

## NURTURING PARENTING ATTITUDES

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Wellbeing and Sociomoral Development in Preschoolers:  
The Role of Maternal Parenting Attitudes Consistent with  
the Evolved Developmental Niche

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Young children's flourishing involves multiple components, from physical and mental wellbeing to sociomoral development. Although the study of moral development has been dominated by cognitive theories that emphasize developmental changes in judgment (Bloom, 2013; Thompson, 2012), social and emotional health make significant contributions to this process (Kochanska, Barry, Aksan, Boldt, 2008). Social and emotional health are highly influenced by early experience. Caregiving practices (the developmental system or "developmental manifold," Gottlieb, 2002) likely shape the physiological and psychological systems that contribute to psychosocial behavior—including moral behavior. Compromised early caregiving results in deficient physical and psychological systems (Carter et al., 2005; Lanius, Vermetten, & Pain, 2010) and a defensive, protective orientation toward social interaction (Sachser, Hennessy, & Kaiser, 2011). Consequently, variation in early caregiving experience may correspond with variation in sociomoral capacities, such as empathy and a positive orientation towards socializing with others. In other words, the moral sense develops from a child's experience which influences how the child understands the self as belonging and contributing to a larger community. Understanding the caregiving context that facilitates physiological and psychological flourishing might help illuminate the development of moral character. The focus of this study is the caregiving context which includes not only behavior but attitudes of the caregivers.

Parenting attitudes have been linked to both parents' behaviors and child outcomes (Harkness & Super, 2006; Sigel & McGillicuddy-DeLisi, 2002, although see Holden & Buck, 2002). For example, attitudes about responsivity influence maternal warmth and responsiveness to infant crying.

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If a mother believes that constantly responding to her infant's cries spoils the infant, she will be less responsive to her infant's signals so as not to spoil the child (Bell & Ainsworth, 1972). Similarly, a mother who holds positive attitudes toward parenting in general may be more likely to respond with empathic reactions upon her infant's distress, thus prompting her to demonstrate more sensitive and responsive behaviors (Kiang, Moreno, & Robinson, 2004). In turn, responsivity has been associated with positive developmental outcomes in children, such as secure attachment to a caregiver (DeWolff & van IJzendoorn, 1997). Still, the relations between parenting attitudes, behaviors, and child outcomes are complex (Parke & Buriel, 2006), and studies examining attitudes toward multiple parenting practices at once might be especially useful. Accordingly, we wondered whether we could define a specific set of parenting attitudes that could be conceptualized as part of a cohesive environment of nurturing parenting. If we could identify the components of this environment, we further sought to determine whether that environment would promote flourishing—that is, whether it would be positively associated with wellbeing and sociomoral outcomes while being negatively related to mental health problems and antisocial behavior in early childhood.

### Nurturing Parenting

To characterize a nurturing parenting environment, we adopted caregiving practices identified by anthropologists as characteristics of the evolved developmental niche (EDN) for social mammals, features intensified through human evolution (Hewlett & Lamb, 2005; Konner, 2005; Narvaez, Panksepp, Schore & Gleason, 2013). Attitudes supporting these evolved caregiving behaviors associated with human evolution may be particularly vital for supporting wellbeing because they form part of the "developmental manifold" or system that evolved with the maturational needs of the child (Gottlieb, 1991). The factors we chose, responsivity, physical closeness/touch, play, and alloparenting (i.e., nonparental caregiving), fulfill two important criteria. First, each has been described as an important contributor to socioemotional development (e.g., DeWolff & van IJzendoorn, 1997; Harlow, 1958; Hrdy, 2009; Lindsey & Colwell, 2003), and second, these factors encompass multiple aspects of the early social context, not only interactions between children and adults but among children themselves, as well as relationships both within and outside the family.<sup>1</sup>

### **Responsivity**

Warm, responsive caregiving, although variably defined (see Richman, Miller, & LeVine, 1992), has multiple positive effects on child outcomes. In fact, caregiver responsiveness is more predictive of subsequent child adjustment and mental health than infant attachment per se (NICHD Early Child Care Research Network, 2004). Responsive parenting helps children learn to self-regulate arousal systems (Haley & Stansbury, 2003) and is linked to heightened moral functioning, including early conscience development (Kochanska, 2002).

### **Physical Closeness/Touch**

The effect of physical affection on optimal functioning is well-established; for most mammalian offspring, humans included, losing contact with a caregiver is distressing (e.g., Harlow, 1958). For example, even a few minutes of separation in rats causes lifelong changes in stress response (Levine, 2005) and stress reactivity (e.g., Porges, 2011). Even in species less social than humans, physical separation activates painful emotions (Sánchez, Ladd, & Plotsky, 2001) and influences the dynamics of various emotion regulating hormones and neuropeptides (Circulli et al., 2009). In contrast, gentle massage facilitates healthy physiological development in human preterm infants (Field, 2001). These connections suggest that positive parental attitudes towards physical closeness in infancy as well as later in childhood might promote sociomoral development and perhaps diminish a child's susceptibility to psychopathology.

### **Play**

Mammalian childhoods, especially among primates, are characterized by playful interactions. Play promotes emotion regulation development (Panksepp, Burgdorf, Turner, & Gordon, 2003; van den Berg et al., 1999) and is a context in which young mammals, including children, learn to regulate aggression (Lindsey & Colwell, 2003; Potegal & Einon, 1989). Those with little play experience early in life have altered social, sexual, and conflict interactions with peers (van den Berg et al., 1999). As the regulation promoted by play has a pivotal role in moral development (Kochanska, 1994), positive maternal attitudes toward play with peers might be important for healthy sociomoral development and management of aggression.

### **Alloparents**

For most of human history and prehistory, mothers have had extensive support caring for their young from other adults, often referred to as alloparents. Anthropologists document such “cooperative breeding” in contemporary studies of hunter-gatherers (see review by Hrdy, 2009). Although many modern human mothers have the resources to provide for their children's basic needs, the social support benefits of alloparenting extend beyond physical health to children's social and behavioral outcomes. Mothers' perceptions of social support have been positively related to children's social skills and negatively to behavior problems (e.g., Achenbach, 1974; Koverola et al., 2005). However, to our knowledge, no research has investigated mothers' attitudes toward alloparents—priorities and values with respect to nonparental caregivers—in relation to child sociomoral outcomes. Whether a parent prioritizes children's safety alone or socioemotional health in addition to safety in relationships with alloparents could influence the nature of the nurturing environment experienced beyond the immediate family.

### **Child Outcomes: Morality, Thriving and Ill-being**

We were interested in child flourishing, which we defined as socioemotional thriving, positive sociomoral outcomes and an absence of mental health problems and antisocial behavior. Flourishing, by our definition, suggests the emergence of a prosocial (and thus moral) orientation toward others as well as healthy physiological and psychological functioning (Narvaez & Gleason, 2013).

### **Thriving, Empathy, and Happiness**

We examined children's thriving (defined as the ability to regulate and cope with stress), and expected them to have close ties to nurturing parenting. For example, self-regulation (e.g., vagal tone) and stress reactivity are shaped by maternal responsivity (Porges, 2011; Spangler, Schieche, Ilg, Maier, & Ackerman, 1994), and these physiological systems influence how an organism responds to the social environment over the lifespan.

### **Sociomoral Orientation**

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Like self-regulation, empathy is a fundamental emotion of social and moral functioning, and it emerges as the basic components of self-regulation are developing (Eisenberg, 2000). Mothers who demonstrate empathy tend to have children who do the same, even in toddlerhood (Zahn-Waxler & Radke-Yarrow, 1990). The mother-child relationship fosters both empathy and self-regulation through a mutually-responsive orientation (Kochanska, 2002), and in turn, empathy is linked to moral behaviors such as citizenship, fairness, gratitude, and kindness (Peterson & Seligman, 2004). As for happiness, mother-child positive affect has been associated with attachment security and with the development of conscience (Laible & Thompson, 2000), suggesting that nurturing parenting and such affect might be related.

Our investigation of child sociomoral outcomes was based in Triune Ethics Theory (TET; Narvaez, 2008, 2014, forthcoming). TET suggests that three ethical mindsets—self-protection, engagement, and imagination—underlie human moral behavior. The Ethic of Self-Protection emerges under a sense of threat and is focused on self-preservation. The Ethic of Engagement focuses on relational presence and social resonance. The Ethic of Imagination involves executive functions that enable self-discipline, reasoning and imagining possibilities in light of social relations. These different ethics represent sociomoral orientations activated at different times; for example, situations that activate self-protectionism might elicit withdrawal from or opposition to others, whereas engagement and imagination might evoke pursuit of social interaction or play and efforts to consider others' needs. Our examination of sociomoral outcomes was based on these constructs and we expected associations between all of them and attitudes toward nurturing parenting practices.

### Ill-being and Misbehavior

Most emotional disorders are characterized by negative affectivity, including sensitivity to negative stimuli, greater negative emotion, vigilance, physiological arousal, and emotional distress (Kagan, Reznick, & Snidman, 1987; Rao & Chen, 2009; Watson & Clark, 1984). For instance, depression is manifested in young children through low positive affectivity and high negative affectivity, as well as somatic complaints, behavioral inhibition, and behavior problems (Carlson & Kashani, 1988; Sorensen, Nissen, Mors, & Thomsen, 2005). Depression in children is predicted partly by poor family functioning, including rejection by parents (Birmaher et al., 1996; Bowlby,

1980; Rapee, 1997), and it is often comorbid with anxiety (Ramklint & Ekselius, 2003; Zisook, Lesser, Stewart, et al., 2007). Thus, we predicted that negative attitudes toward nurturing parenting practices would be associated with ill-being, specifically, depression and anxiety. Similarly, the associations between conscience and nurturing parenting suggested that negative attitudes toward our chosen parenting practices might be associated with social misbehavior, in that it demonstrates a lack of social self-regulation and sensitivity that are otherwise fostered by responsive parenting (Kochanska, 2002).

### This Study

Although the caregiving practices we examined have received attention in isolation, consideration of them as components of a holistic, nurturing environment is a new approach. Our first goal was thus to examine whether these components were significantly associated so as to constitute a nurturing parenting environment, and if so, our second goal was to test whether attitudes towards such an environment would relate to reports of psychosocial health and sociomoral outcomes in early childhood. We hypothesized that maternal endorsement of the nurturing environment would be positively associated with a child's thriving, happiness, empathy, sociomoral orientations of engagement and imagination, and negatively associated with a child's depression, anxiety, misbehavior, and sociomoral orientation of self-protection. Participants included mothers of 3- to 5-year-olds ( $N = 156$ ; 59% boys) recruited in the United States through parenting blogs, flyers, a parenting organization, and parenting listservs in the Midwest and Northeast to fill out an online survey in exchange for a gift card. Participants ranged in age from 18 to 48 years ( $M = 33.82$ ,  $SD = 5.10$ ). Most mothers (94.8%) were married and all had at least some college education. Yearly household income varied substantially. And the sample was 82.1% Caucasian Euro-American, with family size ranging from 2-9 people ( $M = 4.42$ ,  $SD = 1.14$ ), including an average of 2.10 adults ( $SD = .54$ ) and 2.32 children ( $SD = .94$ ).

To measure mothers' attitudes, we used portions of the new Family Life and Attitude Measure (FLAM; Narvaez, Wang et al., 2013), a maternal report survey of behavior and attitudes related to early care experience for a target child, behaviors and attitudes that conform to the purported characteristics of the evolved developmental niche (EDN, Narvaez, Wang et

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al., 2013), so higher scores reflect higher EDN-consistency (i.e., a nurturing parenting environment). All items used a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), negative items were reverse scored, and composite scores were obtained by averaging the items of each measure. See Table 1 for details on all measures. Attitudes were collected regarding four caregiving topics in relation to the ages (infancy and/or preschool) in which they were deemed most critical according to existing literature.

- *Responsivity* assessed assumptions about the wisdom and importance of responding sensitively to infants' needs (e.g., "Parents who respond quickly to a baby spoil the baby;" reverse scored).
- Attitudes toward *physical closeness/touch* were assessed in relation to infancy and currently and asked to what extent behaviors such as "Holding the child/baby close at least 10-15 minutes per day" were deemed characteristic parenting.
- *Attitudes toward play* were measured with items such as, "Children need to run around and play with friends."
- *Attitudes toward alloparents* focused on parents' nonparental care priorities (e.g., "I want my child to have a caregiver who loves my child," and "It doesn't matter who takes care of my child while I work as long as they don't hurt my child" [reverse scored]).

Child outcomes were also measured via maternal report, but using a combination of standardized and new measures of children's functioning. We developed the Child Triune Ethics Measure (CTEM), an adaptation of the Triune Ethics Measure for adults (Narvaez, forthcoming), to measure different aspects of children's sociomoral orientation. The measure asks parents to rate their child's behavior in social situations using a 6-point Likert scale (1 = never to 6 = several times a day) and consists of seven subscales (see Appendix for subscale items). Three are associated with the Ethic of Self-Protection: (a) *Social opposition*, (b) *Social distrust*, and (c) *Social withdrawal*; three are associated with the Ethic of Engagement: (d) *Social enjoyment*, (e) *Social attunement*, and (f) *Social consideration*; and one is associated with the Ethic of Imagination: (g) *Social imagination*. High scores on the Ethic of Self-Protectionism emphasize the self over others and are associated with low sociomoral functioning, whereas high scores on the other two Ethics are associated with positive sociomoral orientation (Narvaez, forthcoming). *Thriving* was evaluated using a scale adapted for

parents from the self-report Warwick-Edinburgh Well-Being Scale (Tennant et al., 2007) (e.g., "My child deals well with problems") and scored using a 6-point Likert scale (1 = never to 6 = always). *Empathy* was measured with the empathy subscale of My Child (Kochanska, 1994; e.g., "Will try to comfort or reassure another in distress") using a 7-point Likert scale (1 = extremely untrue of your child to 7 = extremely true of your child). Five items measured the frequency with which the child demonstrated *happiness* (e.g., "Dances spontaneously") on a 6-point Likert scale (1 = never to 6 = more than once a day). We developed a *depression* measure based on the American Academy of Child and Adolescent Psychiatry (2008) list of childhood depression symptoms. It measured frequency of depression-related behaviors (e.g., "How often does your child lack confidence?") using a 6-point Likert scale (1 = never to 6 = several times a day). *Anxiety* was measured using the Preschool Anxiety Scale (Spence, Rapee, McDonald, & Ingram, 2001; e.g., "Is afraid of meeting or talking to unfamiliar people") rated on a 5-point Likert scale (0 = not true at all to 4 = very often true or Not applicable). Lastly, we measured frequency of *misbehavior* (e.g., "How often does your child misbehave?") using a 4-point Likert scale (once a week or less, several times a week, every day, several times a day), except for one question that assessed recent misbehavior (i.e., "How often did your child misbehave in the last week?" not at all, once, 2-3 times, 4-8 times, 8-12 times, over a dozen times).

Table 1 provides descriptive statistics for maternal attitudes and child outcomes, and demonstrates that scores on these scales had good range and variability. Analyses included correlations (Table 2) and a series of mediation models. Using the maternal attitude and child outcome variables, we constructed a series of models (measurement and structural).<sup>2</sup> All factor loadings were constrained/fixed from the measurement models. Only the paths from income to nurturing parenting and outcomes and from nurturing parenting to the outcomes were freely estimated.

### The Nurturing Environment

The first goal of this study was to establish whether maternal attitudes toward responsivity, physical closeness and touch, play, and alloparenting could be conceptualized as a cohesive nurturing environment. This idea was supported by high correlations among all variables,  $r_s = .50$  to  $.86$ ,  $ps < .001$ . Consequently, we conducted confirmatory factor analyses (CFA) to evaluate the measurement model with attitudes on responsivity,

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touch (in infancy and currently), play, and alloparents, forming a latent construct *nurturing parenting*. The model fit well,  $\chi^2 = 3.39, p = .495$ ,<sup>3</sup> suggesting that mothers who endorsed sensitive and responsive views of care on their own part appeared to value the contributions of play with peers and nurturing interactions with nonparental adults to their children's lives. This view of childrearing raises two issues with respect to understanding the psychological importance of maternal attitudes to child sociomoral flourishing: (a) emphasis on membership in a social environment and (b) acknowledgement of the differential importance of adults and peers in development.

The idea of a coherent nurturing environment presented here suggests an emphasis among some mothers on a holistic perspective of the child as a member of a social context beyond just the mother-child relationship. Such a perspective might have roots as far back as human prehistory. Although we cannot know for certain the living and child-rearing conditions characteristic of humans over the course of evolution, humans are social mammals characterized by high social embeddedness (Hrdy, 2009). Anthropologists underscore the high likelihood that humans lived in multi-generational groups, characterized by the kinds of variables we have examined here: sensitive and responsive care, play, and cooperative childrearing (Hewlett & Lamb, 2005; Hrdy, 2009; Konner, 2005). If indeed such contexts facilitated individual survival and reproduction in early humans, they might also have facilitated successful social functioning.

The fact that positive attitudes toward sensitive care correlated highly with enthusiasm for play with peers and prioritizing sensitivity in alloparents suggests that nurturing attitudes acknowledge the differential role played by adults and peers in sociomoral development (Walker, Hennig, & Krettenauer, 2000). Disparate lines of developmental research have successfully connected early parenting (e.g., Kochanska, 2002) to the roots of conscience, empathy, and moral behavior as well as highlighting the ways in which moral behavior, mutual socialization, and a sociomoral orientation can be supported or undermined by the peer group (e.g., Kruger, 1992; Piaget, 1932). The correspondence between mothers' attitudes toward responsive care by themselves and other caregivers and their views of the importance of play with peers suggest that these mothers are aware on some level of the different but equally important lessons learned in these contexts for flourishing and sociomoral development.

## Nurturing Parenting and Child Outcomes

Our second goal was to examine associations between attitudes toward the nurturing environment and maternal reports of child flourishing. Consequently, as a first step, two CFA models were created with theoretically-related child outcomes loading on each latent construct. Both models fit well: (a) child happiness, social consideration, social attunement, social imagination, and empathy loaded on *socio-moral flourishing*,  $\chi^2 = 7.09, p = .131$ ; and (b) social withdrawal, depression, anxiety and thriving (negatively) loaded on *ill-being*,  $\chi^2 = 0.28, p = .597$ .<sup>4</sup> We also formed a saturated *antisocial behaviors* latent factor using social opposition, social distrust, and misbehavior. Social enjoyment did not load on any construct and was thus left out of the analyses.

We ran structural equation models with nurturing parenting predicting each of the three dependent latent constructs individually, controlling for income (education was not controlled as the sample was homogeneous; see Table 2 for correlations). The models fit well, with nonsignificant chi-squares, CFIs above .98, and RMSEAs smaller than .03 (see Figures 1-3 for all coefficients, standard errors, test statistics, and fit indices). As predicted, nurturing parenting attitudes related to all three dependent latent constructs significantly: positively for child socio-moral flourishing, and negatively for ill-being and antisocial behaviors. In addition, income correlated significantly with the latent construct of nurturing parenting (see Figures 1-3), indicating that in families with higher income, mothers had more positive attitudes towards nurturing parenting.

One interpretation of the positive associations between nurturing parenting and sociomoral flourishing and the negative connections with ill-being and misbehavior comes from Hoffman's (1970) moral socialization theory. This theory emphasizes the importance of parental warmth as a context for helping children internalize moral values and avoid misbehavior. If the nurturing parenting variable could be interpreted as encompassing the (attitudinal) affective climate of the mother-child relationship, then our findings should come as no surprise, given that parental warmth is often associated with moral growth and sophisticated moral reasoning (Powers, 1988; Walker & Taylor, 1991). However, the inclusion of attitudes toward play into the concept of the nurturing environment suggests that sensitive and responsive care (i.e., warmth) alone is incomplete as an explanation for the relations to child outcomes. Instead, a wider set of attitudes may be part of—

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and perhaps even important for—an affective environment that fosters sociomoral flourishing and lowers rates of mental health problems and misbehavior.

To the extent that the attitudes we studied are related to maternal behavior, we might expect mothers who endorse them to encourage social interaction between their children and the wider community, including peers. Research on parenting attitudes has not always found a link between attitudes and behavior, but the convergence of the four different attitudes in this study might be interpreted as evidence for interattitude consistency—a factor that raises the predictive validity of attitudes for behavior (Holden & Buck, 2002). On the other hand, even if this coherent set of attitudes is related to myriad actual parenting practices, the emotional climate they create might be more critical to sociomoral flourishing than behaviors per se. For example, certain parenting practices (e.g., spanking) are correlated with different child outcomes as a function of parents' reasoning and attitudes with respect to the practices themselves (McLoyd, Kaplan, Hardaway, & Wood, 2007). Children might interpret a wide variety of parenting behaviors similarly if they are experienced as reflective of parents' care and concern (Chao, 1994; Dearing, 2004). Consequently, while the connections between parenting attitudes and behaviors is still worthy of study in the realm of sociomoral functioning, knowing that nurturing attitudes relate to positive outcomes is an important first step in understanding how to support healthy, if not flourishing, sociomoral development.

### Future Directions and Conclusions

The work discussed here confirmed the relation of nurturing attitudes to child psychosocial development. Attitudes toward responsiveness, touch, play, and alloparents may have significant effects on the development of capacities important for successful sociomoral functioning in groups. By first looking at sociomoral orientation, we were able to identify aspects of a child's reported behavior toward others that provided indications of flourishing (e.g., consideration, attunement) or lack thereof (e.g., distrust, withdrawal). We also examined indicators of regulation, whether successful (e.g., well-being) or unsuccessful (e.g., anxiety, depression), given the relation between self-regulation and positive behavior toward others (Kochanska, 1994).

Taken together, the relations that emerged highlight the importance of the parenting climate for child outcomes. Many parenting interventions focus on changing behavior, and an interesting question is how such behavioral changes relate (or not) to parenting attitudes and/or the emotional climate of the parent-child relationship. Effective interventions may well owe some piece of their success to alterations in attitudes and to changes in how the parents mentally and emotionally frame their interactions with their children. This idea might be worth pursuing in future intervention work, especially in tandem with current practices.

Although the work presented here suggests connections between nurturing attitudes and social behavior, they must be considered in light of a few weaknesses. First, the homogeneity of the sample begs the question of whether these relationships would emerge particularly for single parent families and for mothers with a wider range of education. Second, the use of maternal report for both the measurement of attitudes as well as reports of children's behavior raised the likelihood that correlations would emerge. Obviously, replication with heterogeneous samples would enhance the strength of these findings, as would measurement of the child outcomes through observation rather than maternal report.

The results suggest that attention could be directed toward examining the mechanisms by which parenting attitudes and behaviors exert their effects on child outcomes. For example, nurturing parenting might operate on child outcomes via regulatory functions. An affective climate (and its associated behaviors) that emphasizes responsiveness, touch, opportunities for play, and alloparenting might directly and indirectly facilitate physiological and psychological development that lowers withdrawal and anxiety, attenuates defensiveness and hostility, and facilitates early components of morality such as empathy, a positive social orientation, and social attunement. Indeed, a host of research connects nurture to regulation in infancy and early childhood in humans and other mammals (e.g., Fleming, O'Day, & Kraemer, 1999; Heim & Nemeroff, 2001; Hofer, 1987, 1994). Positive nurturing attitudes might thus foster the regulation needed for positive sociomoral behavior. If so, then connections between early nurturing attitudes and behavior far beyond early childhood might also be found, particularly if the regulatory functions of these attitudes continue and are stable over time. Longitudinal work, with more diverse samples, could effectively address how nurturing attitudes and behaviors develop along with

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the developing capacities of the child to promote flourishing in the sociomoral domain.

### Footnotes

1 Undoubtedly parenting attitudes toward other behaviors characteristic of early social groups (e.g., breastfeeding) might also play a role in creating a nurturing environment supportive of child flourishing. See Narvaez, Wang et al, 2013.

2 All models were estimated with the lavaan package in R (Rosseel, 2012), mimicking the popular SEM software EQS (Bentler, 2000-2008; R Core Team, 2013). Full-information maximum likelihood was used to address missing data. The QuantPsyc package in R (Fletcher, 2012; *Skew* function) was used to find skewness values, which ranged from -2.14 to 1.77. Each value was significantly different than normal ( $p < .05$ ), suggesting significant non-normal data. We thus used the Satorra-Bentler adjustment/correction in evaluating model fit.

3 Other model fit indexes such as CFI and RMSEA also showed adequate fit.

4 Again, other model fit indexes such as CFI and RMSEA also showed adequate fit.

### References

- Achenbach, T. M. (1974). *Developmental psychopathology*. New York: Ronald Press.
- American Academy of Child and Adolescent Psychiatry (2008). The depressed child. Downloaded on June 10, 2013 from [http://www.aacap.org/cs/root/facts\\_for\\_families/the\\_depressed\\_child](http://www.aacap.org/cs/root/facts_for_families/the_depressed_child)
- Bell, S. M., & Ainsworth, M. D. (1972). Infant crying and maternal responsiveness. *Child Development, 43*, 1171–1190.
- Bentler, P. M. (2000-2008). *EQS 6 structural equations program manual*. Encino, CA: Multivariate Software, Inc.
- Birmaher, B., Ryan N. D., Williamson, D. E., Brent, D. A., Kaufman, J., Dahl, R. E., Perel, J., & Nelson, B. (1996). Childhood and adolescent depression: A review of the past 10 years, Part I. *Journal of the American Academy of Child and Adolescent Psychiatry, 35*, 1427-1439.
- Bloom, P. (2013). *Just babies: The origins of good and evil*. New York, NY: Crown Publishers.
- Bowlby, J. (1980). Attachment and loss: Vol 3. Loss: Sadness and depression. New York: Basic.
- Carlson, G. A., & Kashani, J. (1988). Phenomenology of major depression from childhood through adulthood: Analysis of three studies. *American Journal of Psychiatry, 145*, 1222-1225.
- Carter, C. S., Ahnert, L., Grossman, K. E., Hrdy, S. B., Lamb, M. E., Porges, S. W., & Sachser, N. (2005). Attachment and bonding: A new synthesis. MIT: Dahlem Workshop Reports.
- Chao, R. (1994). Beyond parental control and authoritarian parenting style: Understanding Chinese parenting through the cultural notion of training. *Child Development, 65*, 1111-1119.
- Cirulli, F., Francia, N., Berry, A., Aloe, L., Alleva, E., & Suomi S. J. (2009). Early life stress as a risk factor for mental health: Role of neurotrophins from rodents to non-human primates. *Neuroscience and Biobehavioral Reviews, 33*, 573–585.
- Dearing, E. (2004). The developmental implications of restrictive and supportive parenting across neighborhoods and ethnicities: Exceptions are the rule. *Applied Developmental Psychology, 25*, 555-575.
- DeWolff, M. S., & van IJzendoorn, M. H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Child Development, 68*, 571-591.
- Eisenberg, N. (2000). Emotion, regulation, and moral development. *Annual Review of Psychology, 51*, 665-697.
- Field, T. (2001). Massage therapy facilitates weight gain in preterm infants. *Current Directions in Psychological Science, 10*, 51-54.
- Fleming, A. S., O'Day, D. H., & Kraemer, G. W. (1999). Neurobiology of mother infant interactions: Experience and central nervous system plasticity across development and generations. *Neuroscience and Biobehavioral Reviews, 23*, 673-685.
- Fletcher, T. D. (2012). *QuantPsyc: Quantitative Psychology Tools*. R package version 1.5. <http://CRAN.R-project.org/package=QuantPsyc>
- Gottlieb, G. (2002). On the epigenetic evolution of species-specific perception: The developmental manifold concept. *Cognitive Development, 17*, 1287–1300.
- Haley, D.W., & Stansbury, J. (2003). Infant stress and parent responsiveness: Regulation of physiology and behavior during still-face and reunion. *Child Development, 74*, 1534-1546.

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- Harkness, S., & Super, C. M. (2006). Themes and variations: Parental ethnotheories in Western cultures. In K. Rubin & O. B. Chung (Eds.), *Parenting beliefs, behaviors, and parent-child relations: A cross-cultural perspective* (pp. 61–80). London: Psychology Press.
- Harlow, H. (1958). The nature of love. *American Psychologist*, *13*, 673-685.
- Heim, C., & Nemeroff, C.B. (2001). The role of childhood trauma in the neurobiology of mood and anxiety disorders: preclinical and clinical studies. *Biological Psychiatry*, *49*(12), 1023-39.
- Hewlett, B. S., & Lamb, M. E. (2005). *Hunter-gatherer childhoods: Evolutionary, developmental and cultural perspectives*. New Brunswick, NJ: Aldine.
- Hofer, M.A. (1994). Hidden regulators in attachment, separation, and loss. In N.A. Fox (Ed.), *Emotion regulation: Behavioral and biological considerations. Monographs of the Society for Research in Child Development*, *59*, 192-207.
- Hofer, M. (1987). Early social relationships: A psychobiologists view. *Child Development*, *58*, 633-647.
- Hoffman, M. L. (1970). Moral development. In P. H. Mussen (Ed.) *Carmichael's manual of child development (Vol. 2, pp. 261-359)*. New York: Wiley.
- Holden, G. & Buck, M. J. (2002). Parental attitudes toward childrearing. In M. Bornstein (Ed.), *Handbook of parenting (2<sup>nd</sup> Ed.), Vol. 3: Being and becoming a parent* (pp. 537-562). Mahwah, NJ: Erlbaum.
- Hrdy, S. B. (2009). *Mothers and others: The evolutionary origins of mutual understanding*. Cambridge, MA: Harvard University Press.
- Kagan, J., Reznick, S., & Snidman, N. (1987). The physiology and psychology of behavioral inhibition in children. *Child Development*, *58*, 1459-1473.
- Kiang, L., Moreno, A. J., & Robinson, J. L. (2004). Maternal preconceptions about parenting predict child temperament. *Developmental Psychology*, *40*, 1081-1092.
- Kochanska, G. (1994). Beyond cognition: Expanding the search for the early roots of internalization and conscience. *Developmental Psychology*, *30*, 20-22.
- Kochanska, G. (2002). Mutually responsive orientation between mothers and their young children: A context for the early development of conscience. *Current Directions in Psychological Science*, *11*, 191–195.
- Kochanska, G., Barry, R. A., Aksan, N., & Boldt, L. J. (2008). A developmental model of maternal and child contributions to disruptive conduct: The first six years. *Journal of Child Psychology and Psychiatry*, *49*(11), 1220-1227.
- Konner, M. (2005). Hunter-gatherer infancy and childhood: The !Kung and others. In B. Hewlett & M. Lamb (Eds.), *Hunter-gatherer childhoods: Evolutionary, developmental and cultural perspectives* (pp. 19-64). New Brunswick, NJ: Transaction.
- Koverola, C., Papas, M. A., Pitts, S., Murtaugh, C., Black, M. M., & Dubowitz, H. (2005). Longitudinal investigation of the relationship among maternal victimization, depressive symptoms, social support, and children's behavior and development. *Journal of Interpersonal Violence*, *20*, 1523-1546.
- Kruger, A. (1992). The effect of peer and adult-child transductive discussions on moral reasoning. *Merrill-Palmer Quarterly*, *38*, 191-211.
- Laible, D., & Thompson, R. (2000). Mother-child discourse, attachment security, shared positive affect, and early conscience development. *Child Development*, *71*, 1424-1440.
- Lanius, R., Vermetten, E. & Pain, C. (2010). *The impact of early life trauma on health and disease: The hidden epidemic*. Cambridge, UK: Cambridge University Press.
- Levine, S. (2005). Developmental determinants of sensitivity and resistance to stress. *Psychoneuroendocrinology*, *30*, 939-946.
- Lindsey, E. W., & Colwell, M. J. (2003). Preschoolers' emotional competence: Links to pretend and physical play. *Child Study Journal*, *33*, 39-52.
- McLoyd, V., Kaplan, R. Hardaway, C., & Wood, D. (2007). Does endorsement of physical discipline matter? Assessing moderating influences on the maternal and child psychological correlates of physical discipline in African American families. *Journal of Family Psychology*, *21*, 165-175.
- Narvaez, D. (2014). *Neurobiology and the Development of Human Morality: Evolution, Culture and Wisdom*. New York, NY: W.W. Norton.
- Narvaez, D. (forthcoming). *Embodied morality: Protectionism, engagement and imagination*. New York, NY: Palgrave-Macmillan.
- Narvaez, D., & Gleason, T. (2013). Developmental optimization. In D. Narvaez, J., Panksepp, A. Schore, & T. Gleason (Eds.), *Evolution, Early Experience and Human Development: From Research to*

## NURTURING PARENTING ATTITUDES

- Practice and Policy* (pp. 307-325). New York: Oxford University Press.
- Narvaez, D., Gleason, T., Wang, L., Brooks, J., Lefever, J., Cheng, A., & Centers for the Prevention of Child Neglect (2013). The Evolved Development Niche: Longitudinal Effects of Caregiving Practices on Early Childhood Psychosocial Development. *Early Childhood Research Quarterly*, 28 (4), 759–773. Doi: 10.1016/j.ecresq.2013.07.003
- Narvaez, D., Panksepp, J., Schore, A., & Gleason, T. (Eds.) (2013). *Evolution, Early Experience and Human Development: From Research to Practice and Policy*. New York, NY: Oxford University Press.
- Narvaez, D., Valentino, K., Fuentes, A., McKenna, J., & Gray, P. (Eds.) (2014). *Ancestral Landscapes in Human Evolution: Culture, Childrearing and Social Wellbeing*. New York, NY: Oxford University Press.
- Narvaez, D., Wang, L., Gleason, T., Cheng, A., Lefever, J., & Deng, L. (2013). The Evolved Developmental Niche and sociomoral outcomes in Chinese three-year-olds. *European Journal of Developmental Psychology*, 10(2), 106-127.
- NICHD Early Child Care Research Network (2004). Affect dysregulation in the mother-child relationship in the toddler years: Antecedents and consequences. *Development and Psychopathology*, 16, 43-68.
- Panksepp, J., Burgdorf, J., Turner, C., & Gordon, N. (2003). Modeling ADHD-type arousal with unilateral frontal cortex damage in rats and beneficial effects of play therapy. *Brain and Cognition*, 52, 97-105
- Parke, R. D. & Buriel, R. (2006). Socialization in the family: Ethnic and ecological perspectives. In W. Damon & R. M. Lerner (Series Ed.) and N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social emotional, and personality development* (6<sup>th</sup> ed. 429-504). Hoboken, NJ: Wiley.
- Peterson, C., & Seligman, M.P. (2004). *Character strengths and virtues*. Oxford: American Psychological Association and Oxford University Press.
- Piaget, J. (1932). *The moral judgment of the child*. New York: Harcourt, Brace & Co.
- Porges, S. (2011). *Polyvagal theory*. New York: Norton.
- Potegal, M. & Einon, D. (1989). Aggressive behaviors in adult rats deprived of playfighting experience as juveniles. *Developmental Psychobiology*, 22, 159-172.
- Powers, S. I. (1988). Moral judgment development within the family. *Journal of Moral Education*, 17, 209-219.
- R Core Team (2013). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL <http://www.R-project.org>.
- Ramklint M., & Ekselius, L. (2003). Personality traits and personality disorders in early onset versus late onset major depression. *Journal of Affective Disorders*, 75, 35-42.
- Rao, U., & Chen, L. A., (2009). Characteristics, correlates, and outcomes of childhood and adolescent depressive disorders. *Dialogues in Clinical Neuroscience*, 11, 45-62.
- Rapee, R. M. (1997). Potential role of childrearing practices in the development of anxiety and depression. *Clinical Psychology Review*, 17, 47-67.
- Richman, A. L., Miller, P. M., & LeVine, R. A. (1992). Cultural and educational variations in maternal responsiveness. *Developmental Psychology*, 28, 614-621.
- Rossee, Y. (2012). lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, 48(2), 1-36. URL <http://www.jstatsoft.org/v48/i02/>
- Sachser, N., Hennessy, M. B., & Kaiser, S. (2011). Adaptive modulation of behavioural profiles by social stress during early phases of life and adolescence. *Neuroscience and Biobehavioral Reviews*, 35, 1518-1533.
- Sánchez, M., Ladd, C. O., & Plotsky, P. M. (2001). Early adverse experience as a developmental risk factor for later psychopathology: Evidence from rodent and primate models. *Development and Psychopathology*, 13, 419-449.
- Sigel, I. E., & McGillicuddy-DeLisi, A. V. (2002). Parent beliefs are cognitions: The dynamic belief systems model. In M. H. Bornstein (Ed.), *Handbook of parenting* (2nd ed., pp. 485–508). Mahwah, NJ: Erlbaum.
- Sorensen, M. J., Nissen, J. B., Mors, O., & Thomsen, P. H. (2005). Age and gender differences in depressive symptomatology and comorbidity:

## NURTURING PARENTING ATTITUDES

- An incident sample of psychiatrically admitted children. *Journal of Affective Disorders*, 84, 85-91.
- Spangler, G., Schieche, M., Ilg, U., Maier, U. & Ackerman, C. (1994), Maternal sensitivity as an external organizer for biobehavioral regulation in infancy. *Developmental Psychobiology*, 27, 425-437.
- Spence, S. H., Rapee, R., McDonald, C., & Ingram, M. (2001). The structure of anxiety symptoms among preschoolers. *Behaviour Research and Therapy*, 39, 1293-1316.
- Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., ... Stewart-Brown, S. (2007). The Warwick-Edinburgh Mental Well-being Scale: Development and UK validation. *Health and Quality of Life Outcomes* 5, 63. doi:10.1186/1477-7525-5-63
- Thompson, R. (2012). Whither the pre-conventional child? Toward a life-span moral development theory. *Child Development Perspectives*, 6, 423-429.
- van den Berg, C.L., Hol, T., van Ree, J.M., Spruijt, B.M., Everts, H., & Koolhaas, J.M. (1999). Play is indispensable for an adequate development of coping with social challenges in rats. *Developmental Psychobiology*, 34, 129-138.
- Walker, L. J., & Taylor, J. H. (1991). Family interactions and the development of moral reasoning. *Child Development*, 62, 264-283.
- Walker, L. J., Hennig, K. H., & Krettenauer, T. (2000). Parent and peer contexts for children's moral reasoning development. *Child Development*, 71, 1033-1048.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, 96, 465-490.
- Zahn-Waxler, C., & Radke-Yarrow, M. (1990). The origins of empathic concern. *Motivation and Emotion*, 14, 107-125.
- Zisook S., Lesser I., Stewart J. W., Wisniewski, S. R., Balasubramani G. K., Fava, M., ... Rush, A. J. (2007). Effect of age at onset on the course of major depressive disorder. *American Journal of Psychiatry*, 164, 1539-46.

## Appendix

### Child Triune Ethics Measure: Subscale Items

#### Ethic of Self-Protection

<u>Social opposition</u>	<u>Social distrust</u>	<u>Social withdrawal</u>
Combative	Watchful	Timid
Easily upset	Suspicious	Withdrawing
Hostile	Untrusting	Anxious
Argumentative	Vigilant	Cowardly
Uncooperative		Fearful
Aggressive		Nervous
Fights easily		Scared
Angry		Hesitant
Threatening		Wallflower
Hot-tempered		Freezes

#### Ethic of Engagement

<u>Social enjoyment</u>	<u>Social attunement</u>	<u>Social consideration</u>
Excited	Forgiving	Thoughtful
Laughs	Gentle	Attentive
Happy	Kind hearted	Considerate of others
Pleasant	Cuddly	Moral
Cheerful	Sympathetic	Honorable
Loving	Empathic	Respectful
Affectionate	Supportive	
Playful	Comforting	
Cheerfully interactive		

#### Ethic of Imagination

<u>Social imagination</u>
Creative
Thinks of new ideas
Artistic
Enterprising
Original
Innovative

## NURTURING PARENTING ATTITUDES

Table 1  
*Descriptive Statistics for Parenting Attitudes and Child Outcomes*

Variables	<i>N</i>	<i>Mean</i>	<i>SD</i>	Minimu m	Maximu m	Alpha
Parenting attitudes						
Responsivity	16 6	19.63	4.34	9	25	.87
Touch	16 6	22.34	3.82	9	25	.88
Play	16 5	22.01	3.05	13	25	.79
Alloparents	16 4	23.96	3.59	15	30	.68
Child outcomes						
Social opposition	16 0	29.01	10.38	11	60	.92
Distrust	16 0	12.23	3.62	4	24	.61
Social withdrawal	16 0	25.99	8.88	10	60	.91
Social enjoyment	16 0	50.36	5.33	25	54	.93
Social attunement	16 0	40.61	5.91	23	48	.88
Social consideration	16 0	30.36	4.15	19	36	.84
Social imagination	16 0	29.26	4.95	15	36	.81
Thriving	15 5	61.30	6.95	36	70	.84
Empathy	15 7	68.27	12.14	31	89	.77
Happiness	15 4	25.71	2.94	17	30	.73
Depression	15 8	43.98	14.34	17	102	.92
Anxiety	16 0	44.33	15.86	27	116	.94

	11					
Misbehavior	16 0	2.34	0.66	1.42	5.50	.77

*Note:* Misbehavior had six items, five on a 4-pt. scale and one on a 6-pt. scale. Raw scores from each item were first averaged and then items were summed.

Table 2  
*Partial Correlations (and p-values) between Nurturing Parenting Attitudes and Child Outcomes*

Child outcomes	Parenting attitudes			
	Responsivity	Touch	Play	Alloparents
Social opposition	-.225 (.006)	-.336 (.000)	-.248 (.002)	-.238 (.003)
Social distrust	-.240 (.003)	-.254 (.002)	-.162 (.048)	NS
Social withdrawal	-.387 (.000)	-.443 (.000)	-.382 (.000)	-.327 (.000)
Social enjoyment	.399 (.000)	.674 (.000)	.612 (.000)	.510 (.000)
Social attunement	.174 (.033)	.403 (.000)	.313 (.000)	.281 (.001)
Social consideration	.204 (.013)	.418 (.000)	.357 (.000)	.310 (.000)
Social imagination	NS	.263 (.001)	.189 (.021)	.249 (.002)
Thriving	.209 (.012)	.448 (.000)	.403 (.000)	.265 (.001)
Empathy	.380 (.000)	.543 (.000)	.415 (.000)	.395 (.000)
Happiness	.263 (.001)	.351 (.000)	.311 (.000)	.277 (.001)
Depression	-.227 (.006)	-.348 (.000)	-.294 (.000)	-.322 (.000)
Anxiety	-.364 (.000)	-.580 (.000)	-.504 (.000)	-.339 (.000)
Misbehavior	NS	-.293 (.000)	-.240 (.003)	NS

*Note.* All analyses were conducted controlling for household income.

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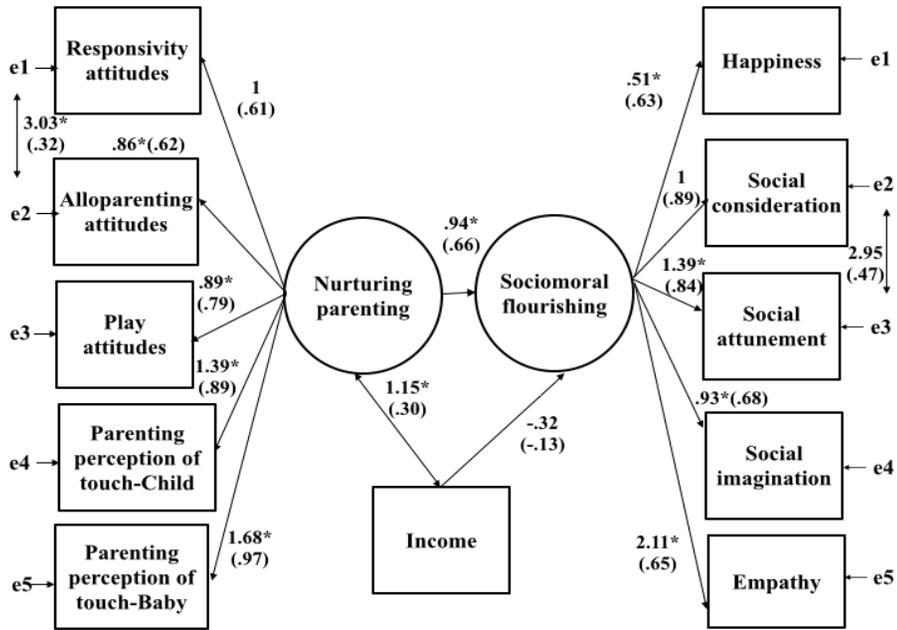


Figure 1. Structural equation model demonstrating the influence of nurturing parenting on child sociomoral flourishing,  $\chi^2(50, N = 156) = 53.152, p = .354, CFI = .994, RMSEA = .021$ . Coefficients are unstandardized (and standardized); \* $p < .05$ .

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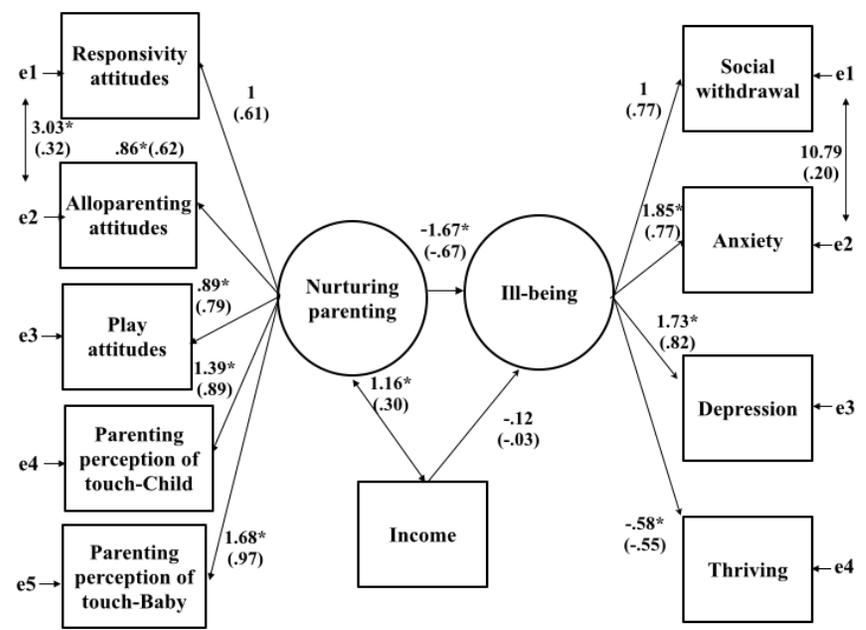


Figure 2. Structural equation model demonstrating the influence of nurturing parenting on mental health problems,  $\chi^2(40, N = 156) = 44.674, p = .28, CFI = .988, RMSEA = .028$ . Coefficients are unstandardized (and standardized); \* $p < .05$ .

NURTURING PARENTING ATTITUDES

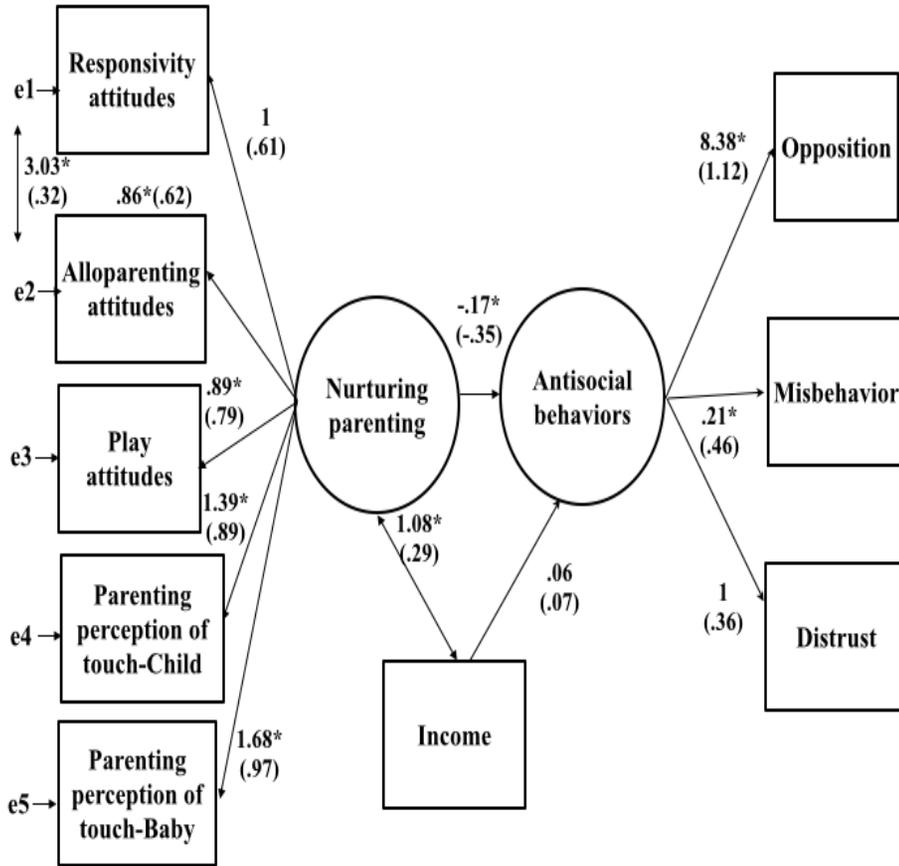


Figure 3. Structural equation model demonstrating the influence of nurturing parenting on antisocial behaviors,  $\chi^2(31, N = 156) = 31.262, p = .453, CFI = .999, RMSEA = .008$ . Coefficients are unstandardized (and standardized); \* $p < .05$ .