pilot testing, factor analysis revealed seven subscales. Three subscales were associated with the Ethic of Self-Protection: (a) Social opposition (α = .92), (b) Social distrust (α = .61), and (c) Social withdrawal (α = .91); three were associated with the Ethic of Engagement: (d) Social enjoyment (α = .93), (e) Social attunement (α = .88), and (f) Social consideration (α = .84); and one was associated with the Ethic of Imagination: (g) Social imagination (α = .81). Table 4.4 presents more detail regarding the three ethics and their associated factors.

Our first hypothesis, that EDN-consistent parenting attitudes would cohere into components of a nurturing caregiving environment, was supported. For example, we found high correlations among a set of EDN-consistent attitudes, including responsivity, physical touch, alloparenting, and play (*r*s = .50 to .86, *p*s < .001). Confirmatory factor analysis also revealed that a measurement model including these four attitudes formed a latent construct we labelled *nurturing parenting.* The good fit of this model (χ^2 = 3.39, p = .50) suggested that mothers who endorsed sensitive and responsive views of care appeared to value the contributions of play with peers and nurturing interactions with nonparental adults to their children's lives. Moreover, these findings supported the inclusion of maternal attitudes towards responsivity, positive touch, play, and nonparental caregiving as components of an influential early caregiving environment, providing evidence for the usefulness of such a comprehensive model.

Our second hypothesis, that positive attitudes towards EDN-consistent caregiving would positively relate to sociomoral development and negatively relate to psychopathology, was also supported. Two CFA models, labelled socio-moral flourishing (child happiness, social consideration, social atunement, social imagination, and empathy) and ill-being (social withdrawal, depression, anxiety and thriving [negatively]) were created and fit well (χ^2 = 7.09, p = .131 and χ^2 = 0.28, p = .60 respectively). A saturated antisocial behaviors latent factor used social opposition, social distrust, and misbehavior. In contrast to our pilot work, social enjoyment did not load on any construct. Structural equation models with nurturing parenting predicting each of the three dependent latent constructs individually, controlling for income, demonstrated good fit (with non-significant chi-squares, CFIs above .98, and RMSEAs smaller than .03). Nurturing parenting attitudes were significantly related to all three dependent latent constructs: positively for child socio-moral flourishing, and negatively for ill-being and antisocial behaviors. Overall, the significant relations between nurturing parenting and child outcomes emphasize its potential usefulness as a predictor of healthy sociomoral development. Elements of nurturing parenting may well contribute to child outcomes in unique and complementary ways, akin to the disparate but related roles of various vitamins in healthy physiological development.

Table 4.4. *Child Triune Ethics Measure Items Used*

SELF-PROTECTION

Social Opposition: Combative, Easily upset, Hostile, Argumentative, Uncooperative, Aggressive, Fights easily, Angry, Threatening, Hot-tempered

Social Withdrawal: Timid, Withdrawing, Anxious, Cowardly, Fearful, Nervous, Scared, Hesitant, Wallflower, Freezes

ENGAGEMENT

Social Enjoyment: Excited, Laughs, Happy, Pleasant, Cheerful, Loving, Affectionate, Playful, Cheerfully, Interactive

Social Attunement: Forgiving, Gentle, Kind hearted, Cuddly, Sympathetic, Empathic, Supportive, Comforting

Social Consideration: Thoughtful, Attentive, Considerate of others, Moral, Honorable, Respectful

IMAGINATION

Social Imagination: Creative, Thinks of new ideas, Artistic, Enterprising, Original, Innovative

General Discussion

We can draw two firm conclusions from this work. First, we found consistent evidence that parental responsiveness is not sufficient for optimizing development. Although included as one of the components of the Evolved Developmental Niche, responsivity was only one component related to children's positive development, as each study demonstrated. In fact, in each study with children, we controlled for maternal responsivity, as well as demographics, and still found significant influence of EDN components. Second, our broad predictions that EDN components would influence wellbeing, moral capacities and ethical orientations in children and adults were confirmed. More EDN-consistent care was related to positive outcomes and less EDN-consistent care to negative outcomes. However, beyond these general statements, every study tells a different story regarding which parenting outcomes were most critical for wellbeing and moral development. There were inconsistencies across cultures making some of the findings more suggestive than conclusive.

Several future directions come to mind. It is too early to conclusively link particular parenting practices with specific child outcomes, at least in terms of how they were measured here. These results suggest that we may need to stop casting such a wide net and start looking at parenting behaviors in greater detail. For example in an effort to make better predictions, it would be helpful to examine the relation of an individual EDN behavior (e.g., touch or play) to a specific child behavior or characteristic. Second, it would be ideal to frequently measure ongoing effects, such as week by week or month by month, to observe the interaction of experiences on outcomes during the course of maturation and dynamic development. Parenting attitudes and behaviors consistent with the EDN theoretically exert their influence through physiological mechanisms. Understanding how nurturing parenting shapes sociomoral orientation will ultimately depend upon research focused on the effects of social experience on neurobiology and plasticity. Such data may be difficult (or unethical) to collect experimentally because each individual develops at her own pace (including variability in subsystem development) and experiential effects vary based on timing, intensity and duration in interaction with individual differences. Nevertheless, longitudinal work is needed to parse the varied contributions of each aspect of EDN-consistent care, particularly with respect to moral development and orientation. Finally, it would increase the methodological strength of the research to measure all constructs with a combination of observation and report in order to capture a more complete picture of the types of experiences children actually receive.

Conclusion

Evidence is accumulating for the relation of early experience to moral outcomes as delineated by Triune Ethics Meta-theory. The results of these studies suggest that researchers should pay more attention to the effects of early experience on health and moral outcomes not only for childhood but also adulthood. Practically, in order to encourage more future adults who approach the world with an engagement ethic – one in which they are able to consider the perspectives of others and not only what is good for them as an individual, and are willing to work interdependently and flexibly with others to solve problems – we should support families so that they are able to provide a developmentally appropriate environment for their children, encourage secure attachment to others and compose the building blocks of moral development.