

MODERATING VARIABLES ON THE RELATIONSHIP BETWEEN
PARENT-CHILD BONDS AND MATURE DECENTERING

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Developmental psychology aims to elucidate how children's early relationships influence their interactions with the world. Piaget's cognitive development theory is often noted when discussing development, and although his cognitive descriptions of decentering (i.e., perspective taking) were compelling, they neglected interpersonal contexts. Accordingly, Feffer conceptualized decentering within a social context. To expand on Feffer's consideration of the social context, the current study explored early parent-child bonds and their impact on child development, specifically interpersonal decentering, in adolescence. In the present secondary analysis of data from the Institute of Human Development longitudinal Guidance Study at the University of California, Berkeley, I hypothesized that, for both boys and girls, conflict with relatives and a parent's nervous instability would moderate the association between early strong parental bonds and more mature decentering at ages 12.5 and 18 years, and that more imaginative play, introspection, and better physical health would moderate the relationship between strong father-son bonds at age 21 months and the son's more mature decentering at age 12.5 and 18 years. The findings revealed that the association between strong father-son bonds at 21 months and the son's more mature decentering at age 12.5 was strongest when the son was less introspective compared to when the son was more introspective. When sons were in better health at ages 5-10 years and 11-17 years, their father-son bonds at age 21 months were more strongly related to more mature decentering at age 18 compared to sons who were in fair to poor health. The current study expands on the impact parental bonds, particularly paternal for sons, have on a child's social cognitive development.

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MODERATING VARIABLES ON THE RELATIONSHIP BETWEEN PARENT-CHILD BONDS AND MATURE DECENTERING

Introduction

The capacity to understand another individual's perspective is considered a mature interpersonal skill (Carpendale & Lewis, 2010). Within developmental psychology, theorists aim to explain how children interact with their physical world, and what strengthens interpersonal relationships, particularly bonds between children and their caretakers. For example, Piaget's concept of decentering highlighted children's cognitive processing in relation to physical objects in their environment (Piaget, 2003/1950); however, this concept can be extended to interpersonal behavior (Feffer & Suchotliff, 1966). Specifically, within an interpersonal context, for an individual to accurately predict another's behavior, the individual must be capable of changing their perspective from their own to the other's.

To further examine one's decentering ability, storytelling assessment measures that prompt interpersonal material can be applied. For example, Fincher (2012) examined Thematic Apperception Test (TAT) narratives that were scored using Feffer's decentering scoring system (Feffer, et al., 2008) to identify mature decentering scores, and she explored if variables like age, gender, socioeconomic status, parent-child relationships, and birth order were associated with these mature decentering scores. Interestingly, regarding gender effects and decentering, Fincher (2012) found no significant correlation between mothers' early bond with male children and high decentering performance on the TAT in early adolescence; however, a significant correlation was found between the fathers' bond with male children at 21 months and the male child's decentering performance on the TAT at 12.5 years. Although such findings provide a broader understanding of decentering through a developmental lens, as well as the usefulness of

narrative-based assessment tools, it is not yet known what moderates the relationship between a father's bond with the male child in infancy and the child's adolescent mature decentering performance on the TAT in adolescence.

To extend Fincher's (2012) findings, this study used the same dataset (with additional variables, and no participants from the control group) and examined moderators that might have played a role in Fincher's outcome. Specifically, five topics appeared likely to moderate the relationship between children's strong bonds with their parents and the later maturation of the child's decentering. First, higher level of conflict with relatives when children are 21 months was assumed to moderate the relationship between strong parent-child bonds and more mature decentering in children at 12.5 and 18 years, such that when there is more familial conflict, the relationship between father-son bonds in infancy and more mature decentering in adolescence will be stronger than when there is less familial conflict. The assumption is that to avoid conflict, some level of perspective taking by children will be necessary (e.g., understanding what will upset another person to avoid conflict).

Second, a parent's higher level of nervous instability was expected to moderate the relationship between the infancy parent-child bond and the child's more mature decentering scores in adolescence. That is, when children have parents who are more nervous, the parent-child bond will have a stronger positive association with more mature decentering in adolescence than when the parents are more stable. The assumption is, in order to maintain a bond and strengthen perspective taking abilities, the child will need to avoid disagreements, misunderstandings, or conflict due to the parent's nervous instability.

Third, it was presumed that a son's behavior or personality trait (his higher Q-sort observer rating of skilled imaginative play or higher observer rating of introspection) would

moderate the relationship between a strong father-son bond in infancy and more mature decentering in adolescence. That is, when sons have higher levels of skilled imaginative play or a higher observer rating of introspection, the relationship between father-son bonds in infancy and mature decentering in adolescence will be stronger than when sons have lower skilled imaginative play or lower introspection ratings.

Finally, it was expected that reports of excellent or good health at ages 5-10 years and 11-17 years would moderate the relationship between strong father-son bonds and more mature decentering such that, when sons had excellent or good health at ages 5-10 years or 11-17 years, the father-son bond would be a stronger positive predictor of more mature decentering in adolescence compared to when sons were less healthy at those ages.

The following sections review the different theoretical orientations concerning child social developmental research and parent-child bonds, and it explores parent-child bonds in relation to the development of perspective-taking abilities. Specifically, previous research has overlooked if high familial conflict affects perspective-taking abilities more generally among children in high-conflict households, if parental nervousness impacts children's mature decentering, the role of fathers in children's development and bonding, and how physical functioning or a child's health status might impact their bond with their father and development of mature decentering. The current study aimed to expand parent-child bonding and child social developmental research by further exploring the role these unique moderating variables play in decentering, particularly among boys and fathers.

Emergence of Personality and Social-Emotional Development Theories

Over the past several decades, different psychological frameworks have transformed psychologists' understanding of child development. For example, well-known psychoanalysts

tried to understand a child's developmental process through free association, play, and by examining parent-child attachment patterns (Fonagy, 2018; Grusec & Lytton, 2012). As theoretical frameworks began to shift, psychologists started to consider how one's culture and environment can influence a child's development and how a child cognitively processes these environmental influences (Carpendale & Lewis, 2004; Grusec & Lytton, 2012).

Historically, psychological understandings of child development have been influenced by three major theoretical frameworks: psychoanalytic, social learning, and cognitive development (Grusec & Lytton, 2012). Each paradigm places an emphasis on specific behaviors or stages in the developmental process. It is important to recognize how each orientation contributed uniquely, and continues to contribute to understanding child social development, as well as what developmental and methodological considerations must be made when examining topics like decentering.

Psychoanalytic Child Development Theoretical Framework

Several of the earliest developmental concepts were influenced by psychoanalytic theories. For example, Freud (1991/1905) discussed psychosexual development to better explain how disruptions in any of these stages of development can result in aberrant personality or sexual behaviors (e.g., castration anxiety). Such theories underscored how early childhood experiences can impact an individual's development well into adulthood. However, much of Freud's developmental theory was focused on instinctual and biological drives and less on psychosocial cognition, as exemplified by his psychosexual stages of childhood development (Berzoff & Schamess, 2011).

Within Freud's drive theory, there was some acknowledgement of interpersonal interactions, albeit, with mechanistic undertones (Flanagan, 2011). Specifically, he used the term

“object” as representing persons who can be used to satisfy or aggravate an individual’s drive (e.g., Oedipal Complex) as opposed to persons who can have a significant relational impact on an individual (e.g., needs being met or unmet in early childhood relationships; Flanagan, 2011; Freud, 1991/1905). Furthermore, Freud’s psychosexual stages highlighted the important role fathers play in children’s development through his discussion of the Oedipal and Electra complexes (Freud, 1924; Kramer & Prall, 1978). To examine further, although the stages emphasized sexual development, the theory considered how a daughter and son identify with their father, and how this unconsciously impacts their sexual identity, interpersonal relationships and behaviors, and process with individuation (Freud, 1924).

Although Freud’s discussions on child development were significant, his focus on drive theory was critiqued by several psychoanalysts like John Bowlby and Mary Ainsworth (Ainsworth et al., 1978/2015). More specifically, Bowlby disagreed with Freud, and argued that during early childhood, self-regulation and well-being are influenced by the mother who is, in a sense, the child’s ego and superego (Bowlby, 1951). Bowlby took a Vygotskian approach, emphasizing the impact dyadic interactions have on a child’s developmental process (Ainsworth et al., 1978/2015). To expand on Bowlby’s argument, Ainsworth helped set the foundation for attachment theory through her observations of attachment patterns between infants and their biological mothers. Overall, attachment theory was inspired by concepts from ethological and developmental psychology, and it steered away from Freudian psychoanalytic ideas (Bretherton, 1992).

In addition to Bowlby’s and Ainsworth’s criticism of Freud’s drive theory, other researchers argued that Freud focused on psychosexuality and described psychological experiences and development in a mechanistic manner (Fonagy, 2018). Moreover, he had little

clinical experience with children, and he did not consider how social contexts impacted a child's social-emotional development (Fonagy, 2018). Accordingly, object relations theory formed to better explain the relational aspect between an individual and another person (i.e., the object).

Attachment

During the 1950s, Bowlby and Ainsworth examined how a child's relationship with their parent (usually the mother) impacted the child's development (Ainsworth et al., 1978/2015; Bretherton, 1992). The attachment framework did not strictly focus on internal experiences of the individual, but instead, underscored the importance of the child's familial environment (i.e., social context). The theory of attachment grew when Ainsworth traveled to Uganda to examine the response of toddlers' separation during the weaning period; however, the project did not turn out as planned and accordingly, Ainsworth decided to observe infant-mother attachment (Ainsworth et al., 1978/2015; Bretherton, 1992). Ainsworth's Uganda study showed there were three infant attachment patterns: (1) securely attached, (2) insecurely attached, and (3) not-yet attached (Ainsworth et al., 1978/2015; Bretherton, 1992). The securely attached infants were comfortable in exploring their environment while their mother was present, and they cried less. Additionally, the insecurely attached infants cried more often, even when held and comforted by their mother, and were less willing to explore their environment. Finally, the not-yet attached infants did not express any distinct aberrant behavior (Ainsworth et al., 1978/2015; Bretherton, 1992). Following this noteworthy observation was Ainsworth's Baltimore study, which involved 26 infant-mother pairs living in Baltimore (Ainsworth et al., 1978/2015). Similar attachment patterns became apparent, indicating that attachment was not necessarily culture-specific (Ainsworth et al., 1978/2015).

Through this paradigm, several researchers have examined the development of certain psychopathology, emotion regulation, and prosocial behaviors. For example, Li et al. (2015) found that secure parental attachment was negatively associated with indirect aggressive behaviors in children (i.e., behaviors that consist of harming others in a covert manner, through social manipulation [e.g., spreading rumors, social exclusion]). Accordingly, it is presumed the more securely attached the child is to the parent, the more stable the child's internal working model, and thus, the less they engage in indirect aggressive behaviors (Li et al., 2015). Moreover, Panfile and Laible (2012) examined secure attachment and prosocial behaviors in children. Specifically, prosocial behavior was measured during a baby-cry procedure in which a child was left alone in a room and a recording of a baby's cry played for approximately one minute. During this crying spell, a confederate would exclaim they were searching for the baby's pacifier. Prosocial behavior was coded on a scale of 1 – no attempt to 4 – strongly assisting the confederate (Panfile & Laible, 2012). Panfile and Laible (2012) found that children who were more empathetic (according to maternal reports) and had a secure attachment with their mother, engaged in more prosocial behaviors than children who were less empathetic and who had lower levels of secure attachment.

Multiple studies have also found that insecure or disorganized attachment in childhood and adolescence is associated with adult psychopathology and emotion dysregulation (Clear & Zimmer-Gembeck, 2017; Mikulincer & Shaver, 2019; Pascuzzo et al., 2015). Additionally, Gander and Buchheim (2015) discussed research concerning attachment classification and psychophysiological responses. They stated that many researchers found that individuals with more insecure attachment styles showed heightened adrenocortical activity, heart rate, and skin conductance when exposed to a stressor; this underscores the theory that insecure attachment

styles put individuals at risk for emotion dysregulation (Gander & Buchheim, 2015). Unlike earlier psychoanalytic theories, attachment theory focused on the relational aspect of development, and placed a heavier role on one's social context as opposed to solely focusing on the individual child's developmental process.

Object-Relations

In addition to attachment theory, object-relations theory aimed to challenge the mechanistic conceptualization of child development by Freud. Psychoanalytic object-relations theory underscores the importance of interpersonal relationships and describes the process and manifestation of the internalization of these interpersonal interactions (Kernberg, 1995). For example, Melanie Klein emphasized that one's internal world encompasses representations of the self and the other (i.e., internal working models), all of which are formed by the individual's interpersonal experiences and memories (Kernberg, 1995; Klein, 1933; Ogden, 2002). Most important, these self-other representations are formed during the infant-parent bonding period (Klein, 1933). In other words, the infant-parent bond is significant for one's development in that it can ultimately impact how an individual perceives themselves, others, and themselves in relation to others.

Social Learning Child Development Theoretical Framework

Social learning theory gained popularity in the 1960s as a theoretical framework used to better understand child development through a more social perspective as opposed to a mechanistic one (Bandura, 1971). This theoretical concept includes but is not limited to a better understanding of modeling through a child's sibling relationships, culture, and the application of different parenting techniques (Carpendale & Lewis, 2010).

Albert Bandura was influential in the social learning movement, and he provided a unique perspective by relating concepts in behaviorism (e.g., operant conditioning and reinforcement) to social learning. According to this framework, children's behaviors are shaped by what is modeled to them. Most importantly, if the behavior is reinforced by positive consequences, the behavior will likely be repeated and will be difficult to change (Bandura, 1971). In fact, various studies have highlighted this, particularly regarding intergenerational patterns of domestic violence. For instance, Forke et al. (2018) found that boys' witnessing adult male perpetration was associated with higher violence perpetration.

Regarding more global influences, several studies have found that exposure to violent television or video games was associated with injuries and aggressive behaviors (Carnagey & Anderson, 2005; Fabio et al., 2017). Although social learning theory was impactful, given the complex nature of the subject, several methodological problems became obvious. For instance, one issue concerned how representative lab simulations were to real-world situations (Grusec & Lytton, 2012). Additionally, though some researchers found relationships between media violence and violent behaviors, other researchers found no such relationship (Kühn et al., 2019). One reason for this is that such research often relies on games and shows with violent content that varies (Plante & Anderson, 2017).

Moreover, according to Carpendale and Lewis (2010), social cognitive theories are typically formed by two contrasting theoretical assumptions; the first assumption is focused on individualistic processes and the second is focused on relational processes. The individualistic perspective has been the standard approach in developmental psychology; however, there are several limitations to this paradigm. First, individualistic assumptions rely on the child's individual self-knowledge as a starting point for their social development (Carpendale & Lewis,

2006). For example, infants are assumed to have an innate ability to imitate other people and see others as similar to them (Meltzoff, 1999). Meltzoff and Moore (1977) argued that infants age two to three weeks protrude their tongue in response to an adult who presents this behavior. Furthermore, Meltzoff and Moore (1983) found even infants as young as 32 hours old imitated oral movements (i.e., tongue protrusion) like adults. This evidence has been used to support the claim that infants are aware of recognizing similarities between the self and other individuals, which is an important trait in the development of social interactions and perspective-taking skills (Carpendale & Lewis, 2006; Carpendale & Lewis, 2010).

Although the imitation findings were initially exciting, Jones (1996) stated infants' tongue protrusions occurred when compelling objects were hung in front of them, indicating the behavior as an oral exploration as opposed to imitation. Moreover, Carpendale and Lewis (2006) noted that an infant is not able to witness themselves smiling; accordingly, the infant's experience of their personal smile is inherently different from witnessing another individual smile. Despite varying findings, the underlying theme highlights the importance of infants perceiving themselves in relation to others (i.e., infants seeing themselves as inherently different from or similar to their caregiver). Ultimately, mature decentering involves an individual to understand their own and another's perspective simultaneously, and this is an important relational quality that allows individuals to understand themselves in relation to others.

Cognitive Child Development Theoretical Model

Finally, cognitive developmental theories emerged, and more recently, have become popular in understanding social-emotional development in children. Cognitive psychology grew in the mid-1950s and became a popular multidisciplinary subject by 1960 (Miller, 2003). Given the interdisciplinary nature of cognitive science, developmental psychologists began examining

children's development through a cognitive lens (Huitt & Hummel, 2003). Most notably, the development of perspective-taking, role-taking, and decentering have been related to an individual's cognitive development, and these concepts have been associated with Piaget's (1950/2003) framework on cognitive development in children (Carpendale & Lewis, 2010).

Piaget's Cognitive Development and Decentering Theory

Piaget's (1950/2003) influential research was motivated by two considerations: (1) the process of learning and (2) the stages individuals undergo to obtain that knowledge.

Furthermore, he had an interest in biology, and thus conceptualized children's developmental processes through a biological and cognitive lens as opposed to a more social and interpersonal lens (Huitt & Hummel, 2003; Piaget, 1950/2003). Accordingly, Piaget classified cognitive development into four stages.

The first stage in Piaget's cognitive development framework was known as the sensorimotor stage, which occurs during infancy. Here, children begin to acquire object permanence, mobility, and symbolic language (Piaget, 1972). The second stage is known as the pre-operational stage and occurs during toddlerhood and early childhood. This stage entails a child's ability to demonstrate their intelligence through the use of symbols, language, memory, and imaginative play; additionally, children maintain an egocentric cognitive experience (Piaget, 1950/2003). Interestingly, the concept of egocentrism is highlighted as a feature of this stage, however, in Piaget's later works, he describes egocentrism as a reoccurring feature at the beginning of each developmental stage (Kesselring & Muller, 2011).

Moreover, the third stage, known as the concrete operational stage, begins during early adolescence, and encompasses the expansion of a child's intelligence (Piaget, 1950/2003).

Specifically, children begin to express logical thought patterns related to symbols that manifest

concrete objects. Most importantly, it is believed that during this stage, egocentric thinking begins to fade (Huitt & Hummel, 2003). The child begins to develop an understanding of mutual respect and perspective-taking abilities; this is further perpetuated and expressed when children play games that include explicit rules and guidelines (Kesselring & Muller, 2011; Piaget 1932/1997). Finally, the last stage is the formal operations stage, which occurs during late adolescence and early adulthood (Piaget & Inhelder, 1969/2008). The child's/adult's intellectual capacity is expressed through abstract thinking and the ability to logically understand symbols associated with abstract concepts (e.g., mathematics; Piaget & Inhelder, 1969/2008). Moreover, Piaget noted intelligence (in addition to cognitive capabilities) progresses in a manner parallel to the aforementioned developmental stages, with intelligence advancing during the concrete operational phase (Piaget, 1950/2003).

Although Piaget's child development framework was influential in that, it helped researchers better understand the cognitive progression in children's understanding of the world, a number of researchers began critiquing his work (Kesselring & Muller, 2011; Vygotsky, 1980/1978). For example, Vygotsky was another prominent developmental psychologist who often critiqued Piaget's research. Specifically, Vygotsky claimed Piaget described the acquisition of knowledge as a more individual process; contrarily, Vygotsky asserted the acquisition of knowledge is a social process; in other words, mature cognitive functioning is culturally mediated (Cole & Wertsch, 1996). Under this perspective, culture does not create a new behavior in the child beyond their genetic predispositions, but instead, transforms their development, which ultimately impacts their psychological development and behavior (Vygotsky, 1929).

Additionally, several criticisms have been made against Piaget's notion of egocentrism (Kesselring & Muller, 2011). For example, many contend Piaget's concept of egocentrism

implies that very young children are asocial. Additionally, his understanding of egocentrism focuses mainly on spatial capabilities (Kesselring & Muller, 2011; Rubin, 1973). Of course, proponents of Piaget's framework insist he acknowledged the symbiotic relationship between the environment and infant (Kesselring & Muller, 2011).

In addition, egocentrism has been understood as a concept related to perspective-taking abilities (Flavell et al., 1968). Piaget's conceptualization of decentering has been described as a cognitive function that progresses during the operational phase, is understood through quantitative factors such as time and numbers, and is measured by concrete, physical tasks (Feffer & Gourvitch, 1960; Feffer & Suchotliff, 1966; Leeper, et al., 2008). Furthermore, Piaget and Inhelder (1956) understood perspective-taking abilities as a process concerned with how objects literally appear to another individual from a different viewpoint. On the other hand, Flavell (1968) understood perspective-taking abilities as psychological processes (i.e., an individual's thoughts and motivations; Rubin, 1973). The concept of egocentrism and perspective-taking (or decentering) was further expanded by Melvin Feffer. Specifically, Feffer (1959) considered perspective-taking/decentering in an interpersonal context. For example, Feffer (1970) noted how the concept of centration (i.e., a child's inability to change their attention from one perspective of an object to another) can also be applied in a social context to better understand interpersonal interactions (Rubin, 1973).

Though proponents of Piaget's developmental framework argue that he considered the social and affective aspects of egocentrism or perspective-taking capacities, there were a number of concepts that were not totally considered. For example, during the concrete operational stage, children start to express logical thought patterns (Piaget, 1950/2003). More importantly, it is during this stage that the child begins to understand the concept of mutual respect and

perspective-taking. Proponents of Piaget's developmental framework add that this ability is further supported and expressed when children play games that have explicit rules. Although interpersonal aspects are considered in this framework, there is a lack of focus on perspective-taking abilities in an interpersonal context where explicit rules are not applied or readily available. In other words, children playing a game are guided by the rules and explicit social expectations within the context of the game in which they are involved. However, in other interpersonal contexts (e.g., group conversations, interactions between family members, interactions between friendship groups) social "rules" might not be as explicit. Not having explicit rules where each individual understands their role, others' roles, and how to respond to each rule creates a fluid and unpredictable environment. Thus, having the ability to gauge how oneself and others are thinking and feeling helps alleviate some of that unpredictability in dynamics where explicit rules are not readily available.

Ultimately, previous methods used to understand perspective-taking abilities relied on physical objects or on the observation of children engaging in social activities that had explicit rules or guidelines. Although Piaget's concept of perspective-taking at times acknowledged how interpersonal contexts like games can impact children's development (specifically, moral development), his conceptualization of decentering ultimately maintained an asocial perspective. Accordingly, Feffer (1959) extended the conceptualization of decentering beyond cognitive functioning by highlighting how decentering manifests throughout the lifespan, and how it influences different interpersonal dynamics.

All in all, the aforementioned frameworks have both influenced and transformed child development theory and research. For example, psychodynamic frameworks emphasize the impact early childhood experiences and child-parent bonding has on attachment and lifespan

development, particularly through theories like psychosexual development, attachment theory, and object relations. Social learning theory highlights the importance of a child's familial and societal environment, and adding onto this concept are cognitive theories, which underscore the significance of the child's interpretation of environmental stimuli. Although psychodynamic and social learning theories highlight the impact of child-parent bonds, familial relationships, and general social contact on lifespan development, not much is known about parental and child gender in bonding and decentering. Specifically, not much is known about how familial conflicts impact the relationship between the early parent-child bond and the child's mature decentering in adolescence, whether particular personality characteristics in maternal or paternal figures impact this relationship, or what aspects of paternal attachments to sons might also impact this relationship. Accordingly, it is important to consider that, when observing these issues, decentering is best understood within a social context.

Feffer's Interpersonal Approach to Decentering

Feffer (1959) expanded on Piaget's theories, and discussed decentering within the social context, defining the skill as an individual's ability to consider their own behavior from more than one perspective within a social context; this capability is also referred to as mature ideation or mature thought (Feffer & Jahelka, 1968; Feffer & Suchotliff, 1966). Understanding decentering or perspective-taking abilities is a topic better examined through a social-cognitive lens. Social cognition refers to a person's or child's understanding of their social environment, of themselves, and of others' beliefs, intentions, wants, needs, and emotions (Carpendale & Lewis, 2010). Ultimately, social-cognitive theories are based on two divergent concepts: individualistic and relational; with relational being the most appropriate in examining a child's development.

When conceptualizing decentering through a relational lens, it is important to recognize how the bond between the parent and child plays a sizeable role in the child's social-cognitive development. For example, as previously mentioned, a study found infant boys who had strong bonds with their fathers demonstrated more mature decentering by early adolescence than did boys with less strong bonds with their fathers (Fincher, 2012). Moreover, Enright and Lapsley (1980) examined psychometric aspects of social role-taking. They define role-taking constructs to refer to a person's ability to step into "the other's shoes" (Enright & Lapsley, 1980, p. 649). Since this concept involves both a person's thoughts and feelings, conceptualizing role-taking by understanding both the cognitive and affective states is important. Accordingly, Enright and Lapsley (1980) emphasized that Feffer and Gourevitch's (1960) projective role-taking task (RTT) is helpful in both measuring the cognitive and affective responses of a child participant, thus, making it an effective tool for measuring perspective-taking.

According to Feffer (1959), decentering is an interpersonal skill which requires an individual to consider and modify their behavior, as well as consider more than one perspective simultaneously (Feffer & Suchotliff 1966). Moreover, mature ideation involves an individual's capacity to consider multiple aspects of an interpersonal situation at the same time (Feffer & Suchotliff, 1966). Accordingly, measuring the social domains of decentering requires the administration of storytelling assessment instruments as opposed to self-report measures. For example, using self-report measures can be helpful in that they are quick and easy to administer; however, participants can unintentionally provide inaccurate answers, misunderstand important terms and definitions, or intentionally provide inaccurate answers to be perceived in a particular light (Chan, 2010). Ultimately, narrative-based measures are challenging to manipulate since they rely on a participant's story as opposed to responses to distinct questions (Feffer, 1959).

As previously mentioned, Feffer (1959) conceptualized decentering in relation to interpersonal settings that go beyond the physical world. Accordingly, measuring a child's ability to decenter (in an interpersonal context) differs from the measurements used by Piaget (Feffer & Suchotliff, 1966). Specifically, the narrative based Role-Taking Task (RTT) has been utilized to better understand how an individual's behavior is modified when anticipating someone else's reaction to the individual's behavior (Feffer & Suchotliff, 1966). Subjects administered the RTT are required to make up initial stories when presented with three different pictures that present an ambiguous scene of people. After the subjects complete their story, they are presented with the same ambiguous scene again, and are asked to recount their initial story, but from the viewpoint of each of the characters in the presented scene (Feffer & Suchotliff, 1966). This method is meant to examine the subject's capacity to explain the different perspectives of each character while maintaining continuity between the different versions of their initial story. These changes in perspective are illustrative of the individual's cognitive role-taking or decentering abilities (Feffer & Suchotliff, 1966). In short, the RTT method is used to better understand, define, and measure decentering within an interpersonal context through storytelling. Self-report measures, on the other hand, rely on an individual's ability to recognize their perspective-taking skills. Although self-report measures can be helpful in certain contexts, individuals might falsify (intentionally or unintentionally) their ability to decenter. Thus, storytelling assessment methods can be useful in gaining a genuine understanding of subjects' mature decentering since they are asked to interpret an interaction as opposed to reflect on their own interactions (Feffer, 1959).

In addition to the RTT, the Thematic Apperception Test (TAT) can be used to identify individuals' mature decentering (Feffer & Jahelka, 1968). To expand, Feffer and Jahelka (1968) examined the usefulness of the TAT in measuring perspective-taking abilities among

participants. The participants were given a TAT card (which consisted of illustrations of two or more human figures in an ambiguous situation) and were told to tell a story, then retell this story from the viewpoints of the figures within the TAT card using the RTT method. The results showed that role-taking is a function of decentering, that decentering maturity level can be scored reliably from the participants' initial story performance, that the two scores are strongly related, and that their subsequent role-taking scores are not determined by a randomly assigned initial story (Feffer & Jahelka, 1968). The present-day scoring manual (Feffer et al., 2008) was developed from the new manual for the initial story.

Moreover, Jenkins et al. (2020) utilized the TAT to examine mature decentering among men and women who were shown heterosexual romantic-pull pictures and nonromantic pictures. In another study, Jenkins et al. (2015) examined decentering competencies among perpetrators of violence, victims/survivors of domestic violence, and other clinic clients. The authors scored interpersonal decentering from archival Thematic Apperception Test protocols to examine decentering abilities among participants. They found that perpetrators of violence were less inclined to engage in mature decentering than other clients. Conversely, those with non-problematic relationships and domestic violence survivors engaged in more spontaneous mature decentering processes (Jenkins et al., 2015). The findings suggest that domestic violence survivors might be more likely to engage in perspective-taking processes as a way to anticipate their partner's emotions, so as to avoid or reduce conflict (Jenkins, et al., 2015).

Additionally, Jenkins et al. (2022) evaluated the conceptualization of interpersonal decentering as a social information processing construct. The results showed that interpersonal decentering reflects activated and emotionally charged social information processing associated with stressful events. Lastly, Westen et al. (1990) administered the TAT to measure object-

relations and social cognition among individuals with borderline personality and major depression. The results indicated the TAT is an effective measure in identifying object relations and social cognition, particularly among a clinical sample.

Attachment Theory and Parental Bonding and Their Influence on Decentering

Attachment theory and parental bonding have often been used synonymously in developmental research. For instance, many studies that examine early attachment relationships and adult psychopathology, lifespan development, or adolescent behavior have utilized parent-child bonding questionnaires such as The Parental Bonding Instrument (PBI; Parker et al., 1979), to measure attachment (Mathews et al., 2016; Matsuoka et al., 2006; Wilhelm et al., 2016). Additionally, the two concepts highlight how relationships in early life can influence child development (Ettenberger et al., 2021). Although there is some overlap with attachment and bonding, there are significant differences.

Attachment theory emphasizes the influence early social interactions with caregivers have on a child's interpersonal development (Ainsworth, 1978/2015). In other words, attachment is a process that describes how relationships grow and mature during childhood, and how they impact interpersonal relationships throughout the lifespan (Ainsworth, 1978/2015; Bowlby, 1988/2008). Particularly, infants experience social interactions with their caregiver and subsequently store emotional expectations and experiences, memories, and personal narratives in their internal working model (Nelson, 1999). This in turn influences the way in which the infant regulates their emotions and develops a theory of mind (ToM; Steele, 2004). Such developments ultimately influence how the infant later interacts and relates to others in various social contexts (Steele, 2004). All in all, attachment theory underlines the importance of understanding children's perspective-taking abilities through an interpersonal lens.

Several studies highlight the relationship between attachment style and perspective-taking abilities (e.g., theory of mind). For example, Fonagy et al. (1997) administered a projective measure known as the Separation Anxiety Test to examine attachment security. He found securely attached children exhibited more competent skills on theory of mind tasks than children who were insecurely attached. Regarding young children, Meins (1997) examined children from age 11 to 13 months and found that those who were securely attached from age 11 to 13 months were more likely to pass a false belief task (a type of perspective taking task showing that the child understands that another person does not have the knowledge they possess) at age four years than children with insecure attachments. Meins et al. (2001) suggested secure attachments are positively associated with mature social cognitive capabilities because secure parents respond sensitively and consistently to their children's needs. Furthermore, this requires the parent to model perspective-taking behaviors. In other words, the parent must be able to understand their child's thoughts and feelings, and in doing so, is communicating to their child how to form appropriate social connections (Meins et al., 2001).

Parent-infant bonding, on the other hand, was first discussed in the 1970s by Marshall H. Klaus and John H. Kennell, both of whom were pediatricians (Ettenberger et al., 2021). Both Klaus and Kennell (1976) were curious about early separation between mothers and infants, and whether prolonged separations would impact the mother-infant relationship. Accordingly, they conducted a study where they compared mother-infant relationships between mothers who had additional physical contact with their newborns and control mothers (mothers who did not have additional physical contact with their newborns). The findings showed the mothers who had prolonged physical contact with their newborns reported more protective and interactive behaviors, as well as higher maternal abilities compared to control mothers (Klaus & Kennell,

1976). This finding inspired the examination of parent-infant bonding (particularly mother-infant bonding) and the impact it has on maternal competencies and infant/child development (Ettenberger et al., 2021). Specifically, the implication is, if there is a sensitive period where mothers and infants can establish strong emotional bonds, this can foster optimistic development for the child; and if the bonding process is absent or inadequate, this can increase the risks for negative maternal feelings or behaviors which subsequently can negatively impact the child's development (Klaus & Kennell, 1976).

All in all, both attachment and parental bonding emphasize the importance of early relationships and their potential impact on child development. Although there is some overlap, the two concepts do differ in that, attachment theory helps explain how a child forms a relationship with their parent or caregiver, whereas the bonding theory helps describe the parent's feelings, thoughts, and behaviors toward the infant (Ettenberger, et al., 2021).

Moderators of the Development of Mature Decentering Skills

Family Dynamics and Decentering Skills

Several researchers note it is adaptive for children to comprehend others' behaviors (Symons & Clark, 2000). Specifically, Fonagy and Target (1997) asserted children's perspective-taking abilities are rooted in the familial social context. Additionally, Dunn (1991, 1995) stated families foster a child's understanding of the mental states and behaviors of other individuals. In other words, family dynamics (e.g., stability, conflict, interpersonal violence) can play a sizeable role in the development of perspective-taking abilities.

Regarding familial relationships, some studies have examined individuals' perspective-taking abilities within the context of sibling relationships. For example, Stewart and Marvin (1984) found that older siblings who were able to make inferences about another person's point

of view were more likely than those who maintained more “egocentric” inferences to engage in caregiving activities. Furthermore, children who had a younger sister showed increases in their social skills in the span of one year compared to those who were the only child (Sang & Nelson, 2017).

In addition to sibling relationships, Symons and Clark (2000) examined mother-child relationships and its contribution to the child’s development of false belief task skills (the perspective taking ability where the child understands another person does not have the knowledge they possess) during preschool. The authors administered the Maternal Behavior Q-sort, The Attachment Behavior Q-set, as well as several other self-report measures to collect information on maternal emotional distress, anxiety, depression, child temperament, and the parent-child relationship. The authors also utilized the Caregiver Location Task to measure ToM. The location task involves a script where a character is with their mother engaging in an activity (gardening). The mother leaves for a moment to find a hose she states is behind the house, but soon realizes is in another location. The participants are then asked several questions about the narrative that test false beliefs and emotional justification, such as predicting what the main character will do next, where the main character will look for their mother, and how the main character feels. The findings suggested children who scored higher on caregiver location tasks at age five had mothers who reported being more sensitive when the child was two years of age.

Interestingly, children who passed this task at age five were also more likely to have mothers who reported higher emotional distress when the child was age two (Symons & Clark, 2000). Symons and Clark (2000) noted that one possible reason why emotional distress was associated with higher caregiver location scores is because anxious parents tend to ruminate out-loud to their children. Specifically, these parents spend significantly more time discussing what

they and others are thinking, albeit, in an anxious manner; this, according to Symons and Clark (2000) is a form of mentalizing. Although the literature has examined the relationship between parenting or familial dynamics and perspective-taking abilities, little is known about these variables and gender in decentering. Additionally, measures like the Caretaker Location Task were used in previous studies, as opposed to narrative measures like the TAT.

Ultimately, distress within familial dynamics or familial instability could play a role in mature decentering. In other words, parents and children who want to maintain their bonds might engage in perspective taking behaviors, and if they want to reduce familial distress, this relationship between parent-child bonding and decentering could strengthen.

Personality Traits and Behaviors and Decentering

There is a dearth of research examining specific behaviors, personality traits, and mature decentering. Specifically, there is limited research that examines a child's tendency to engage in imaginative play and their perspective-taking capacities, and little to no research on introspection (i.e., introversion or one's tendency to recognize their own emotional state) and their perspective-taking abilities. Although limited, prior research has found a correlation between imaginative play and perspective-taking. For example, Peisach and Hardeman (1985) found that five- and six-year-old children who engaged in imaginative play showed stronger social perspective-taking skills than those who did not. Moreover, they found sex differences in play patterns. First, four-year-old boys showed higher conjunctive language scores than same-aged girls; second, the results showed that six-year-old girls had higher imaginative play scores than six-year-old boys; third, six-year-old boys had higher spatial viewpoint scores than same-aged girls, and girls at this age had higher scores in the social viewpoint items compared to same-aged boys (Peisach & Hardeman, 1985). In this study, imaginative play was measured by an

observation procedure where an Imaginative Play Work Sheet was used to record the content, frequency, and length of the child's imaginative behavior, which was defined as the type of play in which the child engaged, the degree of closeness the play behaviors were to real-life circumstances, the attribution of human characteristics to animals, using objects to represent something else, simulated communications, and role-playing (Peisach & Hardeman, 1985). Furthermore, children were also interviewed and asked four of the following questions: (1) Favorite game; (2) What game is enjoyed best alone; (3) Are there ever pictures in your head? (4) Is there a presence of a make-believe friend? (Peisach & Hardeman, 1985, p. 235-236).

Another study conducted by Tan-Niam (1992) found that thematic fantasy play produced beneficial outcomes for perspective-taking skills among preschool children. In this study, thematic fantasy play sessions were observed, and this included the child engaging in make-believe object use, actions, or role-play (Tan-Niam, 1992). This type of play allows children to experience a perspective that is different from their own, learn social rules and behaviors, and since they are acting out different roles, they are expanding their awareness of other people's feelings, thoughts, and visual perspectives (Tan-Niam, 1992). Although the findings of the prior research are compelling, they are limited in that they did not consider how play among fathers and their children impact their child's development, especially sons. Some research has acknowledged the importance of rough and tumble play, and that fathers and sons frequently engage in such play (Paquette, 2004) This is important since boys and men tend to engage in more physical play as a way to bond (Jacklin et al., 1984; MacDonald & Parke, 1986). Accordingly, it is important to consider how a child's health status (particularly, a son's health status) might influence the relationship between father-son bonds and the child's mature decentering later in life.

The Impact of a Child's Health Status on the Bonding-to-Caregiver and Later Decentering Association

Parental bonding between the caregiver (e.g., mother, father) and child often involves various styles of play, all of which can influence a child's capability to regulate their emotions and recognize others' emotions (Paquette, 2004). For instance, mothers tend to engage in role-playing, whereas fathers engage more often than mothers in physical play, especially with sons (Jacklin et al., 1984; MacDonald & Parke, 1986). In fact, rough and tumble play is considered a vital form of social learning for children (Paquette, 2004). To illustrate, Youngblade and Belsky (1992) found that children who had positive play interactions with their fathers at age three exhibited more positive interaction with peers two years later compared to children who did not have such positive interactions with their fathers. Moreover, children ages three to four years who engaged in high levels of physical play with their fathers were rated as popular among their peers (MacDonald & Parke, 1984). Such findings suggest that paternal-child play may cultivate a child's ability to decode others' emotional states and signals (Carson et al., 1993). Although these studies highlight the benefits of physical play, there is limited research that analyzes to what degree might a child's health status impact their ability to participate in physical play and thus not obtain its social-cognitive development benefits. Specifically, it is worth exploring if the decrease in a child's health status reduces the relationship between strong father-son bonds at 21 months and more mature decentering scores at age 12.5 and 18 years.

Few studies explore the relationship between health impairments or disabilities and perspective-taking. Instead, some researchers observed learning disabilities and decentering. For example, Horowitz (1981) examined children with reading and/or math disabilities and their capacity to decenter compared to children with no learning disability. Children with emotional and/or disciplinary challenges were excluded in this study. Feffer's Role-Taking Task was

administered to assess each child's ability to engage in perspective-taking of each character in the administered stories. As predicted, Horowitz (1981) found children with a learning disability performed less well on the interpersonal decentering task compared to their peers without a learning disability.

All in all, moderating factors like physical disability status have not been studied much in relation to decentering, particularly among boys. Given that fathers and boys more frequently engage in rough and tumble play and that prior research indicates such forms of play help foster perspective-taking abilities, one can consider how physical disabilities might impact the relationship between the parent-child bond and decentering development, particularly among boys and fathers. Exploring this not only helps expand decentering research, but it might shed light on how fathers can form stronger bonds with their child who has a physical disability, and potentially foster more mature decentering skills.

Gender and Decentering

Different theoretical frameworks consider gender roles and expectations to be influenced by social factors (Leaper & Friedman, 2007). Specifically, since boys and girls often experience distinctive social expectations on how and which emotions to express, empathy, and familial roles, gender differences in empathy and theory of mind (ToM) are typically explored in developmental research. Accordingly, most developmental research has explored gender differences in concepts related to decentering like empathy (i.e., one's capacity to understand others' emotions; Karniol et al., 1998) and ToM (reasoning about others' mental states, intentions, and knowledge; Birch et al., 2016). However, there is limited research on gender differences and decentering processes.

According to the social-interactive framework (Leaper & Friedman, 2007) gender

differences are heavily influenced by one's cultural gender roles and expectations. For example, women are encouraged to engage in activities like being a caregiver or participating in domestic responsibilities. Such expectations can influence the type of play in which children are involved. For instance, female children are encouraged to play with baby dolls and are encouraged to care for them, which could expand interpersonal qualities like empathy (Leaper & Friedman, 2007). Interestingly, regarding empathy and gender roles Karniol et al. (1998) examined whether gender or gender role orientation predicted empathy (i.e., perspective taking, empathic concern, and personal distress) in adolescents. They found boys showed lower empathy scores than girls, that femininity and empathy were positively correlated, and that masculinity was not negatively correlated to empathy. Accordingly, the researchers concluded gender-role orientation contributes to empathy.

In addition to studies that explored gender differences in empathy, some developmental studies examine gender differences in ToM. For example, Laranjo et al. (2010) examined parent-child attachment and gender differences in ToM. Specifically, the authors analyzed the relationship between a mother's expressed mind-mindedness (i.e., a caregiver's propensity to perceive the child as an individual) with their male or female child and the child's ToM capacity (i.e., visual perspective taking). Moreover, mature visual perspective-taking is when a child appreciates that an object can present differently to two different individuals (Moll & Meltzoff, 2011). Interestingly, Laranjo et al. (2010) found that more securely attached boys, but not girls, showed better performance on a task involving comprehending their mothers' visual perspective, particularly with mothers who expressed mind-mindedness communication more often. Another study found that paternal mind-mindedness was positively correlated with ToM performance for both female and male preschool children (Lundy, 2013).

Ultimately, child development studies examining gender differences frequently focused on concepts related to decentering like empathy and ToM, but not on interpersonal decentering itself. Given the relatedness across topics, the findings warrant further research on gender and decentering. Additionally, it is unclear what levels of mature decentering across the lifespan look like in males and females, and whether various factors like one's play behavior, personality characteristics, familial dynamics, or physical functioning play a role in potential differences in levels of mature decentering.

Present Study

The current study expands on prior research concerning parent-child bonds and the development of decentering among children. Specifically, unique moderators were examined to further understand parent-child bonds and later social cognitive development specifically between boys and their fathers since developmental research is severely lacking in better understanding paternal bonds. However, little is known about how familial dynamics, behavior and personality, and physical impairments might impact the pathway from parent-child bonds in infancy to mature decentering in adolescence, especially among boys and men.

The current study used the longitudinal Berkeley Guidance Study data gathered by the Institute of Human Development located at the University of California, Berkeley. The Institute of Human Development (formerly known as the Institute of Child Welfare) in Berkeley, California was established in 1927. The institute worked closely with psychology students in the University of California, Berkeley and maintained a nursery school where child developmental studies took place. Accordingly, during 1928 to 1929, two of three longitudinal studies were instigated: the Guidance Study and the Berkeley Growth Study; only the former is included in the current paper.

To better understand the findings of Fincher (2012), the present study examined five moderator variables related to the development of decentering. First, familial conflict is hypothesized to moderate the relationship between the strength of the parent-child bond at 21 months and the maturity of the adolescent's interpersonal decentering at age 12.5 and 18 years. That is, among families with high conflict with relatives, boys and girls who have stronger bonds with their father or mother at age 21 months will show more mature decentering at age 12.5 and 18 years, compared to children in families with less familial conflict, for whom this longitudinal association will be weaker. One study conducted by Gryczkowski et al. (2017) examined both mothers' and fathers' parenting styles and children's prosocial behaviors, and whether age, sex, and ethnicity moderated this relationship. The researchers found that all demographic variables moderated the relationship between parenting styles and children's prosocial behaviors. In particular, White mothers with more positive parenting styles had children who expressed more prosocial behavior, whereas African American mothers with more positive parenting styles had children who presented less prosocial behaviors (Gryczkowski et al., 2017). Additionally, Gryczkowski et al. (2010) found that a parent's and/or child's sex moderated the relationship between parenting involvement and children's externalizing behavior. Specifically, higher levels of poor parental supervision from both mothers and fathers were associated with higher levels of externalizing behaviors among girls and not boys (Gryczkowski, 2010).

Although moderators have been considered in parent-child relationships, studies have examined moderators for maternal parenting and adverse adolescent behavior, and most studies have examined demographic moderators in parent-child relationships and child behavioral outcomes, with few examining moderating variables like familial conflict on parent-child bonds

and decentering. It is important to note that the aforementioned studies utilized self-report measures as opposed to the TAT.

Second, a parent's nervous instability is hypothesized to moderate the relationship between the strength of the parent-child bond at 21 months and the maturity of the adolescent's interpersonal decentering at age 12.5 and 18 years. That is, among children of parents with high levels of nervous instability, boys and girls who have stronger relationships with their parents at 21 months will show more mature decentering at age 12.5 and 18 years, whereas those with parents who have low nervous instability will have a weaker longitudinal association between bonds in infancy and adolescent decentering. Most previous studies have examined parental stress (particularly maternal stress) and socioeconomic status as moderators for disruptive behavior in children and lower treatment efficacy for attention disorders and oppositional behaviors (Barry, et al., 2005; Rieppi et al., 2002). For instance, Barry et al. (2005) conducted a longitudinal study examining the moderating role of maternal stress on low socio-economic status families and disruptive behavior in boys during adolescence. As mentioned above, few studies have explored familial and parent-child dynamics in relation to perspective-taking abilities, and even fewer have considered paternal influences.

Third, a son's skilled imaginative play is hypothesized to moderate the relationship between his bond with his father at age 21 months and his decentering maturity at age 12.5 and 18 years. That is, among sons who are more engaged in skilled imaginative play, their bonds with their fathers at 21 months are stronger predictors of their adolescent decentering maturity than for sons who engage in less skilled imaginative play. Though limited, some studies have shown that children who engage in imaginative or fantasy play show stronger social perspective taking abilities compared to children who do not engage in imaginative or fantasy play (Peisach

& Hardeman, 1985; Tan, 1992). However, there is limited research on how play might impact the relationship between father-infant son bonds and more mature decentering in adolescence. In other words, it is unclear whether more imaginative play results in a stronger or weaker relationship between early bonds and more mature decentering in adolescence.

Fourth, a son's tendency toward introspection is hypothesized to moderate the relationship between his bond with his father at age 21 months and his decentering maturity at age 12.5 and 18 years. That is, among more introspective sons, their bonds with their fathers at 21 months are stronger predictors of their adolescent decentering maturity than for less introspective sons. I found no studies that examined introspection in relation to interpersonal decentering.

Lastly, a son's impaired physical ability is hypothesized to moderate the relationship between strong father-son bonds at 21 months and the son's maturity of decentering at age 12.5 and 18 years. That is, the healthier the son, the stronger the relationship between the father-son bond in infancy and decentering maturity in adolescence, compared to sons with relatively poorer health, for whom this longitudinal association will be weaker. Past research findings on paternal play and social interactions suggest that father-son play often involves physical contact (i.e., rough and tumble play), and this may influence the relationship between parent-child play styles and a child's capacity to decode others' emotions or regulate their own later in life (Carson et al., 1993). In fact, Flanders et al. (2009) found that rough and tumble play frequency was associated with higher levels of physical aggression in children who had fathers who reported less dominance, however, this relationship was moderated by the degree to which the father was a dominant playmate. Although compelling, there is still limited research on how physical health

might influence the relationship between father-son bonds in infancy and adolescent mature decentering.

Accordingly, the following five hypotheses were tested:

Hypothesis 1: More familial conflict will moderate the relationship between the strength of the parent-child bond at 21 months and the maturity of the adolescent's interpersonal decentering at age 12.5 and 18 years. Specifically, in families with high conflict with relatives, boys and girls who have stronger bonds with their father or mother at age 21 months will show more mature decentering at age 12.5 and 18 years compared to children in families with less familial conflict, for whom this association will be weaker.

Hypothesis 2: More parental nervous instability is expected to moderate the relationship between the strength of the parent-child bond at 21 months and the mature decentering of adolescents at age 12.5 and 18 years. That is, in children of parents with high levels of nervous instability, boys and girls who have stronger relationships with their parents at 21 months will show more mature decentering at age 12.5 and 18 years, whereas those with parents who have low nervous instability will have a weaker longitudinal association between bonds in infancy and adolescent decentering.

Hypothesis 3: A son's higher engagement in skilled imaginative play is expected to moderate the relationship between his bond with his father at 21 months and his decentering maturity at age 12.5 and 18 years. Specifically, among sons who are more engaged in skilled imaginative play, their bond with their father at 21 months is a stronger predictor of their adolescent decentering maturity than for sons who engage in less skilled imaginative play.

Hypothesis 4: A son's tendency toward introspection is expected to moderate the relationship between his bond with his father at 21 months and his decentering maturity at age

12.5 and 18 years. That is, among more introspective sons, their bonds with their fathers at 21 months are stronger predictors of their adolescent decentering maturity than for less introspective sons.

Hypothesis 5: A son's physical ability is hypothesized to moderate the relationship between strong father-son bonds at 21 months and the son's maturity of decentering at age 12.5 and 18 years. Specifically, the healthier the son, the stronger the relationship between the father-son bond in infancy and mature decentering in adolescence compared to sons with relatively poorer health for whom this association will be weaker.

Methods

Participants

The Guidance Study was directed by Jean W. Macfarlane and included infants ($N = 248$) born to parents who resided in Berkeley, California (Eichorn et al., 1981). Participants for the Guidance Study (GS) were selected from a socioeconomic survey of every third birth in Berkeley, California between January 1, 1928, and June 30, 1929 (Eichorn et al., 1981).

The study was longitudinal, and ultimately focused on personality and parent-child relationships from early childhood to adolescence (i.e., age 18 years) and then again at age 30 (Eichorn et al., 1981). Data collection at the Institute of Human Development (IHD) or in home visits began when the child participants were 21 months old. These participants were assessed every six months from age two to four years, then annually assessed from age five to 18 years.

The sample was randomly assigned to one of two groups: (1) Guidance Group ($n = 124$) or (2) Control Group ($n = 124$); both groups were matched for sex, family size, family income at birth, father's occupation, neighborhood, age, education, nativity, and ethnic background of parents (Eichorn et al., 1981). Since the Guidance group's data included variables of interest that

were unavailable for the Control group, only the Guidance group's data were used for this study. Given the sample was selected from a university community, the GS sample differed from the United States population in that infant mortality rates were lower, and parents of the child participants maintained above average education. Nearly all were White (Eichorn et al., 1981). The effective sample size for this study varied with each instrument used at each wave. The maximum sample size for the present study is $N = 105$. Some participants in the study have data on one instrument, and other participants lack data on other instruments. For example, some participants have health record data but no psychological data, and others have psychological data, but no consistent health records, which presents challenges for attrition analysis. The full attrition analysis is shown in the results section.

Procedures

Comprehensive demographic and socioeconomic data at the time of the child participant's birth were gathered through interviews conducted by trained professionals in economics and social work. The child participants' pre- and perinatal data were gathered from mothers, physicians, and hospitals by a public health nurse. Specifically, a survey of pre-natal, natal, and post-natal conditions were developed and administered in January 1928 to June 30th, 1929 (Eichorn et al., 1981). Information collected from this sample included economic and social background of families, care provided to the mother and infant, as well as the infant's development.

Design

Specific moderating variables were examined to better understand the relationship between parent-child bonds at 21 months (with an emphasis on father-son relationships) and more mature decentering by age 12.5 and 18 years. Conflict with relatives, parental nervous

instability, skilled imaginative play, introspection, and the child's health status were examined to better understand the relationship between parent-child bonds and the child's mature decentering abilities. Given the study is archival and longitudinal, attrition and missing data are limitations.

Measures

Parental Relationships/Attachment (G8400 Parent Family Situation)

The Guidance Study parents (typically the mothers) were interviewed by a researcher and social worker when the child participants were 21 months old. To measure parent-child relationships, the close bond to mother and close bond to father self-report scale items were studied. The maternal ($N = 105$) and paternal ($N = 104$) parent-child bonds were measured using the following 5-point scale: 1 = *extremely close relationship, friendly*; 2 = *closer than average*; 3 = *taken for granted*; 4 = *little real attachment, few confidences*; 5 = *no attachment or interest* ("Parent Family Situation," n.d.).

Early Parental Ratings and Clusters (G8400 Parent Family Situation)

Social class (SES) was originally divided into the following five separate groups: 1. upper upper ($n = 17$), 2. middle upper ($n = 22$), 3. lower upper ($n = 26$), 4. upper upper middle ($n = 23$), 5. middle upper middle ($n = 9$). The first three classes were grouped together and labeled upper class, and the last two were grouped together and labeled middle class to simplify the dataset. The SES variables were transformed on SPSS and recoded as the following: middle class = 1 and upper class = 2.

Guidance study parent participants (typically mothers) were interviewed by Macfarlane and a social worker when the participants' children were approximately 21 months old. There are a total of 75 variables, all of which were rated on a 5-point or 7-point scale. The current study

focused on parental ratings conducted by researchers of conflict with relatives ($n = 101$), mother's nervous instability ($n = 105$) and father's nervous instability ($n = 105$).

Conflict with relatives measures interpersonal compatibility among family members as measured by researchers. The familial conflict ratings are as follows: 1 = *great companionability, happy relationship, no conflict*, 2 = *enjoys relatives, contribute to happiness*, 3 = *smooth exterior, occasional annoyance at minor details*, 4 = *considerable stress and strain chronically present*, 5 = *serious conflict or strain, open hostility* ("Early Parental Ratings and Cluster," n.d.).

Nervous instability measures a parent's emotional stability. The ratings are as follows: 1 = *exceptionally stable, very even keel in face of most trying circumstances*, 2 = *markedly above average*, 3 = *above average*, 4 = *average, occasional upsets in response to trying situations*, 5 = *excitable, tense, overactive, sullen, extroverted, or exaggerated reactions*, 6 = *neurotic, alcoholic, prostitutes, or very eccentric personalities which interfere with work or social adjustment*, and 7 = *psychotic episodes, or equivalents* ("Early Parental Ratings and Cluster," n.d.).

Adolescent Q-Sort (G502C.070 Adolescent Core Q-Sort, Composites)

Q-Methodology¹ was developed by William Stephenson, and is a method used to form a comprehensive subjective evaluation of an individual that is constructed by a trained observer (Block, 1961). The Q-sort for personality characteristics consists of descriptive items like "initiates humor" or "is turned to for advice and reassurance" to assess an individual's current

¹ The Q-sort items (i.e., introspection and skilled imaginative play) are placed in a forced normal distribution of nine categories. Scores ranging from one to three denote behaviors least representative of the participant; scores four through six denote characteristics that moderately represent the participant; lastly, scores seven through nine denote characteristics that most represent the participant (Block, 1961).

personality functioning (Block, 1961, pp. 9-10). The Q-sort items are placed by the sorter in a forced normal distribution comprised of nine categories. Scores ranging from 1 to 3 denote behaviors least representative of the participant; scores 4 through 6 denote characteristics that moderately represent the participant; lastly, scores 7 through 9 denote characteristics that most represent the participant (Block, 1961). The Q-sort takes an ipsative approach in that each item is judged relative to the participants' other personality characteristics, as opposed to the participant being compared to others using a normative variable like age or sex (Eichorn et al., 1981). In the current study, the original California Q-sort for personality characteristics was used.

The current study used the Adolescent Q-sort, which contains 90 items parallel to Adult Core Q-sort items. The Adolescent Q-sort was administered only to Guidance Study participants in early childhood ($n = 102$), late childhood ($n = 100$), early adolescence ($n = 73$), and late adolescence ($n = 66$). The current study utilizes the early and late adolescent Q-sort samples (age 12.5 and 18 years).

The current study examined two Q-Sort items: the child's skilled imaginative play and level of introspection. Skilled imaginative play describes the child as "skilled in social techniques of imaginative play, pretending, and humor" ("Adolescent Q Sort Composites," n.d.). Introspection is conceptualized as the child's ability to "perceive themselves as an object" ("Adolescent Q Sort Composites," n.d.).

Average Health Ratings (A1730; G1707:18.A)

To examine the overall health of Guidance Study participants, two physicians rated participants on their overall physical health based on a 5-point scale: 1 = *excellent health*, 2 = *good health*, 3 = *fair health*, 4 = *poor health*, and 5 = *bad health*. Their scores were then averaged for each participant. The participants were rated by Guidance Study physicians over

two time periods: (1) 5 to 10 years ($N = 105$; boys $n = 51$) and (2) 11 to 17 years ($N = 103$; boys $n = 50$).

Thematic Apperception Test (TAT)

The TAT (Morgan & Murray, 1935; Murray, 1943) is a narrative assessment measure that examines a participant's cognitions, attitudes, emotional response, and perspective-taking capacities via stories they tell about a series of pictures. Each card consists of black and white pictures that depict human figures in varied contexts. The examiner exposes the participant to a single card and inquires what the participant observes, what led up to the observed situation, what thoughts and feelings are the human figures experiencing, and finally, what is the outcome of the event being described. The Guidance Study participants were administered an early version of the TAT semiannually from age 9.5 to 18 years (Eichorn et al., 1981) using the standard directions for storytelling in the Thematic Apperception Test (TAT) cards (Murray, 1943). At age 12.5, the cards administered were the following: M16, 4, 1, 5, M18, F15, 9, and M11. At age 18 years, only two cards were administered, which were M18 and F15 (Eichorn et al., 1981). The current study examined data for children at age 12.5 years ($n = 73$ who also had data on the variables of interest) and 18 years ($n = 51$).

Interpersonal Decentering

The TAT narratives reported on each picture were scored by a pair of decentering scorers. The scorers worked independently, then compared their scores to reconcile any scoring discrepancies of each interaction unit. Lastly, if a consensus was unattainable between the pair of scorers, the issue would be consulted and resolved with a scoring council that met weekly (Jenkins, 2008). The decentering scoring process requires the scorer to identify interaction units in the participant's narrative. An interaction unit involves two or more characters interacting at

the same time and context and is assigned a decentering maturity category score (Feffer et al., 2008, p. 159). There are nine ordinal decentering category scores (see Table 1), with 1 (*undifferentiated relationship*) signifying characters are not differentiated from each other, and 9 (*internalized self-other*) indicating the highest level of mature decentering (i.e., characters examine their own feelings and internal states in relation to another character in the narrative; Feffer et al., 2008).

The interpersonal decentering scorers identify each interaction unit (i.e., parts of the story where at least two characters are interacting with one another) within the participants' TAT story, and then assign each unit a score (Feffer et al., 2008). Additionally, each score is based on a 1 to 9 scale, where 1 = *undifferentiated relationship*, 2 = *nonreactive directional relationship*, 3 = *reactive directional relationship*, 4 = *interactive directional relationship*, 5 = *internalized other/simple representation*, 6 = *internalized other/surface characteristics*, 7 = *internalized other/internalized state*, 8 = *internalized others*, and 9 = *internalized self-other*. These scores are further conceptualized in two broader classifications. First, scores 1 through 4 are considered primitive sequential decentering statements and are considered lower since they are more concrete, less abstract, and less indicative of formal operational functioning (Leeper et al., 2008). Next, scores 5 through 9 underscore the participants' ability to think more abstractly and less egocentrically (Leeper et al., 2008).

Concerning reliability, Feffer and Jahelka (1968) reported an interscorer reliability of $\rho = .71$ with scorers who were trained utilizing the Interpersonal Decentering scoring system. Strober (1979) also found adequate interscorer reliability ($r = .78$) using 20 TAT stories between both Strober and their trained research assistant. Similarly, Carberry (1982) used a random

sample of 20 TAT stories and found adequate interscorer reliability ($r = .85$) between the author and a paired clinical graduate student.

For the current study, all the TAT stories were scored by a pair of trained scorers who had received a reliability criterion of $\rho = .83$, and scorers met weekly to adjust scoring discrepancies, with consensus scores ultimately being utilized for the analyses (Fincher, 2012). The interscorer reliabilities for each of the last 50 stories had ranged from .64 to .92 for average decentering scores (with an average of .83; Fincher, 2012). Additionally, the current study used the average across-card scores of each participant at age 12.5 and 18 years.

Data Analysis Plan

A longitudinal correlational design was implemented in the current study using SPSS version 28. Given that longitudinal designs can have lost or missing data (e.g., due to participant attrition), to examine what variables of interest had missing data, a basic descriptives table (see Table 2) was made for the variables of interest and demographics (i.e., gender and socioeconomic status).

Additionally, frequency distributions of the variables of interest and demographics were conducted to examine any outliers or abnormalities (e.g., kurtosis, skewness) within the datasets. These descriptives also included Box Plots to examine extreme outliers. Specifically, all variables were placed in the dependent list, the normality plots with tests option was chosen, and the factors were leveled together. Next, the pairwise cases were excluded and the descriptives table was run. Subsequently, A Little's MCAR test before Expectation-Maximization (Little, 1988) was also performed to examine missing values (Enders, 2003).

Next, independent t-tests were conducted to explore group differences in variables of interest and demographics. Decentering at age 12.5 and 18 years, conflict with relatives, parent's

nervous instability, skilled imaginative play (age 7, 10, 13), introspection (age 7, 10, 13), and health reports (ages 5-10 years, 11-17 years) were categorized as Test Variables, and gender and social class were categorized as the grouping variables. Specifically, gender differences in decentering at age 12.5 and 18 years, and socioeconomic status differences and decentering at age 12.5 and 18 years were examined. Moreover, gender differences and socio-economic status differences among the moderators (conflict with relatives, parental nervous instability, skilled imaginative play, introspection, and the child's health) were also examined. Each variable and analysis are listed in Table 7. Since there is an emphasis on studying boys' mature decentering, the dataset was split, and all other analyses were run separately for boys and girls.

Finally, a PROCESS moderation analysis using SPSS version 28 was conducted to test each hypothesis. The option to generate codes for visualizing interactions was selected. Additionally, there was no centering of the mean for construction of products, the analyses were run with confidence intervals at 95%, and the conditioning values selected were 16th, 50th, and 84th percentiles.

Results

Attrition Analysis

The examination of attrition was implemented (see Table 2). The current study examined decentering at age 12.5 years ($n = 73$), decentering at age 18 years ($n = 51$), mother-child bonds at age 21 months ($n = 105$), father-child bonds at age 21 months ($n = 104$), conflict with relatives at age 21 months ($n = 101$), mother's nervous instability at 21 months ($n = 105$), father's nervous instability at 21 months ($n = 105$), skilled imaginative play at age 7, introspection at age 7, skilled imaginative play at age 10, and introspection at age 10 ($n = 99$), skilled imaginative play and introspection at age 13 ($n = 71$), health reports ages 5 to 10 years ($n=105$), and health reports

ages 11-17 years ($n = 103$). Adolescent Q-sorts, parental interviews, and health reports were not completed for the control participants (data on conflict with relatives, skilled imaginative play, introspection at age 7, 10, and 13 years, and health reports at age 5-10 and 11-17 years were not available). Accordingly, control participants were excluded from this study.

Univariate Descriptives

Descriptive characteristics are listed in Table 3. The descriptive characteristics are of the following variables: gender and social class, and the variables of interest: average decentering scores at age 12.5 and age 18 years, mother-child bond, father-child bond, conflict with relatives, mother's nervous instability, father's nervous instability, skilled imaginative play at age 7, 10, and 13 years, introspection at age 7, 10, and 13 years, and self-report health status at age 5-10 years and 11-17 years. It is important to note, social class was organized in a binary manner: Middle class and Upper class (see Table 3).

Regarding skewness and kurtosis, a general guideline for confirming skewness is that the number must be greater than +2 or lower than -2 (Byrne, 2010; Hair et al., 2010). Additionally, kurtosis above 7 is considered leptokurtic, and less than 7) is considered platykurtic (Byrne, 2010; Hair et al., 2010). The decentering at age 12.5 data was slightly positively skewed (1.87), with no severe kurtosis (3.88), and it had three extreme outliers according to the box plot. The decentering at age 18 dataset had one extreme outlier according to the box plot, was positively skewed (1.98), and showed no severe kurtosis (4.97). Next, a Little's MCAR test was conducted on the dataset with the outliers to assess if variables were missing completely at random. The results were not significant, and accordingly, the variables of interest were missing completely at random, $\chi^2(264, N = 105) = 299.38, p = .066$.

The decentering at age 12.5- and 18-years variables had extreme outliers, and the

removal of these outliers, especially given the small sample sizes, would potentially impact the full range of outcomes for each variable, as well as reduce power (Serdar et al., 2021). The analyses were run with the outliers; additionally, the decentering datasets were winsorized and then run (André, 2021). The winsorized analyses did not notably differ from the analyses with the outliers (see Table 9 for winsorized analyses and Table 10 for analyses with outliers). Additionally, the winsorized decentering at age 12.5 years dataset was less positively skewed (1.18) and kurtosis reduced (.64); the winsorized decentering at age 18 years dataset was less positively skewed (1.36) and kurtosis reduced (1.45). The winsorized versions were used in the remaining analyses.

Bivariate Descriptives

Bivariate correlations were conducted to examine potential relationships among the demographics and variables of interest (see Table 4). Decentering at age 12.5 years was correlated with gender; this could be better explained by differences in how boys and girls are socialized. Father-child bonds were significantly positively correlated with mother-child bonds, and a father's nervous instability was also significantly positively correlated with the father-child bond variable. These associations could be indicative of familial dynamics (how similarly fathers and mothers parent their child; a father's anxiety about fatherhood could impact his parenting). Additionally, skilled imaginative play at age seven was significantly negatively correlated with decentering at age 12.5 years. Notably, introspection at age seven was significantly positively correlated with introspection at age 10 years, health reports at ages 5 to 10 years were significantly negatively correlated with skilled imaginative play at age seven, but significantly positively correlated with skilled imaginative play at age 10. This could be indicative of personality consistency over time, as well as developmentally related changes in play and health.

Subsequently, all analyses were conducted separately by gender to examine potential comparisons and unique qualities of each gendered sample. A bivariate correlation matrix was conducted for each gender (see Table 5 for boys and Table 6 for girls). First, independent-samples *t*-tests were conducted to analyze gender and social class differences in the variables of interest (see Tables 7 and 8).

Gender differences in introspection at age 10 years were found ($t(97) = -2.67, p = .009$), with girls ($M = 5.63, SD = 1.95$) scoring higher than boys ($M = 4.63, SD = 1.81$), with higher scores indicating introspection most closely defines the participant's personality style. Girls ($M = 2.90, SD = .51$) also scored significantly higher than boys ($M = 2.47, SD = .57$) in their self-reports on health status at ages 11 to 17 years ($t(101) = -4.09, p = <.001$), with higher self-report health ratings representing worse health (1 = Excellent health; 5 = Bad health). Regarding socioeconomic status, there were differences in skilled imaginative play at ages seven ($t(91) = 2.19, p = .031$) and 10 years ($t(91) = 3.71, p = <.001$). Middle class participants scored significantly higher ($M = 5.11, SD = 1.33; M = 5.64, SD = 1.23$) than upper class participants ($M = 4.42, SD = 1.48; M = 4.51, SD = 1.45$, respectively) at 7 years and at 10 years old.

A PROCESS moderation analysis was conducted to examine each of the five hypotheses of the current study, and the hypotheses were tested for each gender separately (see Table 9):

Hypothesis 1

More familial conflict will moderate the relationship between the strength of the parent-child bond at 21 months and the maturity of the adolescent's interpersonal decentering at age 12.5 and 18 years. Specifically, in families with more conflict with relatives, boys and girls with stronger bonds with their father or mother at 21 months will show more mature decentering at age 12.5 and 18 years compared to children in families with less familial conflict with relatives.

For mother-daughter bonds and decentering at age 12.5 years, the results showed that the overall model was not significant ($R^2 = .03$, $F(3, 31) = .34$, $p = .797$) and the interaction effect was not significant ($B = -.11$, $SE = .42$, $t = -.25$, $p = .801$). For mother-daughter bonds on decentering at age 18 years, the overall model was not significant ($R^2 = .01$, $F(3, 24) = .12$, $p = .950$) and the interaction effect was not significant ($B = -.19$, $SE = .49$, $t = -.39$, $p = .697$).

For father-daughter bonds and decentering at age 12.5 years, the results showed that the overall model was not significant ($R^2 = .18$, $F(3, 31) = .36$, $p = .781$). The interaction effect was also not significant ($B = .21$, $SE = .38$, $t = .55$, $p = .586$). Finally, for father-daughter bonds and decentering at 18 years, the results showed that the overall model was not significant ($R^2 = .26$, $F(3, 24) = .59$, $p = .625$). Lastly, the interaction effect was also not significant ($B = -.18$, $SE = .42$, $t = -.42$, $p = .676$).

For mother-son bonds and decentering at age 12.5 years, the results showed that the overall model was not significant ($R^2 = .12$, $F(3, 31) = 1.40$, $p = .263$). The interaction effect was also not significant ($B = -.25$, $SE = .27$, $t = -.91$, $p = .368$) For mother-son bonds and decentering at age 18 years, the results showed that the overall model was not significant ($R^2 = .07$, $F(3, 18) = .46$, $p = .716$). The interaction effect was also not significant ($B = .26$, $SE = .27$, $t = .96$, $p = .348$).

For father-son bonds and decentering at age 12.5 years, the results showed that the overall model was not significant ($R^2 = .08$, $F(3, 31) = .93$, $p = .436$). The interaction effect was also not significant ($B = -.05$, $SE = .22$, $t = -.25$, $p = .807$). Finally, for father-son bonds and decentering at 18 years, the results showed that the overall model was not significant ($R^2 = .14$, $F(3, 18) = 1.01$, $p = .410$). Lastly, the interaction effect was also not significant ($B = .33$, $SE = .25$, $t = 1.34$, $p = .196$). The assumption that more familial conflict will moderate the relationship

between the strength of the parent-child bond at 21 months and the maturity of the adolescent's interpersonal decentering at age 12.5 and 18 years was not supported.

Hypothesis 2

A parent's higher levels of nervous instability will moderate the relationship between the strength of the parent-child bond at 21 months and the maturity of the adolescent's interpersonal decentering at age 12.5 and 18 years. That is, among children who have parents with high levels of nervous instability, boys and girls who have stronger relationships with their parents at 21 months will show more mature decentering at age 12.5 and 18 years, whereas those with parents who have low nervous instability will have a weaker association.

For mother-daughter bonds, the mother's nervous instability, and decentering at age 12.5 years, the results showed that the overall model was not significant ($R^2 = .29$, $F(3, 32) = .95$, $p = .428$). The interaction effect was not significant ($B = -.86$, $SE = .62$, $t = -1.37$, $p = .179$). For mother-daughter bonds, mother's nervous instability, and decentering at age 18 years, the results showed that the overall model was not significant ($R^2 = .13$, $F(3, 25) = .14$, $p = .936$). The interaction effect was also not significant ($B = .31$, $SE = .57$, $t = .54$, $p = .595$).

For mother-daughter bonds, father's nervous instability, and decentering at age 12.5 years, the results showed that the overall model was not significant ($R^2 = .02$, $F(3, 32) = .27$, $p = .849$). The interaction effect was not significant ($B = -.16$, $SE = .38$, $t = -.42$, $p = .680$). For mother-daughter bonds, father's nervous instability, and decentering at age 18 years, the results showed that the overall model was not significant ($R^2 = .01$, $F(3, 25) = .08$, $p = .971$). The interaction effect was also not significant ($B = -.09$, $SE = .44$, $t = -.20$, $p = .847$).

For father-daughter bonds, father's nervous instability, and decentering at age 12.5 years, the results showed that the overall model was not significant ($R^2 = .09$, $F(3, 32) = 1.05$, $p =$

.386). The interaction effect was not significant ($B = -.66$, $SE = .39$, $t = -1.69$, $p = .101$). For father-daughter bonds, father's nervous instability, and decentering at age 18 years, the results showed that the overall model was not significant ($R^2 = .14$, $F(3, 25) = 1.35$, $p = .280$). The interaction effect was also not significant ($B = .72$, $SE = .45$, $t = 1.59$, $p = .125$).

For father-daughter bonds, mother's nervous instability, and decentering at age 12.5 years, the results showed that the overall model was not significant ($R^2 = .02$, $F(3, 32) = .22$, $p = .885$). The interaction effect was not significant ($B = -.17$, $SE = .49$, $t = -.34$, $p = .737$). For father-daughter bonds, mother's nervous instability, and decentering at age 18 years, the results showed that the overall model was not significant ($R^2 = .068$, $F(3, 25) = .61$, $p = .617$). The interaction effect was also not significant ($B = .23$, $SE = .44$, $t = .52$, $p = .605$).

For mother-son bonds, mother's nervous instability, and decentering at age 12.5 years, the results showed that the overall model was significant ($R^2 = .23$, $F(3, 33) = 3.33$, $p = .031$). The interaction effect was not significant ($B = -.02$, $SE = .19$, $t = -.10$, $p = .923$). For mother-son bonds and decentering at age 18 years, the results showed that the overall model was not significant ($R^2 = .08$, $F(3, 18) = .53$, $p = .667$). The interaction effect was also not significant ($B = .25$, $SE = .23$, $t = 1.08$, $p = .295$).

Testing the father's nervous instability as a moderator of mother-son bonds and decentering at age 12.5 years, the results showed that the overall model was not significant ($R^2 = .02$, $F(3, 33) = .17$, $p = .915$), and the interaction effect was not significant ($B = -.16$, $SE = .25$, $t = -.62$, $p = .541$). When testing the father's nervous instability as a moderator of mother-son bonds and decentering at age 18 years, the results showed that the overall model was not significant ($R^2 = .25$, $F(3, 18) = 2.00$, $p = .150$). However, the interaction effect was significant

($B = -.59, SE = .27, t = -2.20, p = .041$)². An analysis of conditional effects indicated that when the father's nervous instability³ was low (father was more stable), the weaker mother-son bonds⁴ predicted more mature decentering at age 18 years, and this was marginally significant ($B = .90, SE = .44, t = 2.05, p = .055$). When the father's nervous instability was high (father was less stable), the weaker mother-son bonds predicted less mature decentering at age 18 years, and this association was marginally significant in the opposite direction ($B = -1.46, SE = .81, t = -1.80, p = .088$).

When the father's nervous instability was tested as a moderator for father-son bonds and decentering at age 12.5 years, the results showed that the overall model was not significant ($R^2 = .02, F(3, 33) = .23, p = .878$). The interaction effect was not significant ($B = .12, SE = .17, t = .74, p = .46$). For father-son bonds and decentering at age 18 years, the results showed that the overall model was not significant ($R^2 = .18, F(3, 18) = 1.30, p = .307$). The interaction effect was also not significant ($B = -.28, SE = .19, t = -1.47, p = .127$).

When testing the mother's nervous instability as the moderator for father-son bonds and decentering at age 12.5 years, the results showed that the overall model was significant ($R^2 = .23, F(3, 33) = 3.37, p = .030$). The interaction effect was not significant ($B = -.06, SE = .15, t = -.38, p = .705$). For father-son bonds and decentering at age 18 years, the results showed that the overall model was not significant ($R^2 = .07, F(3, 18) = .48, p = .702$). The interaction effect was also not significant ($B = .11, SE = .21, t = .53, p = .604$). Overall, the hypothesis was partially

² See Figure 1.

³ Father's or Mother's Nervous Instability: 1 = Very stable, 2 = Above avg., 3 = Avg., 4 = Occasional upsets, 5 = Excitable/tense, 6 = Neurotic, 7 = Psychotic

⁴ Mother-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment

supported, with the father's instability being a significant moderator on the relationship between a strong mother-son bond and the son's more mature decentering at age 18 years.

Hypothesis 3

A son's higher level of skilled imaginative play will moderate the relationship between his bond with his father at age 21 months and his decentering maturity at age 12.5 and 18 years. Specifically, for boys who engage in more skilled imaginative play, their bond with their fathers at 21 months is a stronger predictor of their adolescent decentering maturity than for sons who engage in less skilled imaginative play.

For skilled imaginative play at age 7 years and decentering at 12.5 years, the results showed that the overall model was not significant ($R^2 = .02$, $F(3, 32) = .25$, $p = .859$). The interaction effect was not significant ($B = -.12$, $SE = .22$, $t = -.56$, $p = .577$). With skilled imaginative play at age 7 years and decentering at 18 years, the results showed that the overall model was not significant ($R^2 = .08$, $F(3, 17) = .49$, $p = .696$). The interaction effect was not significant ($B = .13$, $SE = .25$, $t = .50$, $p = .625$).

Regarding skilled imaginative play at age 10 years and decentering at 12.5 years, the results showed that the overall model was not significant ($R^2 = .08$, $F(3, 33) = .90$, $p = .454$). The interaction effect was also not significant ($B = -.04$, $SE = .17$, $t = -.22$, $p = .827$). For skilled imaginative play at age 10 years and decentering at 18 years, the results showed that the overall model was not significant ($R^2 = .07$, $F(3, 18) = .48$, $p = .70$). The interaction effect was also not significant ($B = -.10$, $SE = .22$, $t = -.46$, $p = .653$).

For skilled imaginative play at age 13 years and decentering at 18 years, the results showed that the overall model was not significant ($R^2 = .20$, $F(3, 8) = .69$, $p = .585$). The interaction effect was also not significant ($B = .29$, $SE = .35$, $t = .81$, $p = .440$). The assumption

that a son's skilled imaginative play moderated the relationship between father-son bonds and the son's mature decentering at 12.5 and 18 years was not supported.

Hypothesis 4

A son's tendency toward introspection will moderate the relationship between his bond with his father at age 21 months and his decentering maturity at age 12.5 and 18 years. That is, among boys who are more introspective, their bond with their father at 21 months is a stronger predictor of their adolescent decentering maturity than for those boys who are less introspective.

For introspection at age 7 years as a moderator on the strong father-son bond and decentering at 12.5 years, the results showed that the overall model was not significant ($R^2 = .15$, $F(3, 32) = 1.92$, $p = .146$). The interaction effect was significant ($B = .55$, $SE = .24$, $t = 2.28$, $p = .030$)⁵. When the son's reported introspection was low at age 7 years,⁶ a strong early father-son bond⁷ predicted more mature decentering at age 12.5 years; specifically, an analysis of conditional effects indicated the effect was negative and marginally significant when the son's reported introspection was low ($B = -.86$, $SE = .43$, $t = -2.00$, $p = .055$), and when the son's reported introspection was high at age 7 years, a strong father-son bond marginally predicted less mature decentering at age 12.5 years, reversing the direction hypothesized ($B = .79$, $SE = .44$, $t = 1.82$, $p = .079$). With introspection at age 7 years and decentering at 18 years, the results showed that the overall model was not significant ($R^2 = .20$, $F(3, 17) = 1.44$, $p = .266$). The interaction effect was not significant ($B = -.48$, $SE = .29$, $t = -1.69$, $p = .110$).

⁵ See Figure 2.

⁶ Introspection at Age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative

⁷ Father-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment

For introspection at age 10 years and decentering at 12.5 years, the results showed that the overall model was not significant ($R^2 = .02$, $F(3, 33) = .24$, $p = .143$). The interaction effect was not significant ($B = .00$, $SE = .13$, $t = .03$, $p = .978$). With introspection at age 10 years and decentering at 18 years, the results showed that the overall model was not significant ($R^2 = .09$, $F(3, 18) = .61$, $p = .615$). The interaction effect was not significant ($B = -.07$, $SE = .17$, $t = -.39$, $p = .70$).

With introspection at age 13 years and decentering at 18 years, the results showed that the overall model was not significant ($R^2 = .12$, $F(3, 8) = .36$, $p = .787$). The interaction effect was not significant ($B = -.17$, $SE = .65$, $t = -.27$, $p = .794$). The assumption that a son's higher levels of reported introspection moderated the relationship between father-son bonds and the son's mature decentering at 12.5 and 18 years was not supported; specifically, when a son's introspection at age 7 was low, instead of high as hypothesized, the strong father-son bond predicted more mature decentering at 12.5 years.

Hypothesis 5. A son's impaired physical ability will moderate the relationship between strong father-son bonds at 21 months and the son's maturity of decentering at age 12.5 and 18 years. Specifically, the healthier the son, the stronger the relationship between the father-son bond in infancy and more mature decentering in adolescence compared to sons with poorer health.

For health reports at ages 5-10 years as a moderator on the relationship between strong early father-son bonds and decentering at 12.5 years, the results showed that the overall model was not significant ($R^2 = .01$, $F(3, 33) = .14$, $p = .936$). The interaction effect was not significant ($B = -.19$, $SE = .44$, $t = -.43$, $p = .673$). With health reports at ages 5-10 years as a moderator on the relationship between strong early father-son bonds and decentering at 18 years, the results

showed that the overall model was significant ($R^2 = .35$, $F(3, 18) = 3.27$, $p = .045$)⁸. The interaction effect was also significant ($B = -.10$, $SE = .37$, $t = -2.67$, $p = .016$). That is, when sons had better health reports at age 5-10 years, a weaker early father-son bond predicted more mature decentering; specifically, an analysis of conditional effects indicated the effect was positive and significant when the son's health reports were good ($B = .94$, $SE = .34$, $t = 2.76$, $p = .013$), marginally significant when health reports were fair ($B = .50$, $SE = .25$, $t = 1.96$, $p = .066$), and negative and not significant when health was poorer ($B = -.22$, $SE = .31$, $t = -.71$, $p = .487$).

Regarding health reports at ages 11-17 years as a moderator on early strong father-son bonds and decentering at 18 years, the results showed that the overall model was significant ($R^2 = .42$, $F(3, 18) = 4.42$, $p = .017$), and the interaction effect was significant ($B = -1.73$, $SE = .62$, $t = -2.79$, $p = .012$). An analysis of conditional effects indicated that, when the son's health reports⁹ were excellent, a weaker father-son bond predicted the son's higher mature decentering ($B = 1.14$, $SE = .37$, $t = 3.07$, $p = .007$), but this was not significant when the son's health reports were good ($B = .26$, $SE = .23$, $t = 1.11$, $p = .281$), and marginally significant in the opposite direction when the son's health reports were fair ($B = -.10$, $SE = .53$, $t = -1.89$, $p = .075$). That is, the hypothesis was not supported; specifically, it was hypothesized that, when sons with better health at ages 5-10 years and 11-17 years, strong father-son bonds at 21 months would predict more mature decentering at age 12.5 and 18 years. Instead, the findings revealed that, when sons had better health at ages 5-10 years and 11-17 years, weaker father-son bonds at 21 months predicted more mature decentering at age 18 years.

⁸ See Figures 3 and 4.

⁹ Health Ages 5-10 11-17: 1 = Excellent health, 2 = Good health, 3 = Fair health, 4 = Poor health, 5 = Bad health

Discussion

The current study explored moderating variables that might influence the association between parent-child bonds in infancy and the maturation of interpersonal decentering in adolescence. These moderators included familial conflicts with relatives and a parent's nervous instability among both boys and girls. For early father-son bonds and adolescent decentering, the moderators tested were the son's skilled imaginative play, the son's introspection, and the son's physical health status.

Tests of Hypotheses

The findings showed the following partial support: (1) Higher levels of the father's instability strengthened the relationship between the strong mother-son bond at 21 months and mature decentering of the child at 18 years, and less parental instability strengthened the relationship between weaker parent-child bonds at 21 months and mature decentering of the child at 18 years; (2) Higher introspection in sons at age seven strengthened the relationship between weaker father-son bonds and the son's more mature decentering at 12.5 years, and less introspection strengthened the relationship between stronger father-son bonds at 21 months and more mature decentering of the child at 12.5 years; (3) The son's reports of better health at ages 5-10 years and 11-17 years strengthened the relationship between weaker father-son bonds at age 21 months and the son's more mature decentering at age 18 years.

First, it was hypothesized that more conflict with relatives would strengthen the relationship between strong parent-child bond at 21 months and more mature decentering of the child at age 12.5 and 18 years, however, the hypothesis was not supported. Ultimately, the small sample size resulted in low statistical power. Additionally, most participants did not report higher levels of familial conflicts, resulting in low variance.

Next, it was hypothesized that higher levels of a parent's nervous instability would strengthen the relationship between stronger parent-child bonds at 21 months and the child's more mature interpersonal decentering at 12.5 and 18 years. Such parental instability was thought to influence the child to anticipate the parent's thoughts, feelings, and emotions. The results showed, when the father's nervous instability was high, stronger mother-son bonds at 21 months predicted the son's more mature decentering at age 18 years; when the father's nervous instability was low, weaker mother-son bonds at 21 months predicted the son's more mature decentering at 18 years. It is important to note that, due to the coding direction of some of the variables in the original Guidance Study data, higher scores of mother-son bonding were indicative of lower closeness of bond (these individuals were less attached to one another). In other words, the positive association indicated that sons who had weaker bonds with their mothers showed higher mature decentering scores at age 18 years when the moderator (i.e., father's stable character indicated by a lower score) was present (Figure 1). Ultimately, sons who have more stable fathers do not need a strong mother-son bond to decenter more maturely by 18 years; however, sons who have unstable fathers, do. In other words, in family dynamics where the father's nervous instability is high, having a strong mother-son bond is potentially important in reducing familial distress. Moreover, efforts to form a strong parental bond and reduce distress might involve engaging in perspective-taking behaviors for both the parent and child.

Moreover, it was hypothesized that higher levels of skilled imaginative play at age 7, 10, and 13 would strengthen the relationship between stronger parent-child bonds at 21 months and the adolescent's interpersonal mature decentering at age 12.5 and 18 years, however, this hypothesis was not supported. Previous studies have found that imaginative play strengthens a child's perspective-taking abilities (Tan-Niam, 1992). Given that previous studies have measured

imaginative play as make-believe play and role-playing (Peisach & Hardeman, 1985; Tan-Niam, 1992), and the current study defined skilled imaginative play as including pretending and humor (“Adolescent Q Sort Composites,” n.d.), the subjective definition of imaginative play could have resulted in non-significant findings.

Next, it was hypothesized the son’s higher introspection would moderate the relationship between strong father-son bonds at 21 months and the adolescent’s mature interpersonal decentering at age 12.5 and 18 years. The results showed that when sons were more introspective at age seven, this strengthened the relationship between weaker father-son bonds and more mature decentering by age 12.5 years; however, when a son’s introspection at age 7 was low, strong father-son bond predicted more mature decentering at 12.5 years. Once more, higher scores of father-son bonding were indicative of lower levels of bond (these individuals were less attached to one another; Figure 2). Given the findings, it is possible that more introspective sons are not only aware of themselves, but are aware of themselves in relation to others, which would require some level of perspective taking. Moreover, when considering familial dynamics, if weaker parental bonds predicted more mature decentering in adolescence among 7-year-old introspective boys, it is possible that the limited parent-child bonding time played a role in the son becoming more introspective. That is, the son became more aware of himself as he spent less time bonding with his father and more time with himself during the first seven years of life.

Additionally, it is unclear as to why the son’s introspection as a moderator was only significant at age 7 and not 10 or 13 years. However, one possibility is the developmental differences between childhood and early adolescence. Specifically, regarding interpersonal relationships, younger adolescents tend to hold constructs such as the imaginary audience (a belief that others are concerned about the adolescents’ thoughts and appearance) and the personal

fable (a belief that the adolescent is special, unique; Elkind & Bowen, 1979). Such an egocentric perspective of oneself could result in a lack of perspective-taking, whereas younger children are just beginning to form more operational thought at age 7 years (Piaget, 1972).

Finally, the fifth hypothesis assumed impaired physical ability at 5-10 years and 11-17 years would moderate the relationship between father-son bonds at 21 months and more mature decentering at 12.5 and 18 years. That is, the son's better health reports at ages 5-10 and 11-17 years would strengthen the strong father-son bond at 21 months and more mature decentering at age 12.5 and 18 years. The results showed that when sons reported better health at 5-10 years, weaker father-son bonds predicted more mature decentering at age 18 years compared to sons who reported only fair health, in which case their strong bonds with their father predicted higher decentering scores. Although there was a statistically positive conditional effect, lower scores of father-son bonds indicated higher levels of bonding, and lower scores of health indicated better health. Accordingly, for sons who had better health reports at age 5-10 years, their weaker father-son bonds in infancy predicted higher mature decentering at age 18 years. Additionally, when sons reported excellent health at age 11-17 years, weaker father-son bonds in infancy predicted higher mature decentering at age 18 years, compared to sons who reported only fair health, such that, stronger bonds with fathers during infancy predicted higher decentering scores at age 18 years. Ultimately, sons who reported better health at age 5-10 years and 11-17 years, and who had weaker father-son bonds showed higher mature decentering at age 18 years (see Figures 3 and 4). Considering the period in which the sample was gathered (i.e., during the early Great Depression), fathers might have spent more time at home given massive job losses at that period, and sons with worse health might have encouraged and/or needed more parental attention. Accordingly, sons who had worse health received more attention and over time may have gained

stronger bonds with their fathers, ultimately resulting in more mature decentering in late adolescence.

Lastly, considering a child's health status (particularly a son's health status) in relation to decentering is important since boys and men engage in more physical play (e.g., rough-and-tumble play; Paquette, 2004), and such play is a form of parent-child bonding (Jacklin et al., 1984; MacDonald & Parke, 1986). Accordingly, if good physical health is needed to engage in rough-and-tumble-play, it is possible that bonding through physical play among children who are healthy could encourage more mature decentering, while those with poorer health would need additional support (e.g., other forms of stronger parental bonds) to encourage more mature decentering.

Bivariate Findings

In addition to the main findings, bivariate analyses showed higher skilled imaginative play at age 7 and 10, and higher introspection at age 10 years was more common among boys who were middle class, and higher skilled imaginative play at age 10 was more common among girls who were middle class. Interestingly, studies have found low socioeconomic statuses disrupt secure parent-child attachments (Van IJzendoorn & Bakermans-Kranenburg, 2010). For example, if socioeconomic status is associated with access to resources (e.g., toys, books) that stimulate creativity in children, thus, strengthening skilled imaginative play, then socioeconomic status could be an additional variable that better explains the moderation analysis between strong parent-child bonds, skilled imaginative play, and the child's mature decentering later in life. However, the findings indicate middle or lower middle socioeconomic status was associated with higher reports of skilled imaginative play and introspection. It could be that a lack of parental interaction (e.g., parents working long hours) or lack of resources (e.g., limited access to field

trips or toys) push children to be more creative with the resources they have, or it may influence them to be more self-focused (e.g., find ways to distract and entertain oneself).

Furthermore, gender differences in introspection among girls and boys, with girls scoring higher than boys could be indicative of how boys and girls are socialized to process their emotions, emotional experiences, and how to perceive oneself. For instance, girls tend to internalize their emotional experiences while boys tend to externalize (Chaplin & Aldao, 2013). Moreover, girls reported slightly worse health than boys. This could be related to women's tendency to seek medical care more frequently than men, which might make it more likely for them to receive some health diagnosis (Petrie et al., 2022). In addition to this, Q-Sorters could have held different gender expectations for the male and female participants, impacting introspection scores. For example, if Q-Sorters held specific gender role ideologies, this could have resulted in the tendency to provide higher or lower scores for a particular gender.

Previous developmental research has often investigated parent-child dynamics and later development. For example, Fincher (2012) examined decentering capacities at age 12.5 years and parent-child bonds using the same data in the current study. Fincher (2012) found that strong father-son bonds were positively correlated with more mature decentering at age 12.5 years, and the current study's correlation analyses did not carry the same findings. This could be partly due to the following: not having control group participants in the current study resulting in a smaller sample, and splitting the data by gender.

Strengths and Limitations

There are several strengths and limitations to the study. First, the study included several measures that gathered rich qualitative and quantitative data (e.g., Q-sort, qualitative interviews, physical examinations). Second, given the longitudinal data spanned from birth to adolescence, it

allowed a dynamic exploration of personality development. Third, given the data collection began in the late 1920s, the findings allow for comparison of cultural shifts for future researchers, particularly concerning gender norms and expectations and its potential impact on decentering. Specifically, future researchers can explore gender in perspective-taking abilities and father-son bonds and compare modern findings to the current study's findings to examine potential cultural shifts that could better explain possible differences in the outcome. While Jenkins et al. (2020) and Jenkins et al. (2022) examined gender differences in present-day perspective-taking, the sample used in these studies were adults and not children.

Although these strengths provide a broader picture of child development and decentering, there are limitations. First, given that control participants' data could not be included, the sample size was small, thus, significantly reducing power for each variable of interest. The small sample size and low power likely contributed to the nonsignificant results.

Second, though mothers who participated in the Guidance Study were consistent, reliable, and responsive in the data collection process, the fathers were not. Fathers were seen infrequently, and information concerning their parenting was typically retrieved from the mothers (i.e., spouses). Additionally, the sample lacked diversity, as it consisted of predominantly White, middle-class individuals. Finally, attrition (unresponsive participants, death) was inevitable given that the archival data retrieved for this study were longitudinal, though this was less an issue with participants at earlier ages.

Future Research

Given the dearth of research on physical disability and parenting, future studies should explore the potential impact poor health can have on the relationship between parental bonds and mature decentering. Specifically, several studies have explored parental chronic pain, and how

this might impact a child's attachment style (Meredith et al., 2008). However, as mentioned earlier, no study has examined parents of children with physical disabilities, their bonding, and the child's mature decentering. This is important in that, not only will research exploring physical disabilities in relation to parent-child bonding and decentering expand the developmental literature, but it can empower individuals in this population to better understand the parenting process, implement appropriate parenting techniques, and better educate clinicians who can provide appropriate psychoeducation to clients within this group.

Additionally, it is important to see if cultural shifts in gender norms (gender expectations in the late 1920s through 1940s and modern time) might increase decentering in male and female children. Furthermore, given that the current study consisted of a predominantly White sample, when examining parent-child bonding and later mature decentering, including a more diverse sample would provide more representative data. For example, particular cultural standards and expectations could better explain the parent-child bond and later mature decentering. If future researchers wish to study disability, parent-child bonding, and decentering, taking an intersectional approach (e.g., participants who have a disability and are of an oppressed racial/ethnic group) can provide insight on what demographic variables play a strong role in parental bonding and decentering, as well as if there are any consistent differences across unique individuals (e.g., mature decentering differences among individuals with a disability who are boys, girls, or non-binary).

References

- “Adolescent Q Sort Composites.” (n.d.). [IGS Data] The Guidance Study Data-Set (G502C.070)
- André, Q. (2021). Outlier exclusion procedures must be blind to the researcher's hypothesis. *Journal of Experimental Psychology: General*. 151(1), 213-223.

- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. N. (2015). *Patterns of attachment: A psychological study of the strange situation*. Psychology Press. (Original work published 1978).
- Avis, J., & Harris, P. L. (1991). Belief-desire reasoning among Baka children: Evidence for a universal conception of mind. *Child Development, 62*(3), 460-467.
- Bandura, A. (1971). *Social learning theory*. New York: General Learning Press.
- Barry, T.D., Dunlap, S. T., Cotton S.J., Lochman, J. E., Wells, K.C. (2005). The influence of maternal stress and distress on disruptive behavior problems in boys. *Journal of the American Academy of Child and Adolescent Psychiatry, 44*(3), 265-273.
- Berzoff, J., & Schames, G., (2011). Drive and beyond: Freud's psychoanalytic concepts. In J. Berzoff, L.M Flanagan, P. Hertz, (Eds.) *Inside out and outside in: Psychodynamic clinical theory and psychopathology in contemporary multicultural contexts* (5th ed., pp. 14-46). Rowman & Littlefield.
- Birch, S. A. J., Li, V., Haddock, T., Ghrear, S. E., Brosseau-Liard, P., Baimel, A., & Whyte, M. (2017). Perspectives on perspective taking: How children think about the minds of others. *Advances in Child Development and Behavior, 52*, 185-226.
- Block, J. (1961). *The Q-sort method in personality assessment and psychiatric research* (1st ed.). American Psychological Association.
- Bowlby, J. (2008). *A secure base: Parent-child attachment and healthy human development*. Basic Books. (Original work published 1988).
- Bowlby, J. (1951). *Maternal care and mental health* (Vol. 2). Geneva: World Health Organization.
- Bretherton, I. (1992). The origins of attachment theory: John Bowlby and Mary Ainsworth. *Developmental Psychology, 28*(5), 759-775.
- Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. New York: Routledge.
- Carberry, A. (1982). *Interpersonal decentering, social interaction, and treatment status in children at risk for psychosis*. Unpublished doctoral dissertation, Saint Louis University.
- Carnagey, N. L., & Anderson, C. A. (2005). The effects of reward and punishment in violent video games on aggressive affect, cognition, and behavior. *Psychological Science, 16*(11), 882-889.
- Carpendale, J. I., & Lewis, C. (2004). Constructing an understanding of mind: The development of children's social understanding within social interaction. *Behavioral and Brain Sciences, 27*(1), 79-96.

- Carpendale, J., & Lewis, C. (2006). *How children develop social understanding*. Blackwell Publishing.
- Carpendale, J. I. M., & Lewis, C. (2015). The development of social understanding. In L. S. Liben, U. Müller, & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science: Cognitive processes* (pp. 381–424). John Wiley & Sons, Inc.. <https://doi.org/10.1002/9781118963418.childpsy210>
- Carson, J. (1993). Parent-child physical play: Determinants and consequences James Carson, Virginia Burks, and Ross D. Parke. In K. MacDonald (Ed). *Parent-child play: Descriptions and implications*, 197-215. State University of New York Press.
- Cervantes, C. A., & Callanan, M. A. (1998). Labels and explanations in mother–child emotion talk: Age and gender differentiation. *Developmental Psychology*, 34(1), 88–98. <https://doi.org/10.1037/0012-1649.34.1.88>
- Chan, D. (2010). So why ask me? Are self-report data really that bad?. In *Statistical and methodological myths and urban legends* (pp. 329-356). In C.E. Lance and R. J. Vandenberg. Routledge.
- Chaplin, T. M., & Aldao, A. (2013). Gender differences in emotion expression in children: a meta-analytic review. *Psychological Bulletin*, 139(4), 735.
- Chopik, W. J., O’Brien, E., & Konrath, S. H. (2017). Differences in empathic concern and perspective taking across 63 countries. *Journal of Cross-Cultural Psychology*, 48(1), 23-38.
- Clear, S. J., & Zimmer-Gembeck, M. J. (2017). Associations between attachment and emotion-specific emotion regulation with and without relationship insecurity priming. *International Journal of Behavioral Development*, 41(1), 64-73.
- Cole, M., & Wertsch, J. V. (1996). Beyond the individual-social antinomy in discussions of Piaget and Vygotsky. *Human Development*, 39(5), 250-256.
- “Early Parental Ratings and Clusters.” (n.d.). [IGS Data] The Guidance Study Data-Set (G8400).
- Eichorn, D. H. (1981). Samples and procedures. In D. H. Eichorn, J. A. Clausen, N. Haan, M. P. Honzik & P. H. Mussen (Eds.) *Present and past in middle life* (pp. 33-51). New York: Academic Press.
- Elkind, D., & Bowen, R. (1979). Imaginary audience behavior in children and adolescents. *Developmental Psychology*, 15(1), 38-44.
- Enright, R. D., & Lapsley, D. K. (1980). Social role-taking: A review of the constructs, measures, and measurement properties. *Review of Educational Research*, 50(4), 647-674.
- Ettenberger, M., Bieleninik, L., Epstein, S., & Elefant, C. (2021). Defining attachment and bonding: Overlaps, differences, and implications for music therapy clinical practice and

- research in the neonatal intensive care unit (NICU). *International Journal of Environmental Research and Public Health*, 18(4), 1733-1743.
- Fabio, A., Chen, C. Y., Dearwater, S., Jacobs Jr, D. R., Erickson, D., Matthews, K. A., Iribarren, C., Sidney, S., & Pereira, M. A. (2017). Television viewing and hostile personality trait increase the risk of injuries. *International Journal of Injury Control and Safety Promotion*, 24(1), 44-53.
- Feffer, M. H. (1959). The cognitive implications of role taking behavior. *Journal of Personality*, 27(2), 152-168. <https://doi.org/10.1111/j.1467-6494.1959.tb01826.x>
- Feffer, M. H., & Gourevitch, V. (1960). Cognitive aspects of role-taking in children. *Journal of Personality*, 28(4), 383-396. <https://doi.org/10.1111/j.1467-6494.1960.tb01627.x>
- Feffer, M., & Jahelka, M. (1968). Implications of the decentering concept for the structuring of projective content. *Journal of Consulting and Clinical Psychology*, 32(4), 434-441. <https://doi.org/10.1037/h0026101>
- Feffer, M., Leeper, M., Dobbs, L., Jenkins, S. R., & Perez, L. E. (2008). Scoring manual for Feffer's interpersonal decentering. In S. R. Jenkins (Ed.), *Handbook of clinical scoring systems for thematic apperceptive techniques* (pp. 173-196). Routledge.
- Feffer, M., & Suchotliff, L. (1966). Decentering implications of social interactions. *Journal of Personality and Social Psychology*, 4(4), 415-422. <https://doi.org/10.1037/h0023807>
- Flanagan, L. M. (2011). Object relations theory. In J. Berzoff, L.M. Flanagan, & P. Hertz (Eds.), *Inside out and outside in: Psychodynamic clinical theory and psychopathology in contemporary multicultural contexts*, Rowman & Littlefield (5th ed., pp.118-157).
- Fincher, J. (2012). *Decentering and the theory of social development*. Unpublished doctoral dissertation. University of North Texas.
- Flanders, J. L., Leo, V., Paquette, D., Pihl, R. O., & Séguin, J. R. (2009). Rough-and-tumble play and the regulation of aggression: an observational study of father-child play dyads. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, 35(4), 285-295.
- Flavell, J. H., Botkin, R. T., Fry, C. L., Wright, J. W., & Jarvis, P. E. (1968) *The development of role taking and communication skills in children*. New York: Wiley.
- Freud, S. (1991). *On sexuality: Three essays on the theory of sexuality and other works*. Penguin Books, Limited. (Original work published 1905).
- Freud, S. (1924). The dissolution of the Oedipus complex. In J. Strachey, A. Freud, A. Strachey, & A. Tyson (Eds.), *The standard edition of the complete psychological works of Sigmund Freud: The ego and the id and other works* (Vol. 19). The Hogarth Press and the Institute of Psycho-Analysis (Original work published 1923-1925; pp. 171-180).

- Fonagy, P. (2018). *Attachment theory and psychoanalysis*. Routledge.
- Fonagy, P., Gergely, G., & Target, M. (2007). The parent–infant dyad and the construction of the subjective self. *Journal of Child Psychology and Psychiatry*, 48(3-4), 288-328.
- Fonagy, P., Steele, H., Steele, M., & Holder, J. (1997). Attachment and theory of mind: Overlapping constructs? *Association for Child Psychology and Psychiatry Occasional Papers*, 14, 31-40.
- Forke, C. M., Myers, R. K., Fein, J. A., Catalozzi, M., Localio, A. R., Wiebe, D. J., & Grisso, J. A. (2018). Witnessing intimate partner violence as a child: How boys and girls model their parents' behaviors in adolescence. *Child Abuse & Neglect*, 84, 241-252.
- Garaigordobil, M., & García de Galdeano, P. (2006). Empathy in children aged 10 to 12 years. *Psicothema*, 18(2), 180-186.
- Gander, M., & Buchheim, A. (2015). Attachment classification, psychophysiology and frontal EEG asymmetry across the lifespan: a review. *Frontiers in Human Neuroscience*, 9(79), 1-16.
- Grusec, J. E., & Lytton, H. (2012). *Social development: History, theory, and research*. Springer Science & Business Media.
- Gryczkowski, M., Jordan, S. S., & Mercer, S. H. (2018). Moderators of the relations between mothers' and fathers' parenting practices and children's prosocial behavior. *Child Psychiatry & Human Development*, 49(3), 409-419.
- Gryczkowski, M. R., Jordan, S. S., & Mercer, S. H. (2010). Differential relations between mothers' and fathers' parenting practices and child externalizing behavior. *Journal of Child and Family Studies*, 19(5), 539-546.
- Hair, J., Black, W. C., Babin, B. J. & Anderson, R. E. (2010) *Multivariate data analysis* (7th ed.). Upper Saddle River, New Jersey: Pearson Educational International.
- Higgins, K. S., Birnie, K. A., Chambers, C. T., Wilson, A. C., Caes, L., Clark, A. J., ... & Campbell-Yeo, M. (2015). Offspring of parents with chronic pain: a systematic review and meta-analysis of pain, health, psychological, and family outcomes. *Pain*, 156(11), 22-56.
- “Honzik Parent Rating Scale.” (n.d.). [IGS Data] The Guidance Study Data-Set (G8700).
- Horowitz, E. C. (1981). Popularity, decentering ability, and role-taking skills in learning disabled and normal children. *Learning Disability Quarterly*, 4(1), 23-30.
- Huitt, W., & Hummel, J. (2003). Piaget's theory of cognitive development. *Educational Psychology Interactive*, 3(2), 1-5.

- Jacklin, C. N., DiPietro, J. A., & Maccoby, E. E. (1984). Sex-typing behavior and sex-typing pressure in child/parent interaction. *Archives of Sexual Behavior, 13*(5), 413-425.
- Jenkins, S. R. (2017). Not your same old story: New rules for thematic apperceptive techniques (TATs). *Journal of Personality Assessment, 99*(3), 238-253.
- Jenkins, S. R. (2008). Teaching how to learn reliable scoring In S. R. Jenkins (Ed.), *Handbook of clinical scoring systems for thematic apperceptive techniques* (pp. 3-38). New York: Lawrence Erlbaum.
- Jenkins, S. R., Dobbs, L., & Leeper, M. (2015). Using the Thematic Apperception Test to assess interpersonal decentering in violent relationships. *Rorschachiana, 36*(2), 156–179. <https://doi.org/10.1027/1192-5604/a000064>
- Jenkins, S. R., Fondren, A. H., & Herrington, R. (2022). Interpersonal decentering and interpersonal problems: Testing the multi-method utility of person-situation interactions in thematic apperception tests. *Journal of Personality Assessment, 104*(3), 320-334. doi.org/10.1080/00223891.2021.19191
- Jenkins, S. R., Shamji, J. F., Straup, M. L., & Boals, A. (2022). Beyond traits and states: Interpersonal decentering is also activated social information processing. *Personality and Individual Differences, 186*, 111332.
- Jenkins, S. R., Siefert, C., & Weber, K. M. (2020). Interpersonal Decentering and person-situation interaction: Is it all in the cards? What’s the story? *Journal of Personality Assessment, 102*(4), 551-562.
- Jones, S. S. (1996). Imitation or exploration? Young infants’ matching of adults’ oral gestures. *Child Development, 67*(5), 1952-1969.
- Kallner, A. (2018). Formulas. In A. Kallner (Eds.), *Laboratory statistics: Methods in chemistry and health sciences* (pp. 1-140) Elsevier.
- Karniol, R., Gabay, R., Ochion, Y., & Harari, Y. (1998). Is gender or gender-role orientation a better predictor of empathy in adolescence?. *Sex Roles, 39*(1), 45-59.
- Kernberg, O. F. (1995). *Object relations theory and clinical psychoanalysis*. Jason Aronson.
- Kesselring, T., & Müller, U. (2011). The concept of egocentrism in the context of Piaget’s theory. *New Ideas in Psychology, 29*(3), 327-345.
- Klaus, M. H., & Kennell, J. H. (1976). *Maternal-infant bonding: The impact of early separation or loss of family development*. C.V. Mosby Company; St. Louis, MO, USA.
- Klein, M. (1933). The psycho-analysis of children. *The Sociological Review, 25*(3), 296-298.
- Kramer, S., & Prall, R. C. (1978). The role of the father in the preoedipal years. *Journal of the American Psychoanalytic Association, 26*(1), 143-161.

- Kühn, S., Kugler, D. T., Schmalen, K., Weichenberger, M., Witt, C., & Gallinat, J. (2019). Does playing violent video games cause aggression? A longitudinal intervention study. *Molecular Psychiatry*, 24(8), 1220-1234.
- Lapsley, D. K., Rice, K. G., & FitzGerald, D. P. (1990). Adolescent attachment, identity, and adjustment to college: Implications for the continuity of adaptation hypothesis. *Journal of Counseling & Development*, 68(5), 561-565.
- Laranjo, J., Bernier, A., Meins, E., & Carlson, S. M. (2010). Early manifestations of children's theory of mind: The roles of maternal mind-mindedness and infant security of attachment. *Infancy*, 15(3), 300-323.
- Leaper, C., & Friedman, C. K. (2007). The socialization of gender. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of socialization: Theory and research* (pp. 561-587). The Guilford Press.
- Leeper, M., Dobbs, L., & Jenkins, S. R. (2008). *Melvin Feffer's interpersonal decentering*. In S. R. Jenkins (Ed.), *Handbook of clinical scoring systems for thematic apperceptive techniques* (p. 149-156). Mahwah, NJ: Lawrence Erlbaum.
- Li, X., Bian, C., Chen, Y., Huang, J., Ma, Y., Tang, L., Yan, Q., Ye, X., & Yu, Y. (2015). Indirect aggression and parental attachment in early adolescence: Examining the role of perspective taking and empathetic concern. *Personality and Individual Differences*, 86, 499-503.
- Little, R. J. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association*, 83(404), 1198-1202.
- Lundy, B. L. (2013). Paternal and maternal mind-mindedness and preschoolers' theory of mind: The mediating role of interactional attunement. *Social Development*, 22(1), 58-74.
- MacDonald, K., & Parke, R. D. (1984). Bridging the gap: Parent-child play interaction and peer interactive competence. *Child Development*, 1265-1277.
- MacDonald, K., & Parke, R. D. (1986). Parent-child physical play: The effects of sex and age of children and parents. *Sex Roles*, 15(7-8), 367-378.
- Mathews, S., Onwumere, J., Bissoli, S., Ruggeri, M., Kuipers, E., & Valmaggia, L. (2016). Measuring attachment and parental bonding in psychosis and its clinical implications. *Epidemiology and Psychiatric Sciences*, 25(2), 142-149.
- Matsuoka, N., Uji, M., Hiramura, H., Chen, Z., Shikai, N., Kishida, Y., & Kitamura, T. (2006). Adolescents' attachment style and early experiences: A gender difference. *Archives of Women's Mental Health*, 9(1), 23-29.

- Meredith, P., Ownsworth, T., & Strong, J. (2008). A review of the evidence linking adult attachment theory and chronic pain: Presenting a conceptual model. *Clinical psychology review, 28*(3), 407-429.
- Meins, E. (1997) *Security of attachment and the social development of cognition*. Psychology Press.
- Meins, E., Fernyhough, C., Fradley, E., & Tuckey, M. (2001). Rethinking maternal sensitivity: Mothers' comments on infants' mental processes predict security of attachment at 12 months. *The Journal of Child Psychology and Psychiatry and Allied Disciplines, 42*(5), 637-648.
- Meltzoff, A.N., & Moore, M.K. (1977). Imitation of facial and manual gestures by human neonates. *Science, 198*, 75–78.
- Meltzoff, A.N., & Moore, M.K. (1983). Newborn infants imitate adult facial gestures. *Child Development, 54*, 702–709.
- Meltzoff, A. N. (1999). Origins of theory of mind, cognition and communication. *Journal of Communication Disorders, 32*(4), 251-269.
- Mikulincer, M., & Shaver, P. R. (2019). Attachment orientations and emotion regulation. *Current Opinion in Psychology, 25*, 6-10.
- Miller, G. A. (2003). The cognitive revolution: A historical perspective. *Trends in Cognitive Sciences, 7*(3), 141-144.
- Moll, H., & Meltzoff, A. N. (2011). How does it look? Level 2 perspective-taking at 36 months of age. *Child Development, 82*(2), 661-673.
- Morgan, C. D., & Murray, H. A. (1935). A method for investigating fantasies: The Thematic Apperception Test. *Archives of Neurology & Psychiatry, 34*(2), 289-306.
- Murray, H. A. (1943). *Thematic Apperception Test manual*. Cambridge, MA: Harvard University Press.
- Nelson, K. (1999). Event representations, narrative development and internal working models. *Attachment & Human Development, 1*(3), 239-252.
- Ogden, T. H. (2002). New reading of the origins of object relations theory. *International Journal of Psychoanalysis, 83*(4), 767-782.
- Panfile, T. M., & Laible, D. J. (2012). Attachment security and child's empathy: The mediating role of emotion regulation. *Merrill-Palmer Quarterly (1982-), 1*-21.
- Paquette, D. (2004). Theorizing the father-child relationship: Mechanisms and developmental outcomes. *Human Development, 47*(4), 193-219.

- “Parent and Family Situation.” (n.d.). [IGS Data] The Guidance Study Data-Set (G8400)
- Parker, G., Tupling, H., Brown, L. B. (1979). A parental bonding instrument. *British Journal of Medical Psychology*, 52(1), 1-10.
- Pascuzzo, K., Moss, E., & Cyr, C. (2015). Attachment and emotion regulation strategies in predicting adult psychopathology. *Sage Open*, 5(3), 1-15.
<https://journals.sagepub.com/doi/pdf/10.1177/2158244015604695>
- Peisach, E., & Hardeman, M. (1985). Imaginative play and logical thinking in young children. *The Journal of Genetic Psychology*, 146(2), 233-248.
- Petrie, K. A., Chen, J. N., Miears, H., Grimes, J. S., & Zumwalt, M. (2022). Gender differences in seeking health care and postintervention pain outcomes in foot and ankle orthopedic patients. *Women’s Health Reports*, 3(1), 500-507.
- “Physical Exam Health Ratings.” (n.d.). [IGS Data] The Guidance Study Data-Set (G1315)
- Piaget, J. (2003). *The psychology of intelligence*. Routledge. (Original work published 1950)
- Piaget, J. (1997). *The moral judgement of the child*. Simon and Schuster. (Original work published 1932)
- Piaget, J. (1972). Intellectual evolution from adolescence to adulthood. *Human Development*, 15(1), 1-12.
- Piaget, J., & Inhelder, B. (2008). *The psychology of the child*. Basic Books. (Original work published 1969)
- Plante, C., & Anderson, C. A. (2017). Media, violence, aggression, and antisocial behavior: Is the link causal?. *The Wiley Handbook of Violence and Aggression* (pp. 1-12). Wiley.
- Rieppi, R., Greenhill, L. L., Ford, R. E., Chuang, S., Wu, M., Davies, M., ... & Wigal, T. (2002). Socioeconomic status as a moderator of ADHD treatment outcomes. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41(3), 269-277.
- Rubin, K. H. (1973). Egocentrism in childhood: A unitary construct?. *Child Development*, 102-110.
- Sabbagh, M. A., Xu, F., Carlson, S. M., Moses, L. J., & Lee, K. (2006). The development of executive functioning and theory of mind: A comparison of Chinese and U.S. preschoolers. *Psychological Science*, 17, 74–81.
- Sang, S. A., & Nelson, J. A. (2017). The effect of siblings on children’s social skills and perspective taking. *Infant and Child Development*, 26(6), 1-10.

- Serdar, C. C., Cihan, M., Yücel, D., & Serdar, M. A. (2021). Sample size, power and effect size revisited: simplified and practical approaches in pre-clinical, clinical and laboratory studies. *Biochemia medica*, 31(1), 27-53.
- Steele, H. (2004). The social matrix reloaded: An attachment perspective on Carpendale & Lewis. *Behavioral and Brain Sciences*, 27(1), 124-125.
- Stewart, R. B., & Marvin, R. S. (1984). Sibling relations: The role of conceptual perspective-taking in the ontogeny of sibling caregiving. *Child Development*, 1322-1332.
- Strober, M. (1979). The structuring of interpersonal relations in schizophrenic adolescents: A decentering analysis of Thematic Apperception Test stories. *Journal of Abnormal Child Psychology*, 7, 309-316.
- Symons, D. K., & Clark, S. E. (2000). A longitudinal study of mother-child relationships and theory of mind in the preschool period. *Social Development*, 9(1), 3-23.
- Tan-Niam, C. (2003). Thematic fantasy play: Effects on the perspective-taking ability of preschool children. *International Journal of Early Years Education*, 2(1), 5-16.
<https://doi.org/10.1080/09669760.2003.10807102>
- Van IJzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2010). Invariance of adult attachment across gender, age, culture, and socioeconomic status?. *Journal of Social and Personal Relationships*, 27(2), 200-208.
- Vanwoerden, S., Kalpakci, A. H., & Sharp, C. (2015). Experiential avoidance mediates the link between maternal attachment style and theory of mind. *Comprehensive Psychiatry*, 57, 117-124.
- Vygotsky, L. S. (1980). *Mind in society: The development of higher psychological processes*. Harvard University Press (Original work published 1978)
- Vygotsky, L. S. (1929). II. The problem of the cultural development of the child. *The Pedagogical Seminary and Journal of Genetic Psychology*, 36(3), 415-434.
- Westen, D., Lohr, N., Silk, K. R., Gold, L., & Kerber, K. (1990). Object relations and social cognition in borderlines, major depressives, and normal: A Thematic Apperception Test analysis. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 2(4), 355-364.
- Wilhelm, K., Gillis, I., & Parker, G. (2016). Parental bonding and adult attachment style: The relationship between four category models. *International Journal of Women's Health and Wellness*, 2(1), 1-7.
- Winnicott, D. W. (1958). The capacity to be alone. *International Journal of Psycho-Analysis*, 39, 416-420.

Wu, S., & Keysar, B. (2007). The effect of culture on perspective taking. *Psychological Science*, 18(7), 600-606.

Youngblade, L. M., & Belsky, J. (1992). Parent-child antecedents of 5-year-olds' close friendships: A longitudinal analysis. *Developmental Psychology*, 28(4), 700-713.

Table 1

Decentering Criteria

Category	Name	Example
1	Undifferentiated relationship	"They like board games."
2	Nonreactive directional relationship	"He gives her medicine."
3	Reactive directional relationship	"He gives her medicine which she appreciates."
4	Interactive directional relationship	"She gives him gifts that he likes. She is pleased."
5	Internalized other, simple representation	"She plans on asking him questions later."
6	Internalized other, surface characteristics	"She intends on telling him how he behaves."
7	Internalized other, internalized state	"He plans on asking her questions when she is calm."
8	Internalized other's internalized other	"She plans on telling him that Ally dislikes playing games with him."
9	Internalized self-other interaction	"She felt she was right in telling him that."

Note. The descriptors are from Feffer et al. (2008) *Handbook of clinical scoring systems for thematic apperceptive techniques*.

Table 2

Attrition Table

Variables of Interest	21 months	Age 7	Age 10	Age 5-10	Age 13	Age 11-17	Age 12.5	Age 18
Decentering	---	---	---	---	---	---	<i>N</i> = 73 Boys <i>n</i> = 37 Girls <i>n</i> = 36	<i>N</i> = 51 Boys <i>n</i> = 22 Girls <i>n</i> = 29
Mother-Child Bonds	<i>N</i> = 105 Boys <i>n</i> = 51 Girls <i>n</i> = 54	---	---	---	---	---	Boys <i>n</i> = 36 Girls <i>n</i> = 35	Boys <i>n</i> = 21 Girls <i>n</i> = 28
Father-Child Bonds	<i>N</i> = 104 Boys <i>n</i> = 51 Girls <i>n</i> = 53	---	---	---	---	---	Boys <i>n</i> = 36 Girls <i>n</i> = 35	Boys <i>n</i> = 21 Girls <i>n</i> = 28
Conflict with Relatives	<i>N</i> = 101 Boys <i>n</i> = 49 Girls <i>n</i> = 52	---	---	---	---	---	Boys <i>n</i> = 34 Girls <i>n</i> = 34	Boys <i>n</i> = 21 Girls <i>n</i> = 27
Mother's Nervous Instability	<i>N</i> = 105 Boys <i>n</i> = 51 Girls <i>n</i> = 54	---	---	---	---	---	Boys <i>n</i> = 36 Girls <i>n</i> = 35	Boys <i>n</i> = 21 Girls <i>n</i> = 28
Father's Nervous Instability	<i>N</i> = 105 Boys <i>n</i> = 51 Girls <i>n</i> = 54	---	---	---	---	---	Boys <i>n</i> = 36 Girls <i>n</i> = 35	Boys <i>n</i> = 21 Girls <i>n</i> = 28
Skilled Imaginative Play	---	<i>N</i> = 99 Boys <i>n</i> = 48 Girls <i>n</i> = 51	<i>N</i> = 99 Boys <i>n</i> = 49 Girls <i>n</i> = 50	---	<i>N</i> = 71 Boys <i>n</i> = 33 Girls <i>n</i> = 38	---	Age 7 Boys <i>n</i> = 35 Girls <i>n</i> = 35	Age 7 Boys <i>n</i> = 20 Girls <i>n</i> = 28
							Age 10 Boys <i>n</i> = 36 Girls <i>n</i> = 35	Age 10 Boys <i>n</i> = 21 Girls <i>n</i> = 28

(table continues)

Variables of Interest	21 months	Age 7	Age 10	Age 5-10	Age 13	Age 11-17	Age 12.5	Age 18
								Age 13 Boys <i>n</i> = 11 Girls <i>n</i> = 24
								Age 7 Boys <i>n</i> = 20 Girls <i>n</i> = 28
Introspection	---	<i>N</i> = 99 Boys <i>n</i> = 48 Girls <i>n</i> = 51	<i>N</i> = 99 Boys <i>n</i> = 49 Girls <i>n</i> = 50	---	<i>N</i> = 71 Boys <i>n</i> = 33 Girls <i>n</i> = 38	---	Age 7 Boys <i>n</i> = 35 Girls <i>n</i> = 35 Age 10 Boys <i>n</i> = 36 Girls <i>n</i> = 35	Age 10 Boys <i>n</i> = 21 Girls <i>n</i> = 28 Age 13 Boys <i>n</i> = 11 Girls <i>n</i> = 24
Health Reports	---	---	---	<i>N</i> = 105 Boys <i>n</i> = 51 Girls <i>n</i> = 54	---	<i>N</i> = 103 Boys <i>n</i> = 50 Girls <i>n</i> = 53	Age 5-10 years Boys <i>n</i> = 36 Girls <i>n</i> = 35	Age 5-10 years Boys <i>n</i> = 21 Girls <i>n</i> = 28 Age 11-17 years Boys <i>n</i> = 21 Girls <i>n</i> = 28

Table 3

Frequencies of Variables of Interest

Variable of Interest	<i>n</i>	%	Mean	SD	Skew	Kurtosis
Sex ¹	105	---	1.51	.50	-.058	-2.04
Male	51	48.6	1.00	---	---	---
Female	54	51.4	2.00	---	---	---
Social Class ²	97	---	1.67	.47	-.74	-1.49
Upper Class	65	61.9				
Middle Class	32	30.5				
Decentering average at age 12.5 years ³	73	70.5	2.98	1.64	1.87	3.88
Decentering average at age 18 years ⁴	51	48.6	2.91	1.50	1.98	4.97
Mother-child bond ⁵	105	---	2.20	.61	-.096	-.40
Score 1.00-1.75	24	23.0	---	---	---	---
Score 2.00-2.75	63	60.0	---	---	---	---
Score 3.00-3.50	18	17.2	---	---	---	---
Father-child bond ⁶	104	---	2.36	.79	.37	.41
Score 1.00-1.75	22	21.0	---	---	---	---
Score 2.00-2.75	53	50.5	---	---	---	---

*(table continues)*¹ Sex: 1 = Males, 2 = Females² Class: 1 = Middle Class, 2 = Upper Class³ Decentering Average at Age 12 Years: 1.00 = low decentering, 9.00 high decentering⁴ Decentering Average at Age 18 Years: 1.00 = low decentering, 9.00 high decentering⁵ Mother-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment⁶ Father-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment⁷ Conflict with Relatives: 1 = Great companionability, 2 = Enjoys relatives, 3 = occasional annoyance, 4 = Considerable stress, 5 = Serious conflict⁸ Mother's Nervous Instability: 1 = Exceptionally stable, 2 = Above average, 3 = Average, 4 = Occasional upsets, 5 = Excitable and tense, 6 = Neurotic, 7 = Psychotic⁹ Father's Nervous Instability: 1 = Very stable, 2 = Above avg., 3 = Avg., 4 = Occasional upsets, 5 = Excitable/tense, 6 = Neurotic, 7 = Psychotic¹⁰ Skilled Imaginative Play at age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative¹¹ Introspection at Age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative¹² Health Ages 5-10 11-17: 1 = Excellent health, 2 = Good health, 3 = Fair health, 4 = Poor health, 5 = Bad health

Variable of Interest	<i>n</i>	%	Mean	SD	Skew	Kurtosis
Score 3.00-3.75	25	23.8	---	---	---	---
Score 4.00	3	2.9	---	---	---	---
Score 5.00	1	1.0	---	---	---	---
Conflict with relatives ⁷	101	---	2.92	1.22	-.27	-1.14
Mother's nervous instability ⁸	105	---	3.97	1.18	-.24	-.28
Father's nervous instability ⁹	105	---	3.84	1.29	.24	-.88
Skilled imaginative play at age 7 years ¹⁰	99	---	4.68	1.46	-.29	-.69
Skilled imaginative play at age 10 years ¹⁰	99	---	4.88	1.47	-.46	-.10
Skilled imaginative play at age 13 years ¹⁰	71	---	4.64	1.68	.09	-.98
Introspection at age 7 years ¹¹	99	---	5.03	1.61	.24	-.34
Introspection at age 10 years ¹¹	99	---	5.14	1.93	.16	-.92
Introspection at age 13 years ¹¹	71	---	4.37	1.44	.25	-.74
Health ages 5-10 years ¹²	105	---	3.06	.53	.34	.50
Health ages 11-17 years ¹²	103	---	2.69	.58	.460	.45

Table 4

Bivariate Correlations for both Boys and Girls

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Gender ¹	1										
2. Social Class ²	.12	1									
3. Decentering average at age 12.5 ³	.26*	-.07	1								
4. Decentering average at age 18 ⁴	.23	.10	.07	1							
5. Mother-child bond ⁵	-.04	-.08	-.03	.03	1						
6. Father-child bond ⁶	-.13	.09	-.10	-.08	.43**	1					
7. Conflict with relatives ⁷	-.04	-.00	-.19	-.07	.12	.08	1				
8. Mother's nervous instability ⁸	-.02	.04	-.17	-.10	.04	.11	.28**	1			
9. Father's nervous instability ⁹	.16	-.03	-.02	.03	-.12	.31**	.18	.11	1		
10. Skilled imaginative play at age 7 ¹⁰	.00	-.22*	-.35**	-.19	.11	-.08	.05	-.01	.01	1	
11. Introspection at age 7 ¹¹	.15	-.10	.00	-.06	-.07	.04	-.05	-.02	.02	.08	1

*(table continues)*¹ Sex: 1 = Males, 2 = Females² Class: 1 = Middle Class, 2 = Upper Class³ Decentering Average at Age 12 Years: 1.00 = low decentering, 9.00 high decentering⁴ Decentering Average at Age 18 Years: 1.00 = low decentering, 9.00 high decentering⁵ Mother-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment⁶ Father-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment⁷ Conflict with Relatives: 1 = Great companionability, 2 = Enjoys relatives, 3 = occasional annoyance, 4 = Considerable stress, 5 = Serious conflict⁸ Mother's Nervous Instability: 1 = Exceptionally stable, 2 = Above average, 3 = Average, 4 = Occasional upsets, 5 = Excitable and tense, 6 = Neurotic, 7 = Psychotic⁹ Father's Nervous Instability: 1 = Very stable, 2 = Above avg., 3 = Avg., 4 = Occasional upsets, 5 = Excitable/tense, 6 = Neurotic, 7 = Psychotic¹⁰ Skilled Imaginative Play at age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative¹¹ Introspection at Age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative¹² Health Ages 5-10 11-17: 1 = Excellent health, 2 = Good health, 3 = Fair health, 4 = Poor health, 5 = Bad health

Variables	1	2	3	4	5	6	7	8	9	10	11
12. Skilled imaginative play at age 10 ¹⁰	.03	-.36**	.03	.12	.11	.03	-.22*	-.11	-.02	.39**	.05
13. Introspection at age 10 ¹¹	.26**	-.12	.04	-.04	.14	.12	.14	.00	.01	-.01	.35**
14. Skilled imaginative play at 13 ¹⁰	.08	.06	-.13	-.28	-.11	-.14	-.03	.06	-.00	.16	-.08
15. Introspection at age 13 ¹¹	-.02	.18	-.02	.01	-.03	-.01	.09	.14	-.06	.02	-.19
16. Health ages 5-10 ¹²	.02	.14	-.06	-.03	.03	.08	.04	.03	.05	-.22*	.07
17. Health ages 11-17 ¹²	.38**	-.06	.12	.17	-.13	.07	.16	.11	.13	-.14	.21*
Variables	12	13	14	15	16	17					
12. Skilled imaginative play at age 10 ¹⁰	1										
13. Introspection at age 10 ¹¹	.06	1									
14. Skilled imaginative play at 13 ¹⁰	-.06	-.12	1								
15. Introspection at age 13 ¹¹	.06	-.12	-.02	1							
16. Health ages 5-10 ¹²	.07	.01	.05	-.01	1						
17. Health ages 11-17 ¹²	-.05	.16	.10	.22	.24*	1					

*Correlation significant at 0.05 level (2-tailed). **Correlation is significant at 0.01 level (2-tailed)

Table 5

Bivariate Correlations for Boys

Variables	1	2	3	4	5	6	7	8
1. Social Class ¹	1							
2. Decentering average at age 12.5 ²	-.23	1						
3. Decentering average at age 18 ³	.36	.08	1					
4. Mother-child bond ⁴	-.11	.06	.15	1				
5. Father-child bond ⁵	.23	-.06	.24	.29*	1			
6. Conflict with relatives ⁶	-.05	-.28	.06	.31*	.05	1		
7. Mother's nervous instability ⁷	.00	-.48**	-.03	.03	.19	.36*	1	
8. Father's nervous instability ⁸	.03	-.00	.17	-.10	.34*	.24	.17	1
9. Skilled imaginative play at age 7 ⁹	-.36*	-.10	-.08	.12	-.16	.14	.01	-.01
10. Introspection at age 7 ¹⁰	-.25	.12	-.20	-.16	-.01	-.17	-.06	-.01
11. Skilled imaginative play at age 10 ⁹	-.37*	.27	.07	-.00	-.07	-.33*	-.23	.02

*(table continues)*¹ Class: 1 = Middle Class, 2 = Upper Class² Decentering Average at Age 12 Years: 1.00 = low decentering, 9.00 high decentering³ Decentering Average at Age 18 Years: 1.00 = low decentering, 9.00 high decentering⁴ Mother-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment⁵ Father-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment⁶ Conflict with Relatives: 1 = Great companionship, 2 = Enjoys relatives, 3 = occasional annoyance, 4 = Considerable stress, 5 = Serious conflict⁷ Mother's Nervous Instability: 1 = Exceptionally stable, 2 = Above average, 3 = Average, 4 = Occasional upsets, 5 = Excitable and tense, 6 = Neurotic, 7 = Psychotic⁸ Father's Nervous Instability: 1 = Very stable, 2 = Above avg., 3 = Avg., 4 = Occasional upsets, 5 = Excitable/tense, 6 = Neurotic, 7 = Psychotic⁹ Skilled Imaginative Play at age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative¹⁰ Introspection at Age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative¹¹ Health Ages 5-10 11-17: 1 = Excellent health, 2 = Good health, 3 = Fair health, 4 = Poor health, 5 = Bad health

Variables	1	2	3	4	5	6	7	8
12. Introspection at age 10 ¹⁰	-.35*	.14	-.19	.17	.04	.04	-.01	-.06
13. Skilled imaginative play at age 13 ⁹	.06	-.02	-.06	-.03	-.14	.22	.09	-.06
14. Introspection at age 13 ¹⁰	.00	-.20	-.04	-.31	-.17	.03	.32	-.03
15. Health ages 5-10 ¹¹	.21	.07	-.20	-.17	-.00	-.17	-.03	.02
16. Health ages 11-17 ¹¹	-.21	-.03	-.33	-.12	.19	.15	.21	.21
Variables	9	10	11	12	13	14	15	16
9. Skilled imaginative play at age 7 ⁹	1							
10. Introspection at age 7 ¹⁰	.02	1						
11. Skilled imaginative play at age 10 ⁹	.33*	.27	1					
12. Introspection at age 10 ¹⁰	.10	.37*	.32*	1				
13. Skilled imaginative play at age 13 ⁹	.06	-.18	-.14	-.07	1			
14. Introspection at age 13 ¹⁰	.20	-.11	.12	-.19	.26	1		
15. Health ages 5-10 ¹¹	-.39**	-.03	-.04	-.16	.22	-.17	1	
16. Health ages 11-17 ¹¹	.00	.24	-.01	.13	.31	.19	.28	1

*Correlation significant at 0.05 level (2-tailed). **Correlation is significant at 0.01 level (2-tailed)

Table 6

Bivariate Correlations for Girls

Variables	1	2	3	4	5	6	7	8
1. Social Class ¹	1							
2. Decentering average at age 12.5 ²	.00	1						
3. Decentering average at age 18 ³	-.07	.01	1					
4. Mother-child bond ⁴	-.04	-.13	-.00	1				
5. Father-child bond ⁵	-.03	-.10	-.23	.59**	1			
6. Conflict with relatives ⁶	.05	-.16	-.09	-.06	.11	1		
7. Mother's nervous instability ⁷	.10	.11	-.07	.05	.01	.20	1	
8. Father's nervous instability ⁸	-.15	-.01	-.09	-.14	.32*	.15	.03	1
9. Skilled imaginative play at age 7 ⁹	-.06	-.49**	-.20	.11	.01	-.04	-.03	.03
10. Introspection at age 7 ¹⁰	.01	-.13	-.08	.02	.19	.05	.03	-.00
11. Skilled imaginative play at age 10 ⁹	-.37*	-.13	.13	.23	.15	-.11	.03	-.08

(table continues)

¹ Class: 1 = Middle Class, 2 = Upper Class

² Decentering Average at Age 12 Years: 1.00 = low decentering, 9.00 high decentering

³ Decentering Average at Age 18 Years: 1.00 = low decentering, 9.00 high decentering

⁴ Mother-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment

⁵ Father-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment

⁶ Conflict with Relatives: 1 = Great companionship, 2 = Enjoys relatives, 3 = occasional annoyance, 4 = Considerable stress, 5 = Serious conflict

⁷ Mother's Nervous Instability: 1 = Exceptionally stable, 2 = Above average, 3 = Average, 4 = Occasional upsets, 5 = Excitable and tense, 6 = Neurotic, 7 = Psychotic

⁸ Father's Nervous Instability: 1 = Very stable, 2 = Above avg., 3 = Avg., 4 = Occasional upsets, 5 = Excitable/tense, 6 = Neurotic, 7 = Psychotic

⁹ Skilled Imaginative Play at age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative

¹⁰ Introspection at Age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative

¹¹ Health Ages 5-10 11-17: 1 = Excellent health, 2 = Good health, 3 = Fair health, 4 = Poor health, 5 = Bad health

Variables	1	2	3	4	5	6	7	8
12. Introspection at age 10 ¹⁰	.08	-.14	-.11	.15	.29*	.28	.03	-.02
13. Skilled imaginative play at age 13 ⁹	.05	-.25	-.35	-.17	-.11	-.30	.02	.02
14. Introspection at age 13 ¹⁰	.30	.07	.04	.17	.11	.13	-.02	-.08
15. Health ages 5-10 ¹¹	.06	-.22	.13	.24	.18	.26	.12	.07
16. Health ages 11-17 ¹¹	.01	.00	.33*	-.12	.07	.22	.01	-.08
Variables	9	10	11	12	13	14	15	16
9. Skilled imaginative play at age 7 ⁹	1							
10. Introspection at age 7 ¹⁰	.14	1						
11. Skilled imaginative play at age 10 ⁹	.43**	-.11	1					
12. Introspection at age 10 ¹⁰	-.12	.30*	-.18	1				
13. Skilled imaginative play at age 13 ⁹	.26	-.02	.00	-.21	1			
14. Introspection at age 13 ¹⁰	-.12	-.23	.02	-.08	-.24	1		
15. Health ages 5-10 ¹¹	-.02	.15	.19	.18	-.14	.13	1	
16. Health ages 11-17 ¹¹	-.32*	.11	-.13	.00	-.16	.31	.21	1

*Correlation significant at 0.05 level (2-tailed). **Correlation is significant at 0.01 level (2-tailed)

Table 7

Independent Samples t-Test of Gender and Variables of Interest

Variables of Interest	Boys			Girls			<i>t</i> -test	<i>p</i> -Value
	<i>n</i>	Mean(SD)	<i>SE</i>	<i>n</i>	Mean(SD)	<i>SE</i>		
Average decentering scores at age 12.5 ¹	37	2.54(1.10)	.18	36	3.24(1.53)	.26	-2.23	.029
Average decentering scores at age 18 ²	22	2.52(1.04)	.22	29	3.12(1.47)	.27	-1.63	.110
Mother-child bond ³	51	2.23(.61)	.09	54	2.18(.60)	.08	.38	.71
Father-child bond ⁴	49	2.31(.88)	.13	53	2.32(1.02)	.14	-.05	.96
Conflict with relatives ⁵	49	2.97(1.20)	.17	52	2.87(1.25)	.17	.41	.69
Mother's nervous instability ⁶	51	3.99(1.33)	.19	54	3.96(1.02)	.14	.16	.87
Father's nervous instability ⁷	51	3.64(1.36)	.19	54	4.04(1.20)	.16	-1.61	.11
Skilled imaginative play at age 7 ⁸	48	4.68(1.53)	.22	51	4.68(1.40)	.20	.00	1.00
Skilled imaginative play at age 10 ⁸	49	4.83(1.41)	.20	50	4.93(1.54)	.22	-.31	.76
Skilled imaginative play at age 13 ⁸	33	4.50(1.80)	.31	38	4.76(1.58)	.26	-.64	.52
Introspection at age 7 ⁹	48	4.79(1.45)	.21	51	5.27(1.73)	.24	-1.50	.136
Introspection at age 10 ⁹	49	4.63(1.81)	.26	50	5.63(1.95)	.28	-2.67	.009
Introspection at age 13 ⁹	33	4.39(1.27)	.22	38	4.35(1.59)	.26	.14	.89
Health ages 5-10 years ¹⁰	51	3.05(.57)	.08	54	3.07(.51)	.07	-.22	.83
Health ages 11-17 years ¹⁰	50	2.47(.57)	.08	53	2.90(.51)	.07	-4.09	<.001

¹Decentering Average at Age 12 Years: 1.00 = low decentering, 9.00 high decentering

²Decentering Average at Age 18 Years: 1.00 = low decentering, 9.00 high decentering

³ Mother-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment

⁴ Father-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment

⁵ Conflict with Relatives: 1 = Great companionship, 2 = Enjoys relatives, 3 = occasional annoyance, 4 = Considerable stress, 5 = Serious conflict

⁶ Mother's Nervous Instability: 1 = Exceptionally stable, 2 = Above average, 3 = Average, 4 = Occasional upsets, 5 = Excitable and tense, 6 = Neurotic, 7 = Psychotic

⁷ Father's Nervous Instability: 1 = Very stable, 2 = Above avg., 3 = Avg., 4 = Occasional upsets, 5 = Excitable/tense, 6 = Neurotic, 7 = Psychotic

⁸ Skilled Imaginative Play at age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative

⁹ Introspection at Age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative

¹⁰ Health Ages 5-10 11-17: 1 = Excellent health, 2 = Good health, 3 = Fair health, 4 = Poor health, 5 = Bad health

Table 8

Independent Samples t-Test of Socioeconomic Status and Variables of Interest

Variables of Interest	Middle Class			Upper Class			<i>t</i> -test	<i>p</i> -Value
	<i>n</i>	Mean(SD)	<i>SE</i>	<i>n</i>	Mean(SD)	<i>SE</i>		
Average decentering scores at age 12.5 ¹	24	2.95(1.19)	.24	45	2.77(1.43)	.21	.53	.600
Average decentering scores at age 18 ²	15	2.65(1.26)	.33	34	2.90(1.38)	.24	-.60	.554
Mother-child bond ³	32	2.28(.51)	.09	65	2.17(.66)	.08	.82	.415
Father-child bond ⁴	32	2.27(.68)	.12	65	2.41(.85)	.10	-.90	.373
Conflict with relatives ⁵	30	2.95(1.23)	.23	63	2.94(1.26)	.16	.03	.973
Mother's nervous instability ⁶	32	3.94(.99)	.18	65	4.04(1.21)	.15	-.38	.707
Father's nervous instability ⁷	32	3.89(1.43)	.25	65	3.81(1.20)	.15	.31	.760
Skilled imaginative play at age 7 ⁸	31	5.11(1.33)	.24	62	4.42(1.48)	.19	2.19	.031
Skilled imaginative play at age 10 ⁸	31	5.64(1.23)	.22	62	4.51(1.45)	.18	3.71	<.001
Skilled imaginative play at age 13 ⁸	20	4.49(1.52)	.34	49	4.71(1.78)	.25	-.49	.624
Introspection at age 7 ⁹	31	5.21(1.25)	.23	62	4.88(1.77)	.22	.92	.360
Introspection at age 10 ⁹	31	5.34(1.78)	.32	62	4.87(1.97)	.25	1.13	.269
Introspection at age 13 ⁹	20	3.96(1.38)	.31	49	4.52(1.43)	.20	-1.48	.143
Health ages 5-10 years ¹⁰	32	2.96(.54)	.09	65	3.12(.55)	.07	-1.37	.175
Health ages 11-17 years ¹⁰	32	2.73(.56)	.10	63	2.66(.58)	.07	.59	.559

¹Decentering Average at Age 12 Years: 1.00 = low decentering, 9.00 high decentering

²Decentering Average at Age 18 Years: 1.00 = low decentering, 9.00 high decentering

³ Mother-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment

⁴ Father-Child Bond: 1 = Extremely close relationship, 2 = Closer than average, 3 = Taken for-granted, 4 = Little attachment, 5 = No attachment

⁵ Conflict with Relatives: 1 = Great companionship, 2 = Enjoys relatives, 3 = occasional annoyance, 4 = Considerable stress, 5 = Serious conflict

⁶ Mother's Nervous Instability: 1= Exceptionally stable, 2 = Above average, 3 = Average, 4 = Occasional upsets, 5 = Excitable and tense, 6 = Neurotic, 7 = Psychotic

⁷ Father's Nervous Instability: 1= Very stable, 2 = Above avg., 3 = Avg., 4 = Occasional upsets, 5 = Excitable/tense, 6 = Neurotic, 7 = Psychotic

⁸ Skilled Imaginative Play at age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative

⁹ Introspection at Age 7, 10, 13: Scores 1 – 3 least representative, Scores 4 – 6 moderately representative, Scores 7 – 9 most representative

¹⁰ Health Ages 5-10 11-17: 1 = Excellent health, 2 = Good health, 3 = Fair health, 4 = Poor health, 5 = Bad health

Table 9

PROCESS Moderation Analysis Interaction Effect and Conditional Effects Hypothesis 2

	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i> -Value
Hypothesis 2				
Interaction effect: Father's nervous instability moderator of mother-son bond at age 21 months and decentering 18 years	-.59	.27	-2.20	.041
Conditional effect: Low father nervous instability	.90	.44	2.05	.055
Conditional effect: High father nervous instability	-1.46	.81	-1.80	.089
Hypothesis 4				
Interaction effect: Introspection age 7 moderator of father-son bond at 21 months and decentering age 12.5 years	.55	.24	-2.28	.030
Conditional effect: Low introspection	-.86	.43	-2.00	.055
Conditional effect: High introspection	.79	.44	1.82	.079
Hypothesis 5				
Interaction effect: Self-report health ages 5-10 years moderator of father-son bond at 21 months and decentering age 18 years	-.10	.37	-2.67	.016
Conditional effect: Good health	.94	.34	2.76	.013
Conditional effect: Fair health	.50	.25	1.96	.066
Interaction effect: Self-report health ages 11-17 years moderator of father-son bond at 21 months and decentering 18 years	-1.73	.62	-2.79	.012
Conditional effect: Excellent health	1.14	.37	3.07	.007
Conditional effect: Good health	.26	.23	1.11	.281
Conditional effect: Fair health	-.10	.53	-1.89	.075

Table 10

Un-winsorized PROCESS Moderation Analysis Hypothesis 2, 3, 4

Moderators	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>-Value
<i>Hyp. 2.</i> Father's nervous instability moderator of mother-son bond at age 21 months and decentering 18 years	-.59	.27	-2.20	.041
<i>Hyp 3.</i> Introspection age 7 moderator of father-son bond at 21 months and decentering age 12.5 years	.69	.32	2.18	.037
<i>Hyp 4.</i> Self-report health ages 5-10 years moderator of father-son bond at 21 months and decentering age 18 years	-.10	.37	-2.67	.016
<i>Hyp 4.</i> Self-report health ages 11-17 years moderator of father-son bond at 21 months and decentering 18 years	-1.73	.62	-2.79	.012

Figure 1

Nervous Instability and Decentering

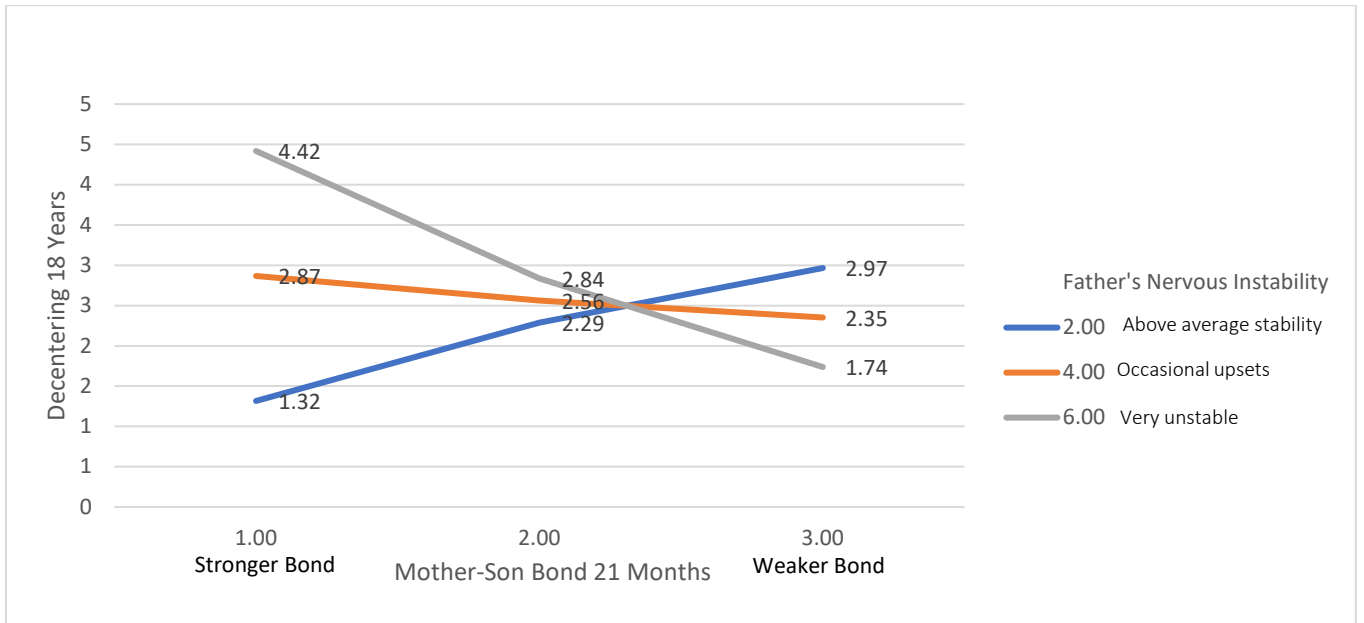


Figure 2

Introspection 7 Years and Decentering

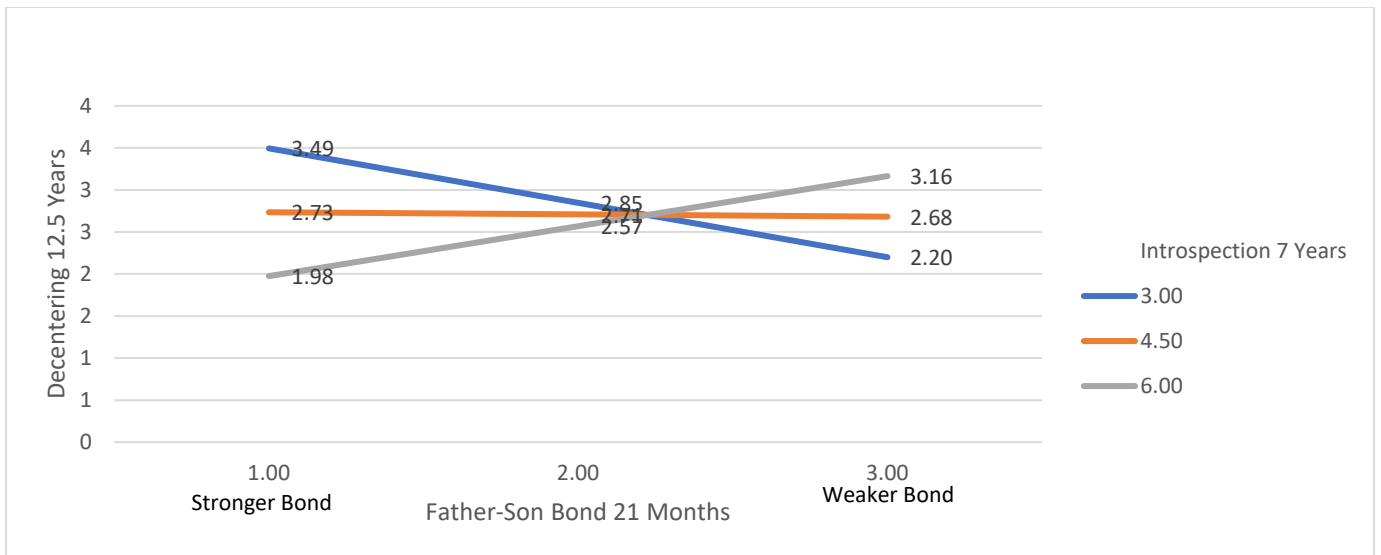


Figure 3

Health 5-10 Years

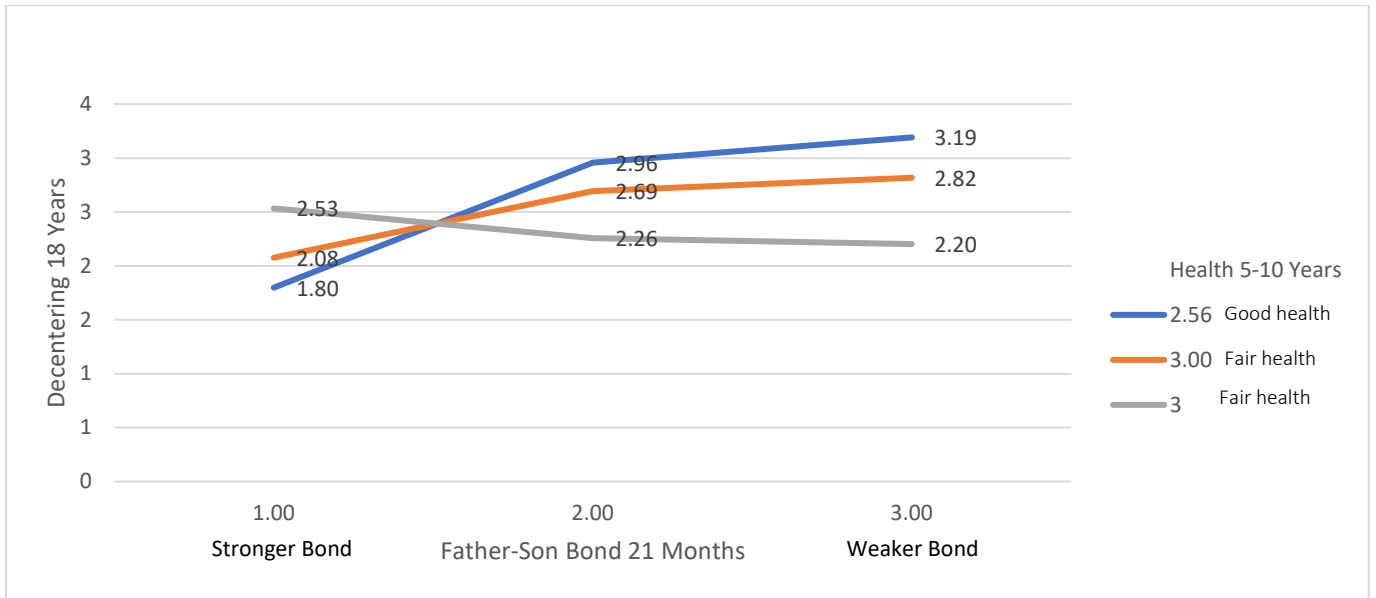


Figure 4

Health 11-17 Years

