Lisa L. Persinger, Ph.D., NCSP, Northern Arizona University, Educational Psychology Department, PO Box 5774, Flagstaff, AZ 86004, USA Lisa.Persinger@nau.edu

Joey D. Persinger, MA, NBCT, Northern Arizona University, Educational Psychology Department

Early Stages of Sociocultural Development

We often think about the development of a person's interpersonal skills, relationships, and identity as something that happens after birth, and certainly, it does. However, in practice, prenatal (before birth) interactions between caregivers and the fetus start the sociocultural developmental process that continues after a baby is born. Personality development, interpersonal style, and identity begin before birth and extend far into the life span. Caregivers provide interactions as well as physical care during pregnancy, and after birth, that influence these developments. This chapter will provide an overview of how interactions from conception through age two influence trust and attachment, emotional development, play, and gender expression. We will examine the influence of the social and cultural environment, as well as the influence the child has on caregivers.

Authors' Note

This may be a good time to discuss the variety of families and pregnancy situations that are considered in this chapter. Regardless of who the eventual caregivers are for a child, (inclusive of adoptive parents, extended family serving as parents, same-sex parents, single parents, or other iterations), there is a relationship with the infant and child that is valuable and influential in the child's development. We honor all family make ups and choose to use the term "caregiver" whenever possible. Sometimes, given the research being shared, terms like "father" or "mother" are unavoidable. However the infant's family is made up after its birth, at this time only women (biologically born women, regardless of gender identity or expression) carry and deliver babies. We therefore use "woman" when discussing the pregnant person and her interactions with the unborn (especially those that are biologically related). When research discusses the possibility of others outside fetus/woman interactions, we discuss the woman's

partner(s) to avoid the assumption of the woman or her partner(s) taking on the post-birth role of caregiver.

Trust and Attachment

Caregiver bond with the in utero fetus is the beginning of the process of attachment, the development of a relationship between two beings. It will be important in a child's emotional development for the child to bond with at least one care-giving adult. This adult will provide a sense of safety and belonging in the world from which the child can venture forward with growing confidence. More strongly attached infants, those who feel secure in their bonding with at least one adult, have a greater range and expression of play and exploration within their environment.

The strength of attachment between a pregnant woman (and/or her partner(s)) and a fetus influences later development. Prenatal attachment is about the adults' emotional connection with the unborn baby. Consistently across cultures, the pregnant woman and partner(s) might sing to and talk to the fetus, sometimes providing attributes for its behavior. We've seen this on television or in movies when a pregnant woman says "oh, he's kicking, he likes you" or provides some other cause for movements, kicks, or calm behaviors. The stronger the adults' attachment to the fetus, the greater will be the emotional investment in the baby both before and after birth.

Women who are experiencing trauma or depression may need support in developing attachment with their unborn child (Vedova, Dabrassi, & Imbasciati, 2008). Specifically, when a woman carrying a baby is depressed, her emotions can have physical impacts on the developing fetus both in gestational weight (what a baby weighs when it is born) and birth age (how many weeks the woman was pregnant when the child was born) (Field, Diego, & Hernandez-Reif, 2010). An average for "full gestation" or "full term" pregnancies is forty weeks.

Lower levels of maternal-fetal attachment and maternal depression after birth are associated with delays in infant and toddler development. Stronger maternal-fetal bond and lower depressive symptoms are associated with better infant and toddler development (Alhusen, Hayat, & Gross, 2013; Rubertsson, Pallant, Sydsjö, Haines, & Hildingsson, 2015). Maternal-fetal attachment also influences a woman's health care behavior during pregnancy, which in turn, promotes healthier development of the fetus and infant. In other words, when a woman is pleased about the prospect of the baby that she carries, she is more likely to adapt her behaviors in ways that benefit its health, things like changing her diet, reducing or eliminating drug or alcohol consumption (including caffeine), taking vitamins, or changing exercise or sleep patterns.

Attachment (close relationship building) between a young child and the adults around it will influence that child's developing adult behaviors and outcomes. Both emotional regulation (an ability to control one's responses to life events) and a sense of self are shaped by early relationships. Additionally, and as a result, these early relationship patterns go on to inform adult emotional relationships.

Attachment Profiles

As we age, we have agency, or the ability to decide, who we want to be around. Children, and especially infants do not have the ability to withdraw from unpleasant or unproductive relationships with the people in their environment. Situations around a child's early development will influence the attachment profile they develop. Attachment profiles were first studied and discussed by the psychologist Dr. Mary Ainsworth in the 1960s. Based on their interactions with primary caregivers, one of four different types of attachment can develop: *secure*, *anxious-ambivalent insecure*, *anxious-avoidant insecure*, and *disorganized*. These were discovered during a specifically designed scenario where the infants' responses were measured and

categorized when caregivers would leave and return (Ainsworth, 1989). Later studies have evolved more nuanced category types.

An *anxious-avoidant insecure* attachment can develop when an infant's needs have been frequently unmet. Though every caregiver will require breaks from a new infant, there are rare situations where the baby repeatedly and consistently has unmet needs. This can lead the baby to believe that expressing needs is pointless. The infant will develop a nonattachment to the caregiver's departures and returns by displaying disinterest. The baby who develops *anxious-avoidant insecure* attachment will not seek a caregiver's attention and may even turn away or squirm to get away when picked up. This baby has learned that to express needs is not the way to attach or be close to their caregiver because they have consistently been ignored.

Infants who develop *anxious-ambivalent (*also called *anxious-resistant insecure)* attachment are less likely to explore than more secure babies. They may show a great deal of distress even before a caregiver leaves and while the caregiver is gone, and may continue to show distress upon the caregiver's return. This is where the descriptor "ambivalent" comes in. It means having mixed or contradictory feelings about something. The infant feels distress when the caregiver leaves and relief when he or she returns, but does not show relief with smiling or positive emotional orientation to the caregiver who has returned. Instead the baby acts helpless or frustrated when the caregiver returns. These behaviors seem to be an attempt to get and keep the caregiver's attention. Typically, this attachment type develops in response to unpredictable caregiving.

Infants who develop *disorganized* attachment are responding to caregivers of whom they are afraid. The human instinct is to turn to the adult as a place of comfort when experiencing fear, but if the caregiver is the source of the fear, the baby feels conflicted. When children have

cause to consistently feel afraid of their caregiver, they demonstrate *disorganized* attachment behavior. There is repeated stress on the child of a conflicted sense of needing and seeking what they also fear. They may seek comfort from their caregiver and then abruptly turn from them when they get close enough to remember they are afraid.

The caregivers in this instance may not be acting in outright abusive or neglectful ways but may, instead, be suffering from their own trauma which they emotionally carry with them. Depressed and traumatized caregivers can develop *disorganized* attachments with their infants. In this situation, the infants remove themselves emotionally. The baby has learned that no attaching strategies (e.g., crying, laughing, cooing, and otherwise attracting adult attention) consistently works with the caregiver whose response patterns are unpredictable.

Reactive Attachment Disorder (RAD) is a diagnosis for infants who experience severe neglect, abuse, or separation from caregivers in infancy that results in a failure to form attachments. Children who are diagnosed with RAD might fail to engage in social situations in appropriate ways either by disengaging (inhibited form) or engaging inappropriately (disinhibited form). Children with the inhibited form of RAD will not seek adult comfort even if they are distressed. In a school setting, a child with the disinhibited form of RAD might touch peers or be physically close to them in ways that make the peers uncomfortable. They will often seek excessive amounts of attention from adults.

Childhood and adult relationships are challenging for people with RAD because these relationships are built on dysfunctional ideas of how relationships operate. Not every child who experiences negative engagements with the primary caregiver will develop Reactive Attachment Disorder, in fact, very few do. Children are resilient and often form stable, affirming relationships even if they have experienced neglect or abuse.

Ideally, infants and their caregivers form *secure* attachments exemplified by an infant who is confident in exploring, shows distress when a caregiver departs but is easily soothed and confident in further exploration when the caregiver returns. These are infants who know they are safest in the care of the caregiver who will unconditionally and consistently respond to the infant's needs. Development of secure attachment bonds is the objective of early childhood interaction between caregiver and infant.

Bioecological Systems Theory

The intimate relationship between an infant and the primary caregiver is only one of multiple relational exchanges that influence a child's development. A theory of child development based strongly on the influence of the child's environment was posited by Urie Bronfenbrenner. A Russian-born psychologist, Bronfenbrenner moved to the United States as a young child. He worked as a developmental psychologist, engaged in understanding the ways children develop. He was an important contributor to the development of the U.S. Federal Head Start initiative for preschoolers in the mid 1960s.

Bronfenbrenner's Bioecological Systems model of human development (Bronfenbrenner & Morris, 2006) considers multiple layers of a child's environment and the ways the components within the layers interact when describing developmental influences. This theory presents life systems as a series of concentric circles, with the smallest being the *individual*, i.e., one's sex and health.

The *microsystem* (the next concentric circle outward from the *individual*) encompasses those closest to the developing child, including the primary caregiver, the rest of those living in the household, and those with whom the child has frequent and reliable contact, such as a daycare provider (or for older children, pre-school teacher and pre-school environment, and later,

school).

The *mesosystem*, represented as the next concentric circle, is made up of the interactions between and among all of the participants in the *microsystem*. So, for example, if two members of a household are arguing consistently, this influence on the child is acknowledged in the *mesosystem*.

The next ring out is the *exosystem*. Neighborhood, media, and caregiver employment would all be components of the *exosystem*. Regardless of the in-home life of a developing child, living next door to a busy intersection or a place where drugs are sold will have a different influence than living next door to a library. This reality is acknowledged in the *exosystem*.

The *macrosystem* refers to the cultural realities surrounding the infant's (and child's) life. Everything in close proximity to the child's development (i.e., the *exosystem*, *mesosystem*, and *microsystem*) is influenced by broader cultural values and common understandings. The idea, for instance, that blue is a color for boys and pink is one for girls is a recent, and already evolving, idea from the *macrosystem* that might influence an infant. Growing up in a media culture, children across the age span are influenced by the culture where they live.

The final ring in Bronfenbrenner's ecological system is the *chronosystem* which considers the larger nature of changes over time throughout a child's development and life. Your *chronosystem* and your grandmother's are completely different. For many adults who grew up during the Great Depression in the United States, for example, evidence of the deprivation they experienced during their developmental years influenced how they spent and saved money for the rest of their lives. Perhaps your parents or grandparents have been surprised by the relative acceptance of same-sex coupling through legalized marriage, as they remember a time when homosexuality was cause for imprisonment, shock therapy, or mandated hormone suppressants.

The situations of the *chronosystem* continue to influence our understandings of what is possible and impossible throughout our lives.

Sociocultural Theory

This idea that the larger society has an on-going and noticeable impact on a child's development is related in some ways to the theories of Lev Vygotsky, a Russian psychologist. Vygotsky's sociocultural theory recognized the importance of social contexts in development and in the learning process (1967). Vygotsky saw learning as firmly rooted in social engagements, language, and the nature of play. We'll look more at his work later in this chapter when we discuss play.

Next, let's learn how an infant's emotional expression promotes interactions with adults as well as the role adults play in a child's emotional and social development.

Interaction with Others and Effect on Emotions

Malekpour, in a review of existing research, detailed the tremendous changes in our understanding of infants over the past 30 years, noting that an infant is "far more competent, social, responsive and more able to make sense of his or her environment than we ever imagined" (2007, pg. 81).

Interactions between babies and their caregivers shape the relationship, bonding, and emotional experiences of both the infant and the caregiver. Newborns' display of emotions serves to provoke the caregivers into interactions to socially engage, help soothe, or meet the needs of the baby. As the baby grows, more and different emotional expressions emerge.

Emotions are broadly categorized as positive or negative. Positive emotions are those like happiness, joy, excitement, and contentment while negative emotions include those such as

sadness, anger, jealousy, fear, and disgust. The ability to express different emotions emerges in a predictable timetable for infants worldwide.

Newborns exhibit or show both categories of emotion. They exhibit joy and contentment when experiencing pleasure. They cry in response to pain, hunger, fatigue, or other needs. For example, when an infant is hungry or tired she will cry until the caregiver satisfies the need. Likewise, a happy and relaxed posture and behavior is evident in the baby who has just eaten.

Babies quickly learn and show a broader range of emotions than just crying or showing joy. These other emotions develop quickly and automatically and are typically recognized by caregivers and others. In fact, emotions are the first communications that infants have with their caregivers. Needs are communicated through emotional responses before language has emerged in infants. In this way, emotions play a functional role for infants and their caregivers. Caregivers can become skilled at recognizing their baby's different cries. This helps them understand when the baby is hungry, tired, angry, or in pain.

By six weeks of age, babies born at full term (that is, after a full forty-week pregnancy) exhibit a *social smile* when they see another person's face. Infants and their caregivers engage in social exchanges that help both communicate. These social exchanges support the infant's development of emotional expression and bonding with the caregiver.

Between two and four months of age, a child's caregivers begin to see genuine laughter in response to caregiver attempts to make the baby laugh by using facial expressions. Familiar adults and caregivers provoke a bigger smile and excited arm and leg flailing, whereas unfamiliar adults provoke a social smile in the infant without the same excitement level. During this same developmental time, interactions between the caregiver and infant take on more social features. The caregiver's cooing and exaggerated smile, laughter, and touch evoke a similar

response from infants; the caregiver coos, then the baby coos in response. This give and take where the adult engages the baby and the baby shares back, happens in infant-caregiver relationships across cultures and continents.

Curiosity also emerges between two and four months of age as infants explore their immediate environment. This curiosity is, in part, what leads infants to discover that they are in control of their hands and can decide whether or not to put them in their mouths. When infants are first born, putting their hands and feet into their mouths is unintentional, they just sometimes land there. Imagine, if you can, how it might feel to not understand that you are in control of your feet and hands. An infant whose curiosity leads to banging her mother's keys on the floor may respond with laughter and excitement at the sound. Curiosity is an important emotion driving infant learning.

Anger and sadness appear between two and eight months. In infancy, anger serves an important role in helping to cope with frustration in part by attracting caregivers' attention whereas sadness reflects a withdrawal or giving up. Sadness is associated with higher levels of stress hormone in the brain. Lewis and Ramsay (2005) studied infants' emotional responses when blocked from achieving a goal. In this research, they studied four-month old and six-month old infants. They attached a string to the infants' wrists that, when pulled, activated a picture of another infant's smiling face and a recording of children singing. Once the infants learned that the pull of the string brought this result, the researchers made a change. Now, when the infants pulled the string, there was no response. The researchers examined the infants' facial expressions and checked their stress hormone levels. The infants expressed increases in joy and surprise and anger as they learned that pulling the string would provide smiling faces and singing children. Their joy and surprise decreased but anger and sadness increased when pulling the string no

longer lead to the smiling faces and singing children. In this situation, anger occurred at a higher frequency in the 4-month old infants than did sadness. Only sadness was associated with the infants' increase in stress hormone.

Surprise first appears in infancy around six- to eight-months of age. The study mentioned above is a good example of infants showing surprise when the pull of the string leads to smiling faces and singing children. Infants this age show surprise when the caregiver hides behind a towel and then quickly emerges in a peek-a-boo game. While infants as young as six months demonstrate surprise, a recent study showed that twenty-month old infants understand emotion expressed in music as well (Carrey-Siu & Cheung, 2017). These researchers showed twelve-month old and twenty-month old infants pictures of faces while also playing them music. Sometimes the faces shown to the infants were congruent (or matched up with) the music and sometimes the faces were incongruent (they didn't match). The researchers were able to show that only the twenty-month old infants showed surprise when the facial expressions weren't congruent with the music.

Fear also emerges around six months of age. Anxiety or fear when strangers are present is the most commonly recognized fear in infants and toddlers. When babies are younger than this, a caregiver can hand the baby off to a friend or co-worker without the baby showing any awareness of caring. When the baby begins to feel anxiety and fear; however, the baby will respond by clinging or crying if someone other than the primary caregivers want to hold them. Initial wariness of strangers at six-months old tends to increase and become a more pronounced fear between nine and eighteen months of age when fear of strangers begins to diminish.

Empathy, jealousy, and embarrassment generally emerge between eighteen and twenty-four-months of age. These are the first self-conscious emotions to emerge. Self-conscious

emotions are those that occur when infants become aware of themselves and are able to self-reflect on their interactions with others in their environment. As these emerge you might see a child demonstrate embarrassment when given attention or demonstrate jealously at the realization that a sibling has something desirable. The emergence of these self-conscious emotions are linked to the child's cognitive development, particularly, self-reflection. Once the child learns the rules, standards, and goals of interactions, additional self-conscious emotions arise, generally after the first two years of life.

Emotional Regulation

Emotional regulation, or controlling the emotions one shows, is a developmental task of infancy and early childhood. Regulation of one's emotions is reflected in the infant's ability to inhibit or limit emotional responses and to self-soothe or calm oneself. Development of good emotional self-regulation allows us to adapt to new environments and stimuli with less stress. Stronger emotional regulation is linked later to a more adaptive, happier, and more socially and academically competent child. Weaker emotional regulation is associated with later mental health problems in children (e.g., Spinrad, Eisenberg, Cumberland, Fabes, Valiente, Shepard, et al., 2006).

Initially, infants are dependent on the external environment and assistance from caregivers to help them regulate their emotions. When caregivers pick up and comfort a crying baby they are providing external assistance to achieve soothing and thus, emotional regulation for the infant. This serves as a foundation for providing oneself with physical comfort when emotionally distressed. When the mother of a toddler distracts the child during vaccination she is providing support for emotional regulation. This also serves to help the child learn that distraction can be a helpful strategy when stressed, information the child can use later to help

manage emotions. Caregivers use facial expressions, physical contact, and their voices to help a baby feel comforted and safe.

As the baby grows from infancy to early childhood, emotional regulation shifts from externally to internally driven. A baby learning to soothe herself when distressed is a milestone in the development of emotional self-regulation. Infants learn to use strategies in a purposeful way to help themselves feel more comfortable. For example, young infants may suck their thumbs (physical comfort) or avert their gazes (distract themselves) from over-stimulating environments.

Social Referencing

Infants also begin *social referencing* in the second year of life. Social referencing involves interpreting others' emotions to help decide how to behave in a given situation. Interpreting the emotional state of others helps the infant know to feel safe or afraid in new or ambiguous situations. Researchers have found that infants presented with a stranger, look to their mother and respond with fear when the mother displays fear (Mumme, Fernald, & Herrera, 1996). Social referencing becomes noticeable when an older infant looks at her caregiver for emotional cues in order to guide her response and emotional self-regulation.

Recall the earlier discussion of the broad categories of positive and negative emotions expressed by infants. A recently-completed longitudinal study followed infants from nine months to twenty-seven months. The study found that infants high in displays of negative emotion (crying) had better emotional regulation when raised by supportive co-parents. In other words, even if the baby's emotions were more likely to be negative, caregivers' supportive reactions could help the child learn to respond more calmly. Infants with similarly high levels of negative emotional displays showed poorer emotional regulation when raised in a less supportive co-

parenting home (Altenburger, Lang, Schoppe-Sullivan, Kamp Dush, & Johnson, 2017). This research clarifies the positive impact that supportive parenting can have on a baby's development of emotional self-regulation even when the baby is highly emotional and is likely to cry often and have difficulty being soothed by others.

When Mother is Distressed

When a pregnant woman is experiencing a high level of stress, this can have long-term effects on the unborn child. A longitudinal research study by Barker (2013) followed infants and their mothers from pregnancy through 4 years of age to examine the impact of the mother's emotional state and stress situations on the infant's emotional regulation. Chronically-depressed mothers compared to non-depressed mothers experienced partner conflict or low social support. This predicted higher child dysregulation if experienced between pregnancy and age two. These children went on to be more consistently emotionally dysregulated between age two and age four.

In another large study of woman/infant pairs, higher levels of maternal depression symptoms during pregnancy were associated with a more unhealthy diet, both during pregnancy and after the birth of the baby. These issues with maternal depression and unhealthy diet were associated with poorer emotional regulation in their children at ages 2, 4, and 7 years (Pina-Camacho, Jensen, Gaysina, & Barker, 2015).

Since we know that exposure to prenatal stress is associated with poorer health and emotional regulation outcomes in children, other researchers have tried to sort out inherited versus environmental effects on babies. Some researchers have looked at whether emotionally dysregulated babies (those with difficulty soothing themselves, for example) were more likely a result of inherited factors or environmental factors. To test this question, Rice, Harold, Boivin,

Van-den Bree, Hay, and Thapar (2010) looked at the babies of birth mothers and those born to surrogate mothers who carried the genetic material from another woman (in other words, the surrogate was carrying the baby but had no part in its conception). They found that both environmental and inherited factors can play a part in emotional risks for the baby. Specifically, stress experienced as an unborn child was found to be associated with later anxiety in children regardless of their relationship to the pregnant woman. They also found that Attention Deficit Hyperactivity Disorder (ADHD) was only observed in the group with related mothers and children. This suggests that prenatal stress associated with ADHD symptoms is more attributable to inherited factors than environmental ones.

Examination of surrogacy families (those whose genetic baby was carried by an unrelated woman), compared with egg donation families, (those whose baby was genetically unrelated to the parents), and those with natural conception found that surrogacy does not appear to have a negative impact on parenting or child development in families with 2-year-old children (Golombok, MacCallum, Murray, Lycett, & Jadva, 2006).

Culture and Prenatal Development

The question of the role culture plays in prenatal developmental has also been explored as it relates to medical care and nutrition and issues such as parental attitudes, availability of care, parental expectations, and values. Bravo and Noya (2014) conducted an extensive review of the available research and found that several important protective factors for normal development were identifiable in the research on culture and development. Protective factors are those that support healthy, normal development. Across cultures, home environments that provide the following are associated with healthy development:

- positive expectations

- early prenatal care from sensitive healthcare providers and good nutrition

- cultural values that serve a protective function

- interdependent and supportive relationships among family and community members.

The absence of any of these factors could have a negative impact on child and maternal outcomes.

Temperament

Temperament refers to individual differences in emotional self-regulation and how people respond to changes in their environment. It is evident in the first weeks of life. Temperament is based in one's biology but is influenced by experiences during development (Rothbart & Bates, 2006). An infant's temperament can influence caregivers' responses (Nolvi, Karlsson, Bridgett, Pajulo, Tolvanen, & Karlsson, 2016). Infant temperament is linked to later personality, adjustment, and social development as well as mental health problems (e.g. Rothbart & Bates, 2006). Temperament can be reliably studied and measured beginning in infancy. The Emotion Regulation and Temperament Laboratory at Northern Illinois University is dedicated to research in this area (see http://www.niu.edu/emotionreg/index.shtml).

Three overarching dimensions of temperament are commonly cited and studied. These include effortful control, mood or affect, and activity (Rothbart & Derryberry, 1981). Effortful control refers to the ability to self-soothe and regulate one's attention and emotion. Mood or affect refers to one's emotional responses such as fear, anger, or positive displays of emotion as well. Infant smiling and laughter is widely accepted as a marker of early positive emotionality while negative emotionality is defined as excessive crying. Activity refers to how social and interactive we are in situations. For example, some may be shy and reluctant while others may be

outgoing and exuberant. It is important to understand the relationship between these dimensions as well as how these dimensions relate to future outcomes for toddlers, children, and adults.

One's processes of emotional self-regulation as well as emotional reactivity to environmental changes are included in definitions of temperament. One's ability to direct and shift attention plays into self-regulation skills. For example, when we distract ourselves or divert attention from scary or horrifying images (covering your eyes during a scary part of a movie) in order to manage our emotional response, we are using attentional control to self-regulate our emotional reactivity.

One important indicator of negative emotionality is excessive crying in infancy. Infants characterized as excessive criers display the lowest levels of subsequent self-regulation (Stifter & Spinrad, 2002). Bridgett et al. (2009) found that higher levels of negative emotionality at four months of age predicted less orienting to adults for soothing and lower self-regulation between the ages of four and twelve months which supports the findings by Stifter & Spinrad (2002). Researchers found that increases in toddler negative emotionality from nine to twenty-seven months were associated with poorer delay of gratification and poorer language development (Leve, DeGarmo, Bridgett, Neiderhiser, Shaw, Harold, et al., 2013).

Effortful control refers to one's ability to inhibit a dominant response in favor of providing a nondominant, more adaptive response instead. For example, imagine a toddler who experiences extreme jealousy and lashes out at her sibling by hitting or shoving and taking the desired toy instead of thinking about the options and offering to trade a toy for the desired one. In that instance, hitting is the dominant response, where trading would be a more adaptive response. Effortful control serves a regulatory function in one's temperament (Rothbart & Bates, 2006; Rothbart & Sheese, 2007).

Infant temperament factors, including effortful control are influenced by and influence relationships with caregivers as evidenced in a study by Gartstein, Bridgett, Young, Panksepp, and Power (2013). When a child looks away from a stressful event, he is orienting away from it, which is a form of effortful control. Infant temperament as measured by initially looking at a presented stimuli and then looking away (regulatory capacity/orienting) is a good predictor of later effortful control in toddlerhood where looking away from something stressful more quickly is associated with better effortful control later. Mothers who are more extroverted seem to promote increased effortful control in their toddlers. Parenting stress, on the other hand, is associated with lower effortful control in toddlers (Gartstein, et al., 2013).

Activity level has been studied in numerous ways. Rothbart and Derryberry (1981) combined subjective activity-level ratings and smiling and laughing ratings by others into what they called *positive reactivity*. A baby who reacts positively to activities and new situations is showing positive reactivity, versus the child who exhibits *negative reactivity* by showing stress or crying. These temperament characteristics influence caregiver responses and vice versa.

Temperament styles. Temperament styles are generally classified into several types. The *easy child* is one who demonstrates a positive mood and quickly adapts to experiences and routines. Forty percent of infants can be classified as easy (Chess & Thomas, 1977). A *difficult child* cries frequently, has trouble establishing routines in infancy, reacts negatively to changes and ambiguous situations, and is slower to accept change. Ten percent of infants are difficult (Chess & Thomas, 1977). *Slow-to-warm-up* infants exhibit lower negative emotional expression than the difficult child. Their activity and intensity of mood are also less intense, but the affective responses are still somewhat negative. These infants represent 15% of the population (Chess & Thomas, 1977). Thirty-five percent of infants are not easily classified.

Goodness of fit. Bates (2001) discussed *goodness of fit* as the match between the environment and its demands on the child and the child's temperament. Physical and social environments are important elements of the goodness of fit within the rearing environment. Bridgett, Burt, Laake, & Oddi (2013) studied the effects of am other's self-regulation skills, home environment, and parental relationship on her infant's emotionality, one of the three key facets of temperament. They studied mothers with four-month old babies living in rural areas of the United States. Mothers with better self-regulation skills more often had infants with lower negative emotionality at four months of age. These infants were rated as less sad and distressed and as having better emotional regulation than the infants of mothers with poorer self-regulation skills. Mothers with better self-regulation also tended to live in less chaotic home environments and to have better co-parenting relationships. This, in turn, was favorably associated with infant emotionality.

Mothers with symptoms of depression tend to have infants with steeper increases in fearfulness over time. In a study of mothers and 158 infants, high initial infant fear and steeper increases in fear predicted more severe toddler anxiety symptoms at ages intervals of four, six, eight, ten, and twelve-months of age (Gartstein, Bridgett, Rothbart, Robertson, Iddins, Ramsay, & Schlect, 2010).

The research on temperament, parental factors and a child's subsequent development is clear. A child with an easy temperament seems to elicit responses from well-adjusted parents that are supportive of their long term outcomes. Unfortunately, the combination of stressed parents and a baby with a difficult temperament are associated with poorer outcomes. Calm and adaptive parents have stronger, better outcomes when they can stay calm with a baby with a difficult temperament.

Play

Play is fun, engaging, and essential to young children's early development. In the

American Journal of Play, David Elkind (2008) identifies play, love, and work as the "three

basic drives that power human thought and action, three drives essential to a full, happy, and

productive life" (p. 2). Throughout the life cycle, humans engage in these three components of

living.

Toy preference as it relates to a child's biological sex and perceived gender has been

studied for some time. This preference has been assessed as girls' preference for "feminine toys"

and boys' for more "masculine toys" in children as young as one year (Servin et al., 1999). As

children aged, this study found that neutral and more masculine toys were preferred by all

children. Other studies have found that children are increasingly attracted to same-sex toys (i.e.,

those that are typically aligned with a binary gender system and its stereotypical toy

representations such as truck for boys and dolls for girls). Toy preference seems to be influenced

by societal expectations in that as children increase in age, their identified toy preference is more

pronouncedly gendered. Girls, more often than boys, engage in neutral toy play.

More recently, very young children, still infants, have been found to indicate preferences

for different toys as well. Researchers have used eye-tracking technology with 30 infants from

three to eight-months old, too young to assert a direct preferences. Alexander et al (2009) found

that infants exhibited preferences by looking longer at traditionally gender-associated toys that

matched their biological sex (dolls and trucks) before an awareness of gender identity developed.

While play may not be part of prenatal infants' lives, their experiences within the womb

influence future play. Researchers have found that prenatal hormone exposure influences gender

and influences play behavior as well (see the chapter about biological influences on prenatal to

age-two development in this volume). Prenatal stress to a pregnant woman can provoke changes in a child's later play behavior as well. Toddlers whose mothers experienced stress during pregnancy were influenced by the stress hormones in a way that showed itself in later language development, delayed intelligent functioning, and also in the ways the toddlers played (Laplante, Zelazo, Brunei, & King, 2007). These children played in more stereotypically gendered ways with less functional and diverse play behaviors at two years of age than did children who did not experience the effects of maternal stress during pregnancy. It is interesting to imagine the power of prenatal exposure to stress hormones and other hormones in the later development of something as seemingly natural as play.

Psychologists and Play

Psychologists have long understood play as a way that children and infants learn about the world. Elkind (2008) discusses early learning about gravity in the situation when a baby drops a spoon off the edge of a high chair or table. The caregiver who picks up the spoon and returns it is teaching the child about gravity, as well as about relationship interactions. Social, emotional, and intellectual skills are developed through the learning experiences of play. Lev Vygotsky, a Russian psychologist, considered play as the key to development. He called it a "magnifying glass" that "contains all developmental tendencies in a condensed form" (Vygotsky, 1967, p. 16). Vygotsky believed that through play, a child could jump ahead developmentally.

In an earlier section when we discussed Lev Vygotsky's sociocultural learning theory, the focus was on the importance of the ways infants' and children's surroundings influence their development. This idea continues to be true as we look at play. In play, children take on imaginary worlds and identities. The negotiation of these play identities or role playing activities requires and inspires language use with others and within the self. Vygotsky believed language

was responsible for the transmission of cultural knowledge. In his research he found that language was essential in children's imaginative play.

Think of your earliest play, perhaps by yourself, creating a world where a dump truck wasn't buzzing across the living room floor but was on the moon. These play experiences require and inspire language. They are also rooted in a child's current cultural reality. One can learn a great deal about children's experiences by listening to their language during imaginative play when children replicate the linguistic and cultural experiences they have internalized. Children provide for themselves a kind of support system (what Vygotsky called self-scaffolding) wherein they teach themselves how to understand the world through play. The self-talk (or inner speech) children engage in, is a form of self-regulation that becomes internalized as they age.

Children often seek autonomy through mimicking the behavior of others, playing in repetition of what they've seen the adults in their lives enacting, for better and for worse. Elkonin, a student of Vygotsky's whose work has influenced preschool curricula and strategies for typically-developing and special needs children, moved beyond Vygotsky's sociocultural theory. Working with anthropologists (2005), Elkonin explored the idea that in early hunter gatherer societies, play was the way children developed and came to understand the roles they would inhabit as adults. We see unspoken belief in that idea enacted in the toys produced for children. Toy kitchens, ovens, and toy tool sets are a staple of toy store shelves, as are miniaturized and sometimes motorized vehicles.

Play, especially role play, is social in origin. It is sensitive to human interactions and to human work and goals. Play supports the development of collaboration and group efforts while promoting mastery of social relationships. Elkonin understood play as the transfer of meaning from one thing to another – this isn't a stick, it's a magic wand. In modern times, some tools and

technologies required in the world of adults aren't always available or appropriate for young children's use.

There are a number of voiced concerns regarding the use of technology as play for young children. Interactive screens can be as engaging as traditional toys for children. Cleaner and quieter than hands-on toys, they can be preferred by parents. In a study of over one thousand children, aged birth to six years, Vandewater, Rideout, Wartella, Huang, Lee, and Shim (2007) found that one-fifth of children aged two years and younger had their own televisions in their bedrooms. In addition, seventy-percent of children two years and younger in the study fell short of the American Academy of Pediatrics (2016) guidelines for media consumption (Vandewater et al., 2007) which calls for avoiding any screen media (other than video-chatting) until a child is eighteen-months old.

As discussed throughout this chapter, birth to age 2 represents a critical time in brain development, relationship building, and foundations for healthy behaviors. Play, with and without toys, represents an important component of that developmental time. Children in this age group need opportunities to use their hands to engage in the world, as a way to develop cognitive and motor skills (Barr, 2013). Symbolic experiences, like those in digital media, fail to provide the kind of skill building that comes from interactions with caregivers.

There is evidence (Kirkorian, Choi, & Pempek, 2016) that from twenty-four months on, children can learn from engaging with interactive touch screens. Prior to this age, evidence suggests that on-screen experiences fail to transfer to the broader world (Zack, Gerhardstein Meltzoff, & Barr (2013). It is recommended that if digital media are introduced to children 18 to 24 months old, caregivers should choose only high-quality, child appropriate programing and should watch with their children (American Academy of Pediatrics, 2016).

Adult Caregivers and Play

Parent-child play is common across cultures though patterns of play, including how much and kinds of play, vary. As noted earlier, babies seem especially designed to encourage caregivers to interact with them. Their coos and cries summon adults who will walk them, rock them, and soothe them. This proximity to adults supports infants' investigation of the world from a place of safety.

Young children will involve themselves in the source of action in a household. Caregivers make their conversation simpler and perhaps slower for the youngest children who may only respond with babbles and drool. Parents use body language and signaling cues to support a child's understanding of language, until the child no longer needs this support (Rogoff, Gilbride, & Malkin, 1983). Regardless of income, caregivers support language competence, improved thinking skills, and stronger emotional control through play. All parents seem to encourage exploring when supporting play with their very young children. Caregivers respond to infant cues such as preoccupation with other tasks and facial expressions. Regardless of their gender, caregivers respond similarly in providing stimulation and affection as well as teaching and responsiveness during play. Some researchers have investigated the differences in play behaviors during male-caregiver provided play, noting that it can be more teasing, more physically engaging (especially with biologically male children), more risk taking, and more likely to reinforce gender roles. It should be noted however, that caregivers of all genders vary their play styles with all children.

When looking at children's early development, research has often been based on caregiver gender. Looking specifically at fathers' play interactions with their toddlers, researchers have identified decreases in developmental delays (Shannon, Tamis-LeMonda,

London, & Cabrera, 2002), and improved motor and social abilities (Kelley, Smith, Green, Berndt, & Rogers, (1998) when fathers engage in play.

The parent also is in charge of providing the external tools of play. Artifacts indicating evidence of play date to the Neolithic Age and appear in every major early civilization. Toys, though, are not necessary components of play as children with rocks, sticks, or just their fingers can create imaginative worlds of play. Parent-initiated finger play (e.g., This Little Piggy, Itsy Bitsy Spider) and other traditional word and motion games (London Bridge) and clapping games (Pat-a-Cake) engage children while providing cultural and linguistic knowledge.

Categories of Play

Play has been an integral part of human development throughout recorded history. The Greek philosopher, Plato, recognized the value of play in influencing development of successful adults. Formal research on play has been on-going since at least the 1930s. Mildred Parten (1932) published her dissertation findings wherein she had closely monitored young children (between two and six) at play. The categories for types of play she found are still used to discuss children's play today. They include:

- Social participation - classified as unoccupied (not specifically engaged in play)
- Solitary (or independent) play
- Onlooker (children observe and may discuss, but not actively participate in ongoing play)
- Parallel play (also called adjacent play, the child plays alone, but alongside others)
- Associative group play
- Cooperative group play

Associative group and cooperative group play are least common among young children because the designation of the categories relate directly to the way the play is organized,

especially the children's roles (assigned and unassigned) within that play. While other categories of play have been explored and added to Parten's categories (e.g., imitative play, social bids), her work has substantially influenced understandings of play and play development in children.

Early childhood researchers note the ways children as young as eighteen months play alone, with a single other child, or in a group. Play in these contexts, in addition to parallel, solitary, and group play, include considerations of play with and without toys. Other play categories, particularly for older children, include imaginative play.

Children two and under are most likely to engage in onlooker or parallel play, that is, to play alone but beside other children. Most often, very young children engage in parallel play where the play is *near* rather than *with* a playmate. My 18-month old might mouth his blocks or attempt to stack them, but will not engage with the same-aged child beside him. In the case of this parallel play, there are blocks and there are children and there is play, but they aren't all engaged together.

As you can see, play serves an important function in a child's development. A child's temperament and development of emotions play a strong role in developing relationships with caregivers. Cultural knowledge and family values are conveyed through play and the interactions adults have with their children about play and emotional expression. Societal expectations, including beliefs about gender are part of this cultural conveyance through play.

Gender Development

Understanding of gender and values around gender has changed throughout history. In current times, gender is understood to be on a continuum, or gender spectrum, rather than as a binary male-female system. Gender has three known dimensions including gender identity, gender expression, and biological sex or gender biology. All three of these dimensions are

addressed in the prenatal and early childhood ages covered in this chapter. Be aware that gender development does not stop at age two but continues throughout childhood and sometimes into adult life.

Theories on Gender Development

Lawrence Kohlberg initially proposed a cognitive developmental theory of gender in 1966. The gist of this theory included the notion that children develop understanding of the concept of themselves as male or female and then understand their world by gender and live into that self-conception of gender. The child, in Kohlberg's theory uses same-gender role models for developing interests and expression. For example, little Sarah sees cues in her social world including physical features of men and women, appearance, dress, social actions, and roles such as domestic roles parents and siblings fill at home. Once Sarah conceives of herself as a girl, she will then define her interests as those she believes are girl things and subsequently find those activities and interests rewarding. She may try to emulate her mother or older sister to achieve this.

Kohlberg believed that constancy of gender identity is not developed until about the kindergarten-first grade age ranges, five to seven years. Once gender identity is developed, children continue to use the input from the social world to shape behavior and interests associated with their gender as represented and reinforced in their environment. Gender constancy is the understanding that one's gender remains the same no matter what the person is doing or wearing.

A related theory with a different conception is that of gender schema. Unlike Kohlberg's theory which said that children first develop constancy in their gender identity and then note the way gender is presented in the world, gender schema theory suggests the opposite. Specifically,

this theory suggests that children learn gender-associated behaviors, dress, and interests and this learning, in turn, helps them to conform to gender expectations. As you can see, the social and cultural context of a child's upbringing is the key driving force in this theory, though environmental context is important in both of these theories.

Culture and Gender

Understandings of gender are steeped in cultural contexts. Some modern cultures including those of India, Polynesia, and Albania among others, include more than two genders in their societal recognition systems. Many examples of historical cultural descriptions, including several American Indian tribal cultures, include discussions of more than two genders or people without a binary gender identity. Despite the growing awareness of a gender spectrum, in popular U.S. culture it is not uncommon for a pregnant woman or expecting couple to be asked, "Is it a girl or a boy?" This common question is associated with the idea that the baby's biological sex is equivalent to its gender identity and gender expression later. Most of the time, this assumption holds up, but sometimes it does not. The three dimensions of gender are related but also may develop more independently than once thought, and may be less reliant on biology that previously assumed. At any rate, expectant parents and their friends and family begin the process of gender socialization before the child is born.

Think about expectant parents routinely being asked, "Is it a girl or a boy?" This exemplifies the pervasive belief in a binary gender system, despite our increased knowledge that gender is experienced on a spectrum. Perhaps the expectant parents have a preference for the gender of their child. Perhaps they have picked out names for the girl they expect the baby to be based on a recent ultrasound. An interesting phenomenon in current popular culture in the U.S. is the "gender reveal" party, where expectant parents share the baby's sex with friends and family.

The "gender reveal" party reflects the belief that the biological sex of the baby is equivalent to later gender identity. Gift giving and shopping is often focused on traditional gender-associated toys, clothing, and baby care objects even in the absence of the "gender reveal" party. The gendered elements might include colors or patterns of the fabrics on strollers and car seats or clothing. It might also include decals on shirts or toys that are thought to conform to male or female stereotypes or gender roles. As you can see, the not-so-hidden gender role education begins early and reflects both parents' and society's understandings and beliefs about gender and gender expression.

Dimensions of Gender

Biological gender or *sex* refers to the anatomy of genitalia and reproductive sex organs inside and outside the body. These "private parts" are typically the indicator used, or precipitator of *gender assignment* at birth. Gender is assigned by physicians and parents based on the child's presentation of genitalia. Sometimes, these adults are inaccurate in their gender assignment. The adults become aware of their error when the child begins to verbally express a different gender than that assumed at birth.

Researchers are now saying that as many as 1 in 100 infants have differences of sexual developmental (intersex) that may be reflected internally (genetically or with internal anatomical structures) and/or externally as ambiguous genitalia (Arboleda, Sandberg, & Vilain, 2014). Sometimes intersex conditions are identified in infancy and sometimes their condition may not be detected until the child is much older. A key issue for intersex individuals has been reflected in many lawsuits on behalf of individuals who were assigned a gender at birth or in early childhood and then were subjected to surgery to "normalize" their genitals, only to find the individual developed a different gender identity than the genital surgery assumed. In short, the

adults decided a child's gender and conformed the child's ambiguous genitalia only to be wrong when the child self-identified gender later. At this point, the movement in the medical community is to refrain from surgery or body alteration for non-threatening disorders of sexual development until the child is older and can consent. The biological development of sexual characteristics is quite complex and non-binary, which corresponds to a broader, spectrum view of gender identity. For a complete review of disorders of sexual development see Ainsworth (2015).

Gender expression refers to the way that we express our gender on the outside, to our family, friends, and the public. Gender expression includes grooming, clothing, and preferences in play and interests. Society's gender role understanding influences adult and peer responses to young children's expressions of gender. For example, think about the 2-year-old boy who enjoys dressing up in his mother's high heels and long dress. In some settings, this child might be swiftly corrected that "dress up" is something that girls do, not boys. Adults can intentionally and unintentionally apply social pressure to young children to conform with gender-based expectations in self-expression, resulting in restrictions on behavior and interests.

Gender roles include those patterns of behavior, attitudes, and expectations of an individual based on their perceived gender. For example, the notion that boys like to play rough and tumble games and girls like to engage in more docile and genteel make-believe games is based on perceived gender roles, or "appropriate" play matching the child's gender. There have been extensive efforts in the U.S. to expand gender roles or debunk the notions that there are gendered play objects, occupations, and emotional and physical expression (e.g. Butler, 2011 and Thorne, 1993).

Gender identity is the third dimension of gender. This refers to people's inner- most sense of their gender, including man/boy, woman/girl, a blend of both, or neither. Gender identity is self-labeled for an individual. *Gender constancy* refers to children's emerging sense of the permanence of being their identified gender. Gender constancy, as discussed earlier, is the understanding that one's gender remains constant regardless of behaviors, dress, and interests. In other words, one's gender doesn't change when wearing a "girly" dress versus "boyish" pants.

Gender constancy tends to occur in stages including identity, stability, and consistency (Adelson & AACAP, 2012; Kohlberg, 1966). Gender identity emerges in early childhood when the child self-identifies gender. In early childhood, as noted in the play section of this chapter, children explore interests and environments through play. As their perception of themselves as gendered people becomes stable and children realize that they will grow up in the same gender they occupy as a child. Consistency is demonstrated when the child maintains the gender identity over time realizing that they cannot change it. Once a child has established gender constancy, between ages 2 and 5, it is often consistent throughout life. However, it is possible that some children may not establish gender constancy at these ages. Constancy may occur later or the individual may ultimately identify as gender fluid (non-binary) or agender (no gender).

Young children often begin asserting gender expression before they verbalize a gender identity. That expression solicits interactions from caregivers and family members that subsequently influence the child's thinking and expression of gender. Imagine 18-month biological boy, Samuel, who requests a new toy truck that makes engine sounds when you press a button and who also wants to wear the same bib overalls with tractor images on them every day. These expressions might elicit chuckles and comments such as, "that's my boy!" Now imagine that Samuel requests as a toy kitchen from the shelf at the toy store. Samuel also

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repeatedly takes his sister's dress, puts it on, and pretends he is cooking in the kitchen. These expressions might elicit comments such as, "boys don't wear dresses" or "boys don't play in the kitchen." Caregiver comments such as these reflect the gender stereotypes valued by the caregivers. When caregivers express direct correction of the child in this way, it will influence the child's beliefs about behavior or interests related to gender. For some children this can be quite distressing and in many cases it can limit a child's exploration of interests and potential talents.

Summary

In this chapter, we have focused on how important the early years of a child's life are to the development of future personal relationships, personality, and identity. Children's natural predispositions develop in concert with their caregivers' attentions. A woman's prenatal health and mental and emotional well-being influences a child's later development. Conscious and unconscious choices caregivers make about interactions with an infant can have long-lasting influences on that child's development. Likewise, children bring their own personality and identity to whatever family they join, changing that family in return. Trust and attachment between infant and caregivers is a critical early developmental process that is influenced by a child's temperament and developing emotional experiences. The infant's emotional expression and temperament influence how adults respond to her, which in turn, influences that child's development in terms of interpersonal style, play behavior and gender identity. The sociocultural context of an infant's environment influence and interact with the child's interests and behaviors guiding development. Development is clearly a complex process based on give and take between the environment and the child.

Further Reading

Adelson, S. L., & The American Academy of Child and Adolescent Psychiatry (AACAP)

  Committee on Quality Issues (CQI). (2012). Practice parameter on gay, lesbian, or

  bisexual sexual orientation, gender nonconformity, and gender discordance in children

  and adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry,*

  51, 957–974.

Alexander, G. M., Wilcox, T., & Woods, R. (2009). Sex differences in infants' visual interest in

  toys. *Archives of Sexual Behavior, 38*(3), 427-433.

Alhusen, J., Hayat, M., & Gross, D. (2013). A longitudinal study of maternal attachment and

  infant developmental outcomes. *Archives of Women's Mental Health, 16*(6), 521-529.

  doi:10.1007/s00737-013-0357-8

Altenburger, L. E., Lang, S. N., Schoppe-Sullivan, S. J., Kamp Dush, C. M., & Johnson, S.

  (2017). Toddlers' differential susceptibility to the effects of coparenting on social–

  emotional adjustment. *International Journal of Behavioral Development, 41*(2), 228-237.

  doi:10.1177/0165025415620058

Ainsworth, M. S. (1989). Attachments beyond infancy. *American Psychologist, 44*(4), 709.

Ainsworth, C. (2015). Sex redefined. *Nature, 518*, 288-291.

American Academy of Pediatrics. (2016). Council on communications and media policy

  statement: Media and young minds. *Pediatrics, 138*(5), 1-6.

Arboleda, V. A., Sandberg, D. E., & Vilain, E. (2014). DSDs: Genetics, underlying pathologies

  and psychosexual differentiation. *Nature Reviews Endocrinology, 10*(10), 603-615.

Barker, E. D. (2013). The duration and timing of maternal depression as a moderator of the

  relationship between dependent interpersonal stress, contextual risk and early child

  dysregulation. *Psychological Medicine, 43*(8), 1587-1596.

doi:10.1017/S0033291712002450

Barr, R. (2013). Memory constraints on infant learning from picture books, television, and touchscreens. *Child Development Perspectives, 7*(4), 205-210.

Bates, J. E. (2001). Adjustment style in childhood as a product of parenting and temperament. In T. D. Wachs & G. A. Kohnstamm (Eds.), *Temperament in context*. Mahwah, NJ: Erlbaum.

Bravo, I., & Noya, M. (2014). Culture in prenatal development: Parental attitudes, availability of care, expectations, values, and nutrition. *Child & Youth Care Forum, 43*(4), 521-538. doi:10.1007/s10566-014-9251-4

Bridgett, D. J., Burt, N. M., Laake, L. M., & Oddi, K. B. (2013). Maternal self-regulation, relationship adjustment, and home chaos: Contributions to infant negative emotionality. *Infant Behavior & Development, 36*(4), 534-547. doi:10.1016/j.infbeh.2013.04.004

Bridgett, D., Gartstein, M., Putnam, S., McKay, T., Iddins, E., Robertson, C., . . . Rittmueller, A. (2009). Maternal and contextual influences and the effect of temperament development during infancy on parenting in toddlerhood. *Infant Behavior & Development, 32*(1), 103-116. doi:10.1016/j.infbeh.2008.10.007

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. *Handbook of Child Psychology*. Hoboken, NJ: Wiley.

Butler, J. (2011). *Gender trouble: Feminism and the subversion of identity*. Abingdon-on-Thames, UK: Routledge.

Carrey-Siu, T., & Cheung, H. (2017). Infants' sensitivity to emotion in music and emotion-action understanding. *PLoS One, 12*(2), doi:10.1371/journal.pone.0171023

Chess, S., & Thomas, A. (1977). Temperamental individuality from childhood to adolescence.

Journal of Child Psychiatry, 16, 218-226.

Elkonin, D. B. (2005). The psychology of play preface: The biography of this research. *Journal of Russian and East European Psychology, 43*(1), 11–21.

Elkind, D. B. (2008). The power of play: Learning what comes naturally. *American Journal of Play*, 1-6.

Field, T., Diego, M., & Hernandez-Reif, M. (2010). Prenatal depression effects and interventions: A review. *Infant Behavior and Development, 33*(4), 409-418. doi:10.1016/j.infbeh.2010.04.005

Gartstein, M. A., Bridgett, D. J., Rothbart, M. K., Robertson, C., Iddins, E., Ramsay, K., & Schlect, S. (2010). A latent growth examination of fear development in infancy: Contributions of maternal depression and the risk for toddler anxiety. *Developmental Psychology*, *46*(3), 651.

Gartstein, M. A., Bridgett, D. J., Young, B. N., Panksepp, J., & Power, T. (2013). Origins of effortful control: Infant and parent contributions. *Infancy, 18*(2), 149-183. doi:10.1111/j.1532-7078.2012.00119.x

Golombok, S., MacCallum, F., Murray, C., Lycett, E., & Jadva, V. (2006). Surrogacy families: Parental functioning, parent–child relationships and children's psychological development at age 2. *Journal of Child Psychology and Psychiatry, 47*(2), 213-222. doi:10.1111/j.1469-7610.2005.01453.x

Kelley, M. L., Smith, T. S., Green, A. P., Berndt, A. E., & Rogers, M. C. (1998). Importance of fathers' parenting to African-American toddler's social and cognitive development. *Infant Behavior and Development*, *21*(4), 733-744.

Kirkorian, H. L., Choi, K., & Pempek, T. A. (2016). Toddlers' word learning from contingent

and noncontingent video on touch screens. *Child Development, 87*(2), 405-413.

Kohlberg, L. (1966). A cognitive-developmental analysis of children's sex-role concepts and

attitudes. In E. E. Maccoby (Ed.), *The development of sex differences* (pp. 82–173).

Stanford, CA: Stanford University.

Laplante, D. P., Zelazo, P. R., Brunei, A., & King, S. (2007). Functional play at 2 years of age:

Effects of prenatal maternal stress. *Infancy, 12*(1), 69-93. doi:10.1111/j.1532-

7078.2007.tb00234.x

Lewis, M., & Ramsay, D. (2005). Infant emotional and cortisol responses to goal blockage.

Child Development, 76(2), 518-530. doi:10.1111/j.1467-8624.2005.00860.x

Leve, L. D., DeGarmo, D. S., Bridgett, D. J., Neiderhiser, J. M., Shaw, D. S., Harold, G. T., & ...

Reiss, D. (2013). Using an adoption design to separate genetic, prenatal, and

temperament influences on toddler executive function. *Developmental Psychology, 49*(6),

1045-1057. doi:10.1037/a0029390

Malekpour, M. (2007). Effects of attachment on early and later development. *The British Journal

of Development Disabilities, 53*(105), 81-95. doi:10.1179/096979507799103360

Mumme, D. L., Fernald, A., & Herrera, C. (1996). Infants' responses to facial and vocal

emotional signals in a social referencing paradigm. *Child Development, 67*(6), 3219-

3237.

Nolvi, S., Karlsson, L., Bridgett, D.J., Pajulo, M., Tolvanen, M., & Karlsson, H. (2016).

Maternal postnatal depressive and anxiety symptoms, infant temperament, and

mother-infant bonding. *Infant Behavior and Development, 43*, 13-23.

Pina-Camacho, L., Jensen, S. K., Gaysina, D., & Barker, E. D. (2015). Maternal depression

symptoms, unhealthy diet and child emotional-behavioural dysregulation. *Psychological*

Medicine, 45(9), 1851-1860. doi:10.1017/S0033291714002955

Parten, M. B. (1932). Social participation among pre-school children. *The Journal of Abnormal and Social Psychology, 27*(3), 243-269.

Rice, F., Harold, G. T., Boivin, J., Van-den Bree, M., Hay, D. F., & Thapar, A. (2010). The links between prenatal stress and offspring development and psychopathology: Disentangling environmental and inherited influences. *Psychological Medicine, 40*(2), 335-345. doi:10.1017/S0033291709005911

Rubertsson, C., Pallant, J. F., Sydsjö, G., Haines, H. M., & Hildingsson, I. (2015). Maternal depressive symptoms have a negative impact on prenatal attachment–findings from a Swedish community sample. *Journal of Reproductive and Infant Psychology*, *33*(2), 153-164.

Rogoff, B., Gilbride, K., & Malkin, C. (1983). Interaction with babies as guidance in development. University of Utah Paper presented at the meetings of the Society for Research in Child Development, Detroit, April 1983.

Rothbart, M., & Bates, J. (2006). Temperament. In N. Eisenberg, W. Damon, & L. M. Richard (Eds.), *Handbook of child psychology: Vol. 3, Social, emotional, and personality development* (6th ed.) (pp. 99-166). Hoboken, NJ: John Wiley & Sons Inc.

Rothbart, M.K., & Derryberry, D. (1981). Development of individual differences in temperament. In M.E. Lamb & A.L. Brown (Eds.). *Advances in Developmental Psychology* (Vol. 1, pp. 37-86). Hillsdale, NJ: Erlbaum.

Rothbart, M., & Sheese, B. (2007). Temperament and emotion regulation. In J. Gross (Ed.), *Handbook of emotion regulation* (pp. 331-350). New York, NY: Guilford Press.

Schlect, S. (2010). A latent growth examination of fear development in infancy: Contributions of

maternal depression and the risk for toddler anxiety. *Developmental Psychology, 46*(3), 651-668. doi:10.1037/a0018898

Servin, A., Bohlin, G., & Berlin, L. (1999). Sex differences in 1-, 3-, and 5-year-olds' toy choice in a structured play-session. *Scandinavian Journal of Psychology, 40*, 43–48.

Shannon, J. D., Tamis-LeMonda, C. S., London, K., & Cabrera, N. (2002). Beyond rough and tumble: Low-income fathers' interactions and children's cognitive development at 24 months. *Parenting: Science and Practice*, *2*(2), 77-104.

Spinrad, T., Eisenberg, N., Cumberland, A., Fabes, R., Valiente, C., Shepard, S., . . . Guthrie, I.K. (2006). Relation of emotion-related regulation to children's social competence: A longitudinal study. *Emotion, 6*(3), 498-510. doi:10.1037/1528-3542.6.3.498

Stifter, C., & Spinrad, T. (2002). The effect of excessive crying on the development of emotion regulation. *Infancy, 3*(2), 133-152. doi:10.1207/S15327078IN0302_2

Thorne, B. (1993). *Gender play: Girls and boys in school*. New Brunswick, NJ: Rutgers University Press.

Vandewater, E. A., Rideout, V. J., Wartella, E. A., Huang, X., Lee, J. H., & Shim, M. (2007). Digital childhood: Electronic media and technology use among infants, toddlers, and preschoolers. *Pediatrics, 119*(5).

Vedova, A. M. D., Dabrassi, F., & Imbasciati, A. (2008). Assessing prenatal attachment in a sample of Italian women. *Journal of Reproductive and Infant Psychology, 26*(2), 86-98. doi:10.1080/02646830701805349

Vygotsky, Lev S. (1967). Play and its role in the mental development of the child. *Soviet Psychology 5*, 6–18.

Zack, E., Gerhardstein, P., Meltzoff, A. N., & Barr, R. (2013). 15-month-olds' transfer of

learning between touch screen and real-world displays: language cues and cognitive

loads. *Scandinavian Journal of Psychology, 54*(1), 20-25.