THE RELATION BETWEEN PARENTING STRATEGIES, PARENTS' BELIEFS ABOUT CHILDREN'S EMOTIONS, AND PRESCHOOLERS' THEORY-OF-MIND

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ABSTRACT

THE RELATION BETWEEN PARENTING STRATEGIES, PARENTS' BELIEFS ABOUT CHILDREN'S EMOTIONS, AND PRESCHOOLERS' THEORY-OF-MIND

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Theory-of-mind (ToM) describes the ability to understand other's perspectives, thoughts, emotions, and beliefs that may differ from one's own (Pavarini et al., 2013). A child's ToM development may be influenced by parenting strategies implemented during childhood (Aminin, 2018; Vinden, 2001). Characteristics such as parental warmth, reasoning, punitive strategies, directiveness, lack of follow through, and the ignoring of misbehavior may all impact a child's psychosocial skills. Likewise, the way a parent responds to a child's emotions affects their emotional socialization and relationships with others (Halberstadt et al., 2013). Whether a parent responds with validation or minimization of a child's emotions may influence the understanding of emotions, which impacts the development of ToM (Pavarini et al., 2013; Pears & Moses, 2003; Perlman et al., 2008). Participants aged three to five years old were recruited from the greater Boston, Massachusetts and Cullowhee, North Carolina areas. Parents of the children completed demographic questions, the Parenting Styles Dimensions Questionnaire, and the Parents' Beliefs About Children's Emotions questionnaire to measure parenting style traits and parental views toward children's emotions (Halberstadt et al., 2013; Robinson et al., 2001). The

Not-Own-Belief task is a simple false belief task that asks about a character's perception of where she thinks she lost her favorite toy. Children were asked where they thought the character would look for her ball, with the location always being the opposite of the children's initial guesses. The Ice Cream Machine task is a novel ToM task that asks participants to memorize and distinguish characters' favorite ice cream flavors from their own. ToM was measured using responses to questions that directly opposed children's favorite ice cream flavors. ToM Performance was not significantly correlated with any of the measured parenting traits, nor was it correlated with parents' negative beliefs about children's emotions. Multiple regression was used to assess the ability of each individual parenting trait to predict ToM Performance after controlling for age, and Democratic Participation was found to significantly predict ToM Performance. On the other hand, Negative Parental Views did not significantly predict ToM Performance. An independent samples *t* test compared ToM Performance for boys and girls; a different model was run for each age group. For three-year-olds, differences in ToM Performance scores were statistically different between genders, with boys performing better on tasks than girls. Interpretations of these results are included in the Discussion, Limitations, and Future Directions chapter of this manuscript.

CHAPTER ONE: INTRODUCTION AND LITERATURE REVIEW

The development of theory-of-mind (ToM) in children is an important socio-cognitive milestone that influences multiple facets of human interaction. By definition, ToM describes the ability to understand other's perspectives, thoughts, emotions, and beliefs that may differ from one's own (Pavarini et al., 2013). Once children have acquired ToM, they are able to correctly predict how other's perspectives and knowledge will influence their behaviors (Pavarini et al., 2013). To measure ToM, simple false belief (FB) tasks are used to test whether children have reached this developmental stage. Child participants are asked to make behavioral predictions based on a story character's perspective that directly conflicts with the child's perspective. The goal with this task is to measure whether children can distinguish their own views of reality from the character's perceived reality, thus indicating the presence of ToM (Slaughter & Rosnay, 2017). Children typically pass FB tasks reliably around four years old, but this age may vary depending on internal factors, such as dopamine activity in the frontal lobe, activation of the dorsomedial prefrontal cortex, and activation of the right temporoparietal junction (Lackner et al., 2010; Mason & Just, 2009; Slaughter & Rosnay, 2017). Activation of the dorsomedial prefrontal cortex occurs during the comprehension of narrative tasks, conceptual perspective-taking, and protagonist-related processes (Castelli et al., 2002; Mason & Just, 2009; Mason et al., 2008). The right temporoparietal junction is thought to be involved in the reasoning of others' mental states (Saxe & Wexler, 2005). Likewise, external factors, like parenting techniques or emotional socialization, may influence the development of ToM (Aminin, 2018; Halberstadt et al., 2013; Vinden, 2001). This study focuses on the possible influence that external factors,

specifically parenting strategies and parental views toward children's emotions, may have on ToM development in children.

ToM is positively associated with prosocial behavior because children who can understand other's perspectives and feelings are more likely to offer help (Longobardi et al., 2019). Better ToM skills are also associated with popularity with peers and greater social competence (Lecce et al., 2017; Slaughter et al., 2015). Whereas poor ToM is related to social functioning difficulties, loneliness, and rejection from peers (Slaughter et al., 2015). Studies such as these provide insight into the reasons why ToM development is important for the success and wellbeing of individuals.

Parenting Strategies

A primary external factor that may influence the development of ToM is the parenting strategies used, such as warmth, induction of reasoning, directiveness, corporal punishment, or verbal hostility. Measuring parenting using dimensional traits, like parental support, is common throughout the literature. Parental support is characterized by traits of nurturance, warmth, acceptance, and involvement that support child development (Barber et al., 2005). Characteristics of supportive parenting have been found to be positively associated with self-esteem, social initiative and competence, an internal locus of control, morality, and other prosocial behaviors in children (Barber et al., 2005; Tamis-LeMonda et al., 2009).

Parenting techniques can also be measured by investigating the dimension of behavioral control. Behavioral control is defined as providing clear, rational, and consistent expectations to increase a child's competency and responsibility. These expectations are enforced via parental monitoring, while allowing for child autonomy (Barber et al., 2005). Responsible behavioral

control is associated with lower rates of problem behaviors and depressive symptoms in children (Hart et al., 2003). The appropriate use of behavioral control may help guide and regulate a child; however, high levels of behavioral control negatively affect development (Barber et al., 2005).

A high level of behavioral control, or excessive behavioral control, is present when parents value strict conformity to rules without the opportunity for children to question why they are being disciplined or why these rules exist (O'Reilly & Peterson, 2014). Excessive behavioral control may look like corporal punishment, verbal hostility, or other punitive strategies. The parent can be insensitive to the child's emotional needs, which could result in rearing someone extrinsically motivated with a poorer self-conception (Lamborn et al., 1991). Parents who use excessive behavioral control may engage in negative disciplinary actions such as criticism, physical control, and possible power assertion techniques, like spanking and yelling (Vinden, 2001). The restrictive nature of this type of parenting rarely provides children with opportunities for learning about others' perspectives and emotions, leading to a potential impact on ToM development and more trouble understanding the perceptions and emotions of others (Vinden, 2001). Guajardo and colleagues (2009) used the term "overreactive parenting" to describe similar traits. Overreactive parenting involves harsh verbal commands and physical punishment (Guajardo et al., 2009). In the study by Guajardo, Snyder, and Petersen (2009), parents completed the Parenting Scale to measure overreactivity (Arnold et al., 1993). ToM was measured using seven tasks created by Wellman and Liu (2004). These tasks comprised of FB tasks, a diverse desires task that focused on differing wants or beliefs from the child's, a knowledge access task that looked at differing knowledge between a character and the child, among other tasks. It should be noted that this study did not find that overreactivity predicts ToM

performance. Vinden (2001), on the other hand, found more significant results for this relationship. Vinden (2001) designed the Parenting Attitudes Inventory that assessed individuals' views on different types of parenting. Mothers completed the inventory, and their children completed three ToM tasks. Vinden (2001) specifically found that negative control behaviors and power assertion are negatively associated with ToM performance. Without the opportunity to critically think about emotions in the home, social understanding may be less than for children raised with less controlling parenting strategies.

Conversely, parents may demonstrate a lack of behavioral control in which the child's opinions and behaviors are accepted (or in some cases, ignored) by the parents with very little, if any, discipline or correction. Parents may enact very little boundaries or expectations for their children (Chipman et al., 2000). This strategy is sometimes labeled as "uninvolved" and suggests that parents show less warmth, less responsiveness, and little monitoring of their children's behavior (Kuppens & Ceulemans, 2019). Guajardo and colleagues (2009) label this as "lax parenting," in which the parent submits to demands made by the child and is inconsistent and uninvolved. Parent participants of the study conducted by Guajardo and colleagues (2009) completed the Parenting Scale to measure laxness (Arnold et al., 1993). ToM was measured using the same seven tasks created by Wellman and Liu (2004) that are described previously. Guajardo and colleagues (2009) concluded that lax parenting predicts poorer performance on ToM tasks. The reason for this might be that when children are not taught to place importance or understanding on their own or other's thoughts, beliefs, or emotions, they do not have the opportunity to apply ToM skills (Aminin, 2018).

Like parental support and behavioral control, the concept of psychological control is frequently used in literature when measuring parenting techniques. Psychological control is defined by parental intrusiveness, guilt and shame induction, love withdrawal, invalidation, negative criticism, and constriction of a child's emotions, self-expression, and verbal expression (Barber et al., 2005; Nelson et al., 2013). The utilization of psychological control can negatively impact a child's thoughts and feelings and has been shown to be associated with increased internalizing symptoms, like anxiety, depression, and distress, and externalizing problems across cultures (Aunola et al., 2015; Barber et al., 2012). Further, Rubin and colleagues (2002) found that toddlers raised with mothers who were frequently intrusive, controlling, and/or used derisive comments were more likely to demonstrate social reservation at four years old, indicating that psychological control may inhibit a child's social development. Specifically, verbal hostility, characterized by parental displays of anger, frustration, disappointment, or verbal aggression, is associated with lower levels of prosocial behaviors in children (Hastings et al., 2000; Padilla-Walker et al., 2016). Prosocial behavior demonstrates social competence and morality in children; for a child to voluntarily behave in ways to benefit others, socio-cognitive skills are required, including ToM (Eisenberg et al., 2015; Imuta et al., 2016). A child must be able to recognize the experiences of others, even if they differ from the child's, in order to acknowledge that altruistic behaviors would improve the experiences of the people who the child is helping.

Past studies examine broad parenting styles, like authoritative, authoritarian, and permissive parenting, and their associations with children's ToM and emotional understanding (Guajardo et al., 2009; Vinden, 2001). However, parents may enact different strategies depending on the situational context or culture. Likewise, children may interpret parenting behaviors

differently based on their age, developmental status, and culture, making a dimensional approach more appropriate for current research (Smetana, 2017). By adopting a dimensional approach to measure parenting strategies, traits characteristic of parental support, behavioral control, and psychological control can be analyzed in relation to children's socio-cognitive development. Specifically, this study will use dimensions from the Parenting Styles Dimensions Questionnaire (PSDQ) to measure common characteristics found in parenting (Robinson et al., 2001). These traits include warmth, involvement, good-naturedness, induction of reasoning, democracy, verbal hostility, directiveness, nonreasoning/punitive strategies, corporal punishment, lack of follow-through, and ignoring misbehavior. The traits of warmth, involvement, and good-naturedness are similar to, or characterize the dimension of parental support. Induction of reasoning and democracy are strategies used during appropriate behavioral control. However, verbal hostility, directiveness, nonreasoning/punitive strategies, and corporal punishment describe excessive behavioral control. Verbal hostility and directiveness may also describe psychological control techniques. Lack of follow-through and ignoring misbehavior are examples of limited, or a lack of, behavioral control.

Parental Responses to Children's Emotions

Parental emotional socialization may largely contribute to a child's development of socio-emotional skills and ToM (Halberstadt et al., 2013). How parents respond to children's positive and negative emotions ultimately impacts their development in emotional socialization and interpersonal relationships (Caiado et al., 2021). Because parenting strategies can impact ToM and emotional understanding differently, they are considered related but separate domains of

socio-cognitive development (Guajardo et al., 2009). This study will provide insight into the relationship between parental emotion socialization and ToM development.

Parental sensitivity to children's mental states is a way to measure parents' ability to recognize and respond appropriately to their children's affect and cognitions (Pavarini et al., 2013). Children with parents who offer support in response to negative emotions later show a greater understanding of emotions (Fabes et al., 2002). When parents respond to emotional displays with warmth and support, children may become more open to learning about other people's thoughts, emotions, and behaviors, which transcend into ToM skills (Pavarini et al., 2013). In fact, advanced FB understanding is significantly predicted by responses to misbehavior that involved asking the child to reflect on the victim's feelings (Ruffman et al., 1999). Parents who instead reprimanded their children were negatively associated with FB understanding (Ruffman et al., 1999). Likewise, dismissive reactions, like minimizing or punishment, predict a lower understanding of emotions for children (Perlman et al., 2008). Pears and Moses (2003) relate these patterns more specifically to ToM skills, in that the use of instruction in response to misbehavior was associated with better ToM, and the uses of consequences and power assertion in response to misbehavior were associated with lower ToM.

Positive, responsive interactions between mothers and their one-year-olds are correlated with a higher level of FB understanding at four to five years old (McElwain & Volling, 2004). In comparison, higher dispositional empathy, or stable levels of empathy within an individual, is associated with a greater level of FB understanding at the same age (Farrant et al., 2011). Ereky-Stevens (2008) believes that these findings can be explained by the notion that positively responding to an infant's emotions and cognitions may model how to be sensitive to the child's

own mental states as he/she grows older. These skills that young children learn from their caregivers strengthen communication that will later lead to ToM development (Legerstee, 2005).

Parents' beliefs about children's emotions may demonstrate traits of emotion-related parenting. As defined by Scott and Hakim-Larson (2021), emotion-related parenting is a technique in which parents use verbal and non-verbal methods to socialize their thoughts, emotions, and behaviors in their children. Preschoolers raised with this technique can create more complex narratives using emotion-related terms compared to other toddlers (Favez, 2011). Emotion-related parenting is influenced by cultural beliefs and values; individualistic cultures likely use emotions in ways that support traits of self-sufficiency, privacy, and independence (Hakim-Larson, 2018). Interdependent, or collectivist, cultures tend to use emotional socialization to support social harmony, like instilling shame when social norms are violated (Hakim-Larson, 2018).

A type of method that utilizes emotion-related parenting is emotion coaching. Emotion coaching involves parental awareness of emotions, emotional bonding and teaching, active listening, validation, aiding children in labeling their emotions, and setting limits when helping children with problem-solving (Gottman & DeClaire, 1997). Emotion coaching is associated with children who experience lower stress, higher self-regulation, higher achievement, and better peer relationships (Gottman et al., 1996). Like any other facet of human behavior, emotion-related parenting is influenced by culture and the parents' background and upbringing (Eisenberg et al., 1998). It is important to take this into consideration when evaluating emotion-related behaviors and parents' beliefs about children's emotions because other cultures' social norms may differ from those in Western culture, where much of the existing literature is based (Safdar

& Kosakowska-Berezecka, 2015). Interdependent cultures are more likely to reinforce socially engaging emotions, like shame and sympathy, to maintain social harmony while discouraging disengaging emotions, like anger, sadness, and pride (Raval & Walker, 2019). For White Americans, maternal emotion coaching was positively associated with children's social competence and negatively associated with externalizing symptoms. However, maternal emotion coaching was not significantly related to Indian American child outcomes (Daga et al., 2015). Additionally, mothers' anger coaching was associated with decreased anxiety and depressive symptoms for African American children, whereas anger coaching was associated with increased anxiety for White American children (Bowie et al., 2013).

Mental-state talk, a characteristic that can be found in emotion-related parenting, is strongly predictive of mental-state understanding as children grow from two to 10 years old (Ensor et al., 2014). By focusing on thoughts, beliefs, memory, and attention, children can become more aware of and focused on their cognitive processes (Slaughter & de Rosnay, 2017). The frequency of mental-state talks in the family when children were two to six years old was correlated with individual differences found in three- and six-year-olds' FB understanding (Ensor et al., 2014). Ensor and colleagues (2014) looked at the effects of desire- and emotion-state talk as well, but they did not find the same association with FB understanding as was found with mental-state talk. Despite what may be inferred, parental warmth may not be related to ToM development; ToM seems to be more related to what caregivers say, versus how they act (Ruffman et al., 2006). When mental-state talk is combined with elaborate talk (*i.e.,* when parents fully explain content to their children), the development of ToM is especially benefited (Slaughter & de Rosnay, 2017). Conversations about emotions and their causes lead to children

being more easily able to explain their emotions and the behavior of a character in a FB task compared to children whose families did not have these conversations as frequently, if at all (Dunn et al., 1991). When parents view children's emotional experiences positively, they are more likely to respond with understanding, support, and validation, which can foster an environment in which emotion coaching and mental-state talk are possible (Halberstadt et al., 2013).

Theory-of-Mind Gender Differences

It is important to consider the gender of the child when recognizing the effects of parenting on ToM. Societal norms and roles may influence how parents react to girls' versus boys' displays of emotion. For example, Chaplin and colleagues (2010) posit parental figures tend to be more supportive of boys' displays of anger than of the anger of girls. When engaging in prosocial behaviors, boys may be less motivated by emotion and rely more on reasoning and logic, whereas girls are motivated more by empathy and gender role expectations (Longobardi et al., 2019). This may be due to the emphasis placed on relational connectedness and emotion when raising girls and assertiveness and dominance when raising boys (Endendijk et al., 2017). Additionally, a past study has shown that mothers with daughters were more responsive and warmer during interactive play than mothers with sons. Increased responsiveness and warmth elicited more social engagement and positive affect from their daughters than was seen from their sons (Mandara et al., 2012). Parental differences such as these are largely influenced by attitudes toward gender roles, whether the parent is aware of this bias or not. Fathers with biases toward gender roles are particularly more likely to use physical control when disciplining boys than girls, which causes the child to be more likely to develop stereotypical traits of masculinity,

like dominance (Endendijk et al., 2017). Parents tend to use a greater amount of emotion words when speaking to girls than to boys; mothers' use of emotion talk is associated with the amount of emotion talk that their children use (Aznar & Tenenbaum, 2015).

Hughes and colleagues (1999), found that children's ToM was significantly associated with parental discipline in boys only. Parental warmth, on the other hand, was principle for girls and their development of the understanding of ToM. The relationship between parental affect and a child's ToM is present for both boys and girls but is found to be stronger for girls. The reason for this is not obvious, but it could be interpreted that girls use their understanding of ToM to build emotional relationships, whereas boys may use this same understanding in ways that lead to discipline (Hughes et al., 1999). Girls tend to perform better than boys when completing ToM tasks, like the FB task, with the average age of girls to reach the task ceiling being over six months earlier than the average age for boys (Thompson & Thornton, 2014). Earlier ToM development is beneficial to both boys and girls; however, it seems to affect each gender differently in social situations (Kuhnert et al., 2017). Specifically, girls with poorer ToM may experience more loneliness, while boys with poorer ToM may experience more perceived peer rejection (Devine & Hughes, 2013).

The aim of this study is to investigate the relationships between parenting dimensions, parental beliefs about children's emotions, and ToM performance in preschoolers. Few studies have measured very specific parenting traits and their relation to ToM development. Instead, studies have clustered common parenting traits into the dimensions previously described as parental support, behavioral control, and psychological control. This study contributes to the literature by identifying specific parenting characteristics related to these broader categories,

potentially narrowing down the areas in which parenting techniques can be adapted or improved. Additionally, this study contributes to the limited presence of research that measures ToM performance with a composite score that includes more than one ToM task. Results could be applied clinically through education to new parents or to inform maladaptive parenting techniques that may be physically or psychologically harmful to a child. With greater understanding of positive parenting skills, families may improve their internal relationships, disciplinary techniques, emotion regulation, and children's social understanding. With improvement of parenting strategies, children may gain stronger prosocial skills, experience increased social satisfaction, and build more fulfilling relationships. This study may aid in the understanding and intervening of children who lack ToM skills, and therefore could be used therapeutically to enhance relationships and communication skills.

Hypotheses

1. Warmth and involvement, good-natured/easygoing, reasoning/induction, and democratic participation will be positively associated with theory-of-mind performance.
2. Verbal hostility, directiveness, nonreasoning/punitive strategies, corporal punishment, lack of follow-through, and ignoring misbehavior will be negatively associated with theory-of-mind performance.
3. Negative parental beliefs about children's emotions will be negatively associated with theory-of-mind performance.
4. Controlling for age, parenting traits will predict theory-of-mind performance.
5. Controlling for age, negative parental beliefs about children's emotions will predict poorer theory-of-mind performance.

6. Girls will demonstrate greater theory-of-mind performance than boys.

CHAPTER TWO: METHODS

Design and Participants

Participants were recruited from the greater Boston, Massachusetts and Cullowhee, North Carolina areas. All testing and data collection procedures were done online using Zoom. Participants were seated in front of a computer camera with their parents or guardians in the background, who agreed to refrain from interfering with their children's answers. The video recording of the experimental ToM task was completed via Zoom, and the questionnaire responses were recorded via Qualtrics.

We collected complete data from 48 preschoolers aged three (n = 22), four (n = 17), and five years old (n = 9; M = 3.73, SD = 0.77). Twenty-two participants were boys, and 26 participants were girls. Most participants spoke English as their primary language (n = 43), with the rest speaking a different first language or multiple languages (n = 5). Twenty-five participants identified as White, 12 identified as Mixed/Other, six identified as Asian, one identified as American Indian or Native Alaskan, one identified as Black or African American, one identified as Hispanic or Latinx, and two did not report their race or ethnicity. Three children were reported to have developmental delays, including speech delays and gross motor delays. Sixteen participants were not included due to incomplete or missing questionnaire responses and/or incomplete or missing task results.

As part of a larger study, parents of the child participants filled out questions on demographics, the Social Responsiveness Scale, Second Edition, the Behavioral Rating Inventory of Executive Function, the Parenting Styles Dimensions Questionnaire (PSDQ), and

the Parents' Beliefs About Children's Emotions (PBACE) questionnaire (Constantino & Gruber, 2012; Gioia et al., 2000; Halberstadt et al., 2013; Robinson et al., 2001). However, only demographics, the PSDQ, and the PBACE questionnaire were used for this study's analyses. The target sample size was 90 participants, with 30 participants for each age group. This sample size was determined using G*Power 3.1 software to conduct a power analysis with an alpha of 0.05, a power value of 0.80, and an effect size of $f = .15$. However, due to time constraints and participant cancellations, we were only able to reach a sample size of 48 before this study's data finalization.

Parenting Styles and Dimensions Questionnaire (PSDQ)

The PSDQ is a 62-item scale that measures authoritative, authoritarian, and permissive parenting styles using a 5-point Likert scale from 1 (*never*) to 5 (*always*) (Robinson et al., 2001). It includes secondary subscales of each primary parenting subscale that capture traits of the previously discussed concepts of parental support, behavioral control, and psychological control.

Initially, the questionnaire was completed by a sample of 1,251 parents. Thirty-two percent were parents of preschool-aged children, and 68% were parents of elementary-aged children. Most of the parent participants were Caucasian and resided in a two-parent household (Robinson et al., 1995). The authoritative primary scale consists of 27 items and has a Cronbach α of .91, the authoritarian primary scale consists of 20 items and has a Cronbach α of .86, and the permissive primary scale consists of 15 items with a Cronbach α of .75 (Robinson et al., 1995). Within the authoritative primary scale, four factors with eigenvalues greater than one accounted for 47.4% of the variance. These factors were identified as Warmth and Involvement (11 items; *e.g.,* "I show sympathy when my child is hurt or frustrated"), Reasoning/Induction (seven items;

e.g., "I give my child reasons why rules should be obeyed"), Democratic Participation (five items; *e.g.,* "I allow my child to give input into family rules"), and Good-Natured/Easygoing (four items; *e.g.,* "I show patience with my child"). Within the authoritarian primary scale, four factors with eigenvalues greater than one accounted for 46.8% of the variance. These factors were identified as Verbal Hostility (four items; *e.g.,* "I yell or shout when my child misbehaves"), Corporal Punishment (six items; *e.g.,* "I guide my child by punishment more than by reason"), Nonreasoning/Punitive Strategies (six items; *e.g.,* "I punish by taking privileges away from my child with little if any explanations"), and Directiveness (four items; *e.g.,* "I tell my child what to do"). Within the permissive primary scale, three factors with eigenvalues greater than one accounted for 40.3% of the variance. These factors were identified as Lack of Follow-Through (six items; *e.g.,* "I state punishments to my child and do not actually do them"), Ignoring Misbehavior (four items; *e.g.,* "I allow my child to interrupt others"), and Self-Confidence (five items; *e.g.,* "I find it difficult to discipline my child"). All items have a factor loading of greater than or equal to .4 (Robinson et al., 1995). The permissive subscale of Self-Confidence is the remaining PSDQ secondary subscale not used for this study's analysis due to having only three items with a factor loading greater than .4 (Robinson et al., 2001).

In the current study, Reasoning/Induction had good internal consistency reliability with a Cronbach α of .84. Democratic Participation had acceptable internal consistency with a Cronbach α of .72, along with Verbal Hostility (Cronbach α = .76) and Nonreasoning/Punitive Strategies (Cronbach α = .76). Warmth and Involvement (Cronbach α = .65) and Directiveness (Cronbach α = .67) both had questionable internal consistency reliability. Good-Natured/ Easygoing had poor internal consistency with a Cronbach α of .57. Corporal Punishment had

unacceptable internal consistency reliability with a Cronbach α of .49, along with Lack of Follow-Through (Cronbach α = .45), Ignoring Misbehavior (Cronbach α = .36) and Self-Confidence (Cronbach α = .45).

Test-retest reliability was measured by Önder & Gülay (2009) by giving 30 random parents the PSDQ in a two-week interval. There was a significantly strong relationship between the PSDQ and test-retest reliability measures ($r = .76$, $p < .01$). There were also significantly strong relationships between test-retest measures of the authoritative subscale ($r = .92$, $p < .01$), authoritarian subscale ($r = .84$, $p < .01$), and permissive subscale ($r = .78$, $p < .01$).

Parents' Beliefs About Children's Emotions (PBACE) Questionnaire

The PBACE is composed of 33 items and seven subscales and uses a 6-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*). It measures how caregivers might feel about their children's display of emotions, while being inclusive of races, ethnicity, and genders of the caregivers (Halberstadt et al., 2013). It is believed that the way parents view their children's emotions, either positively or negatively, impacts children's mental health and future well-being (Halberstadt et al., 2013).

1,080 parents participated in the development of the PBACE. All participants spoke English and were parents of at least one 4- to 10-year-old child. Parents identified as African American ($N = 385$; 58% women), European American ($N = 398$; 54% women) and Lumbee American Indian ($N = 297$; 56% women). 32 participants were biological grandparents who had full responsibility for their grandchildren. Exploratory factor analyses yield 32 scales with eigenvalues greater than one and accounted for 61.6% of the variance. Parallel analysis yielded eight factors with eigenvalues greater than chance. 59 items with a factor loading ≥ .40 and cross

loadings ≤ .25 were retained. One scale resulted in one item, so items with factor loadings ≥ .35 were retained for that scale only. After confirmatory factor analysis, additional items were removed to improve model fit. This resulted in seven scales labeled Cost of Positivity (four items; *e.g.,* "When children are too happy, they can get out of control"), Value of Anger (six items; *e.g.,* "It is useful for children to feel angry sometimes"), Manipulation (four items; *e.g.,* "Children use emotions to manipulate others"), Control (five items; *e.g.,* "Children can control how they express their feelings"), Parental Knowledge (three items; *e.g.,* "Parents should encourage their child to tell them everything they are feeling"), Autonomy (seven items; *e.g.,* "It's usually best to let a child work through being sad on their own"), and Stability (four items; *e.g.,* "Children's emotions tend to be long-lasting") (Halberstadt et al., 2013).

In the current study, Value of Anger (Cronbach α = .84) and Autonomy (Cronbach α = . 80) both had good internal consistency reliability. Cost of Positivity had acceptable internal consistency reliability with a Cronbach α of .72, along with Manipulation (Cronbach α = .77). Control had questionable internal consistency with a Cronbach α of .61. Stability had poor internal consistency with a Cronbach α of .53.

Some of these subscales measure positive views about children's emotions that lead to a more supportive relationship, whereas other subscales focus on negative views that may lead to the invalidation of children's emotions. The seven subscales were correlated with three measures of parents' emotion socialization behaviors: the Self-Expressiveness in the Family Questionnaire, Children's Coping with Negative Emotions Scale, and Parents' Responses to Childrens Positive Emotions Scale (Fabes et al., 1990; Halberstadt et al., 1995; Ladouceur et al., 2002). Thirteen of Halberstadt's and colleagues' (2013) 15 predictions were significantly supported, indicating good

construct validity. Halberstadt and colleagues (2013) support that parents who view children's positivity as costly are less positively expressive themselves and less validating of children's positivity. Parents who value children's anger are more negatively expressive and more validating of children's expression of negativity. However, unsupportive behavioral responses to negative displays are unrelated to whether parents value the expression of anger. Parents who view children's displays of emotions as manipulative are more invalidating of children's positivity. However, unsupportive behavioral responses to these emotional displays are unrelated to beliefs about manipulation. Parents who think children can control their emotions, who believe that children should autonomously manage their own emotions, and/or believe children's emotions are long-lasting are less supportive of negative emotional displays. Those who find importance in knowing about their children's feelings are more supportive of negative emotions.

The Cost of Positivity subscale measures how strongly a parent agrees with the notion that a child's joy and happiness also come with repercussions. Parents who reported a higher score on this subscale indicated that they were less supportive of their child's positive emotions (Halberstadt et al., 2013). The Value of Anger subscale measures how strongly a parent agrees that expressing anger can be beneficial, and parents who scored higher on this were generally more supportive of their children's negative emotions (Halberstadt et al., 2013). The Manipulation subscale measures whether a parent believes children use emotions to get their way instead of to have their needs met. Higher scores on this subscale were associated with the invalidation of children's emotions (Halberstadt et al., 2013). Whether children can control their emotions is measured by the Control subscale. Typically, parents who believe children can control their emotions are less supportive of children's negative emotions (Halberstadt et al.,

2013). Parental Knowledge measures whether a parent finds it important to be aware of children's emotions. Higher scores on this subscale are associated with more supportive reactions made by parents (Halberstadt et al., 2013). The Autonomy subscale measures how strongly a parent believes that children should handle their emotions independently. Higher results are associated with less supportive parents when responding to displays of emotion (Halberstadt et al., 2013). Finally, the Stability subscale measures how strongly a parent agrees that children's emotions are long-lasting and if their emotional styles are consistent throughout development. Parents who hold this belief are likely to be less supportive and slower to intervene in response to negative emotions (Halberstadt et al., 2013). Each scale was scored to indicate a more positive or negative view of children's emotions. Higher scores on the Cost of Positivity, Manipulation, Control, Autonomy, and Stability subscales of the PBACE questionnaire were summed to yield a score that reflects the level of negativity in which parents view children's emotions. The remaining subscales, Value of Anger and Parental Knowledge, were reversed scored to result in a sum that reflected a level of negativity and was added to the previous sum found. The final score was an overall level of negativity that parents hold toward children's emotions and was used for a beliefs of children's emotions model.

Following the completion of these scales, child participants virtually underwent four tasks that measure ToM, executive functioning (EF), and memory-guided planning (MGP). This study was a part of a broader experiment that explored the relationship between ToM, EF, and episodic future thinking (EFT) in preschoolers. The broader study specifically investigates whether the use of ToM influences the relationship between EF and EFT. Only data from the two ToM tasks were used for this study's analyses.

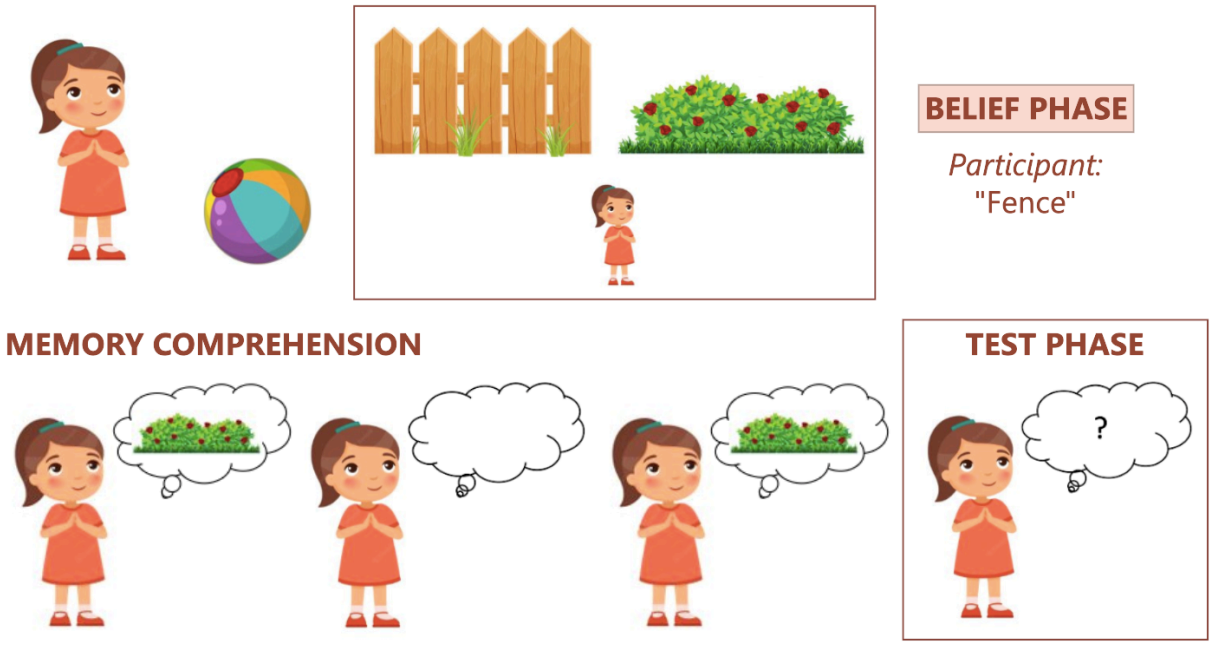
Not-Own-Belief (NOB): Theory-of-Mind Task

Children were presented with the Not-Own-Belief (NOB) task over Zoom. They were asked questions about a character's perception of where she thought she lost her favorite toy. The goal of this task was to test ToM ability. The task included three phases: Belief, Memory Comprehension, and Test. Before the Belief phase began, children were introduced to Mary, whose favorite toy was a ball. Children were shown that Mary lost her ball either behind a bush or a fence: "This is Mary, and Mary's favorite toy is this colorful ball. Oh no! Mary lost her ball. The ball might be behind the bush, or the ball might be behind the fence."

1. *Belief:* The goal of this phase was for children to indicate their own beliefs and learn about Mary's beliefs. The experimenter asked, "Where do you think Mary's ball is: behind the bush or behind the fence?" Whichever answer the children gave, Mary's belief was the opposite, inducing a ToM component: "You said the ball might be behind the bush, but Mary thinks the ball is behind the fence."
2. *Memory Comprehension:* Children were then asked to tell the experimenter again where Mary thought the ball was. If the child was incorrect, the experimenter reminded them of the correct answer. The purpose of this phase was to ensure that the children had correctly encoded Mary's belief and that their performance on the Test phase was due to their ToM skills, not due to misremembering Mary's belief. Children's responses to the Memory Comprehension phase were marked as either correct (1) or incorrect (0).
3. *Test:* Children were asked where Mary would look for her ball. The purpose of this question was to test if children could employ Mary's belief to solve the task. Success on the task requires that children choose the location of Mary's belief and not their own.

The locations of the bush and fence were counterbalanced (left or right placement) and Mary's belief was always the opposite of the children's beliefs. Children's responses to the Test phase were marked as either correct (1) or incorrect (0).

Figure 1
Not-Own-Belief Task Screens



Ice Cream Machine (ICM): Theory-of-Mind Task

Children were presented with the Ice Cream Machine (ICM) task over Zoom. The goal of this task was to test children's ToM and MGP congruently. This task included four phases, Preference, Learning, Memory Comprehension, and Test.

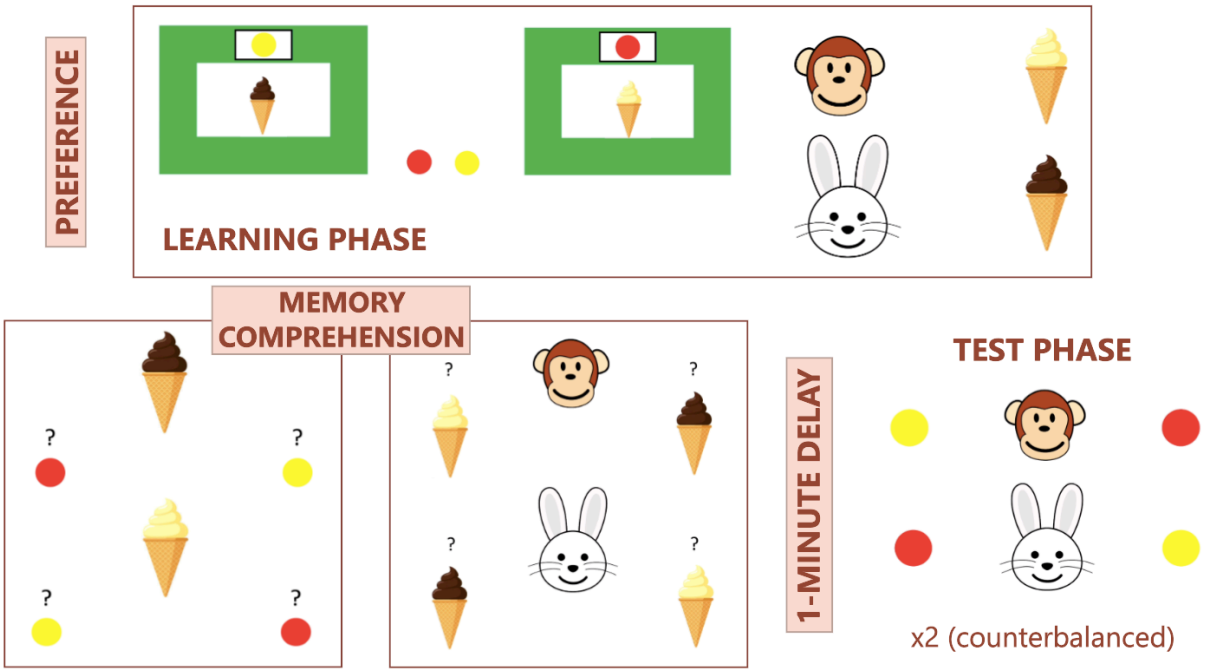
1. *Preference:* Children were presented with two flavors of ice cream, chocolate and vanilla. They were asked which flavor was their favorite. This phase was designed to record children's personal preferences, which came into conflict with another animal character's preference during the Test phase and allowed children to use ToM.

2. *Learning:* Children were familiarized with the associations that they would need to complete the Test phase. They encoded memories they would use later to make plans during the Test. Children were shown a virtual "ice cream machine" that could make chocolate and vanilla ice cream. The experimenter demonstrated that two coins (red or yellow) made either chocolate or vanilla ice cream (both variables are counterbalanced). Participants were then introduced to two different characters, Bunny and Monkey. Each animal liked either chocolate or vanilla ice cream as their favorite. These conditions were also counterbalanced.
3. *Memory Comprehension:* Children were tested as having encoded the information from the Learning phase. They were presented with chocolate ice cream and were asked to choose the correct color coin that made chocolate ice cream (either red or yellow, placed from left to right and counterbalanced). If incorrect, the experimenter allowed them to try again saying, "No, the yellow coin doesn't make chocolate ice cream. Which coin makes chocolate ice cream, the red coin or the yellow coin?" The same procedure was repeated for vanilla ice cream. Children were next presented with an animal character (Bunny or Monkey) and asked about the character's favorite ice cream flavor (either chocolate or vanilla, placed from left to right and counterbalanced). If incorrect, the experimenter allowed them to try again saying, "No, Bunny doesn't like vanilla best. Which does Bunny like best, chocolate or vanilla?" Children's responses to the Memory Comprehension phase were marked as either correct (1) or incorrect (0) for four trials.
4. *Test:* We investigated whether children could use the associations they learned in a task that requires both future planning and ToM. To succeed on the task, children had to

choose the correct memory (which coin makes which ice cream and which ice cream each animal likes the best) as well as suppress their personal preferences from the Preference phase. Before testing began, the children underwent a one-minute delay. They were then presented with an animal character in the middle of the screen with two coins on the left and right side (red and yellow, with placements counterbalanced). Children were asked to choose a coin to retrieve ice cream for the animal. Children had to first recall the animal character's ice cream preference and then the coin that resulted in that flavor, all while suppressing their own preferences. There were four test trials, two with Bunny and two with Monkey. The order was either Monkey, Bunny, Bunny, Monkey, or Bunny, Monkey, Monkey, Bunny. No corrective feedback was given during this phase. Children's responses to the Test phase were marked as either correct (1) or incorrect (0) for four trials.

Figure 2

Ice Cream Machine Task Screens



The entire ICM task took about five to ten minutes to complete. For the ICM task results, children's preferences were recorded as either chocolate or vanilla for later comparison to congruent and incongruent answers. The Test phase proportion correct was calculated by dividing the total score by 4. Congruent answers arose from trials where animals' preferences matched the children's preferences. Incongruent answers arose from trials where the animals' preferences were different from the children's. Each total score ranged from 0 to 2, with each trial contributing either 0 or 1 point. The proportion congruent was calculated by dividing the congruent total score by 2, and the proportion incongruent was calculated by dividing the incongruent total score by 2. The Test phase proportion incongruent was averaged with the NOB Test results to create a new, continuous composite variable. On the basis that ToM cannot accurately be measured by one task, past studies that have used multiple measures of ToM and/or executive function have combined results into a composite score to retain statistical parsimony (Carlson et al., 2015; Charman et al., 2000; Jones et al., 2018; Livingston & Colvert, 2019; Wellman, 2018). The ToM composite for this study was calculated by adding the NOB Test results (either 0 or 1 point) to the ICM proportion incongruent scores to find a sum between 0 and 2 points. This sum was then divided by 2 to find a mean ToM composite score for each child and referenced as "ToM Performance." Because the NOB task had one Test trial in which only two responses were possible, and the ICM task had four Test trials, the ToM composite is a continuous variable with scores ranging from 0 to 1 to represent overall ToM ability.

CHAPTER THREE: RESULTS

Forty-eight children aged three to five years old participated in the tasks of this study (M = 3.73, SD = 0.77). The relationships between 10 parenting dimensions, negative parental beliefs about children's emotions, and ToM performance were analyzed using Pearson correlation coefficients. Parenting traits that were measured included Warmth and Involvement (M = 50.25, SD = 3.88), Good-Natured/Easygoing (M = 17.02, SD = 1.82), Reasoning/Induction (M = 29.50, SD = 4.10), Democratic Participation (M = 18.65, SD = 3.56), Verbal Hostility (M = 8.15, SD = 2.43), Directiveness (M = 9.19, SD = 2.43), Nonreasoning/Punitive Strategies (M = 8.48, SD = 2.57), Corporal Punishment (M = 8.15, SD = 1.74), Lack of Follow-Through (M = 13.44, SD = 2.91), and Ignoring Misbehavior (M = 7.29, SD = 1.85). Parents' negative beliefs about children's emotions were computed into an overall score for each participant, referenced as "Negative Parental Beliefs" (M = 91.02, SD = 15.29).

Because ToM Performance was negatively skewed, a natural logarithm transformation was used to make the distribution more normal while keeping variability the same. The natural logarithm's distribution was more normally distributed; however, it was still somewhat skewed left. Since ToM Performance was negatively skewed, there may have been a ceiling effect in which many of the child participants answered correctly on all of the task questions. Good-Natured/Easygoing, Reasoning/Induction, Democratic Participation, Lack of Follow-Through, Ignoring Misbehavior, and Negative Parental Beliefs were all normally distributed. Warmth and Involvement was negatively skewed, suggesting that many participants scored high on that subscale. Verbal Hostility, Nonreasoning/Punitive Strategies, and Corporal Punishment were

positively skewed, suggesting that many participants' parents reported fewer behaviors characteristic of these subscales.

Significant correlations were found between all variables excluding Ignoring Misbehavior and ToM Performance (*Table 1*). Verbal Hostility and Directiveness resulted in the largest correlation, with a strong positive relationship (r = .62). The largest significant negative correlation found was the moderate negative association between Verbal Hostility and Good-Natured/Easygoing (r = -.47).

Table 1
Correlations Between Parenting Traits, Parental Beliefs, and Theory-of-Mind

	1	2	3	4	5	6	7	8	9	10	11	12
1. Warmth & Involvement	---											
2. Good-Natured/Easygoing	.45**	---										
3. Reasoning/Induction	.59**	.27	---									
4. Democratic Participation	.42**	.46**	.54**	---								
5. Verbal Hostility	.003	-.47**	.003	-.23	---							
6. Directiveness	-.13	-.35*	.11	-.10	.62**	---						
7. Nonreasoning/Punitive Strategies	-.18	-.23	-.11	-.25	45**	54**	---					
8. Corporal Punishment	-.01	-.07	.02	-.02	.56**	.50**	.61**	---				
9. Lack of Follow-Through	.14	-.10	.19	.16	39**	.58**	.48**	45**	---			
10. Ignoring Misbehavior	.05	.14	-.03	.28	-.14	-.08	-.08	-.24	-.08	---		
11. Negative Parental Beliefs	-.13	-.09	-.01	-.05	.18	.35*	.33*	.36*	.40**	-.24	---	
12. ToM Performance	-.17	.10	.06	.25	.06	-.05	-.02	.12	-.14	.07	.06	---

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

Hierarchical multiple regression was used to assess the ability of each parenting trait to predict ToM Performance after controlling for age (*Table 2*). Scores from Warmth and Involvement, Good-Natured/Easygoing, Reasoning/Induction, Democratic Participation, Verbal Hostility, Directiveness, Nonreasoning/Punitive Strategies, Corporal Punishment, Lack of Follow-Through, and Ignoring Misbehavior were used in separate models. Only one of the 10 parenting traits, Democratic Participation, significantly contributed unique variance to the model. Age was entered at Step 1, explaining 8.1% of the variance in ToM Performance. After the entry of Democratic Participation at Step 2, the total variance explained by the model was 16.6% and is statistically significant, F (2, 45) = 4.49, p = .02. Democratic Participation explained an additional 8.5% of the variance in ToM Performance after controlling for age. This change was statistically significant, R squared change = .09, F change (1, 45) = 4.60, p = .04.

Table 2
Hierarchical Regression Analysis Predicting ToM Performance with Democratic Participation

	B	**Beta**	***sr***	**Change in R^2**	**R^2**
Step 1				.08*	.08
Constant	-2.69 (0.99)				
Age	0.52 (0.26)	.29*	.29		
Step 2				.09*	.17
Constant	-5.12 (1.48)				
Age	0.59 (0.25)	.32	.32		
Democratic Participation	0.17 (0.05)	.29*	.29		

Note. Standard errors are in parentheses. *p < .05 indicates significance. *sr* = semipartial correlation coefficient.

Hierarchical multiple regression was used to assess the ability of Negative Parental Beliefs to predict ToM Performance after controlling for age (*Table 3*). Age was entered at Step 1, explaining 8.1% of the variance in ToM Performance. After entry of Negative Parental Beliefs at Step 2, the total variance explained by the model was 8.1% and is not statistically significant, F (2, 45) = 1.99, p = .15. Negative Parental Beliefs explained an additional 0.00% of the variance in ToM Performance after controlling for age, R squared change = .00, F change (1, 45) = 0.01, p = .92.

Table 3

Hierarchical Regression Analysis Predicting ToM Performance with Negative Parental Beliefs About Children's Emotions

	B	**Beta**	**Change in R^2**	**R^2**
Step 1			.08*	.08
Constant	-2.69 (0.99)			
Age	0.52 (0.26)	.29*		
Step 2			.00	.08
Constant	-2.80 (1.46)			
Age	0.52 (0.27)	.28		
Negative Parental Beliefs	0.00 (0.01)	.02		

Note. Standard errors are in parentheses. *p < .05 indicates significance.

A one-way between-groups analysis of variance was conducted to explore the impact of age on ToM Performance (*Table 4*). Participants were divided into three groups depending on their age (Group 1: three years; Group 2: four years; Group 3: five years). There was not a statistically significant difference at the p < .05 level in ToM Performance scores for the three

age groups, F (2, 45) = 2.93, p = .06. However, the difference in mean scores between the groups was somewhat large (η^2= .12).

Table 4

One-Way Analysis of Variance Comparing ToM Performance Across Three Age Groups

	3 years			**4 years**			**5 years**			***df***	***F***	***p***	η^2
	n	***M***	***SD***	***n***	***M***	***SD***	***n***	***M***	***SD***				
ToM Performance	22	-1.25	1.94	17	-0.26	0.38	9	-0.39	0.31	2, 45	2.93	.06	.12

An independent samples t test was conducted to compare ToM Performance for boys and girls; a different analysis was run for each age group. In three-year-olds, there was a significant difference in scores for boys (M = -0.74, SD = 0.70) and girls (M = -1.67, SD = 2.52; t(20) = 1.13, p = .03, two-tailed). The magnitude of the differences in the means (MD = 0.93, 95% CI [-0.79, 2.66]) was moderate (η^2 = .06). In four-year-olds, there was no significant difference in scores for boys (M = -0.36, SD = 0.45) and girls (M = -0.11, SD = 0.17; t(15) = -1.44, p = .07, two-tailed). The magnitude of the differences in the means (MD = -0.26, 95% CI [-0.64, 0.12]) was somewhat large (η^2 = .12). In five-year-olds, there was no significant difference in scores for boys (M = -0.49, SD = 0.29 and girls (M = -0.361, SD = 0.33; t(7) = -0.51, p = .32, two-tailed). The magnitude of the differences in the means (MD = -0.13, 95% CI [-0.75, 0.48]) was small to moderate (η^2 = .04).

CHAPTER FOUR: DISCUSSION, LIMITATIONS, AND FUTURE DIRECTIONS

This study aimed to investigate whether there are relationships between measurable parenting traits, negative parental beliefs about children's emotions, and ToM performance in preschoolers. Statistically significant associations were found between 10 of the 12 variables analyzed. Verbal Hostility and Directiveness resulted in the largest correlation, with a strong positive relationship. Because the Directiveness subscale measured parents' assertiveness when telling their children what to do, it posed similarities to the Verbal Hostility subscale which measured the level of verbal aggression, anger, or conflict parents engage in. Both subscales measured negative verbal communication strategies, possibly explaining the strong positive correlation between the two. The largest significant negative correlation found was the moderate negative association between Verbal Hostility and Good-Natured/Easygoing. Like Verbal Hostility, a couple of items on the Good-Natured/Easygoing subscale measured verbal communication patterns (*i.e.,* "I joke and play with my child," and "I show respect for my child's opinions by encouraging my child to express them"). Because Verbal Hostility measured negative and abrasive verbal communication and Good-Natured/Easygoing measured positive and supportive interactions, a moderate, negative correlation corroborates the differences found in each communication strategy.

ToM was not significantly correlated with any of the measured variables. One explanation for this may be that other factors more greatly relate to ToM ability than the parenting strategies a child is raised with. Schurz and colleagues (2021) pose that the execution of ToM abilities requires both cognitive and emotional processes at the same time. Because this

study focused on parenting behavioral patterns, children's internal psychological functioning traits were not considered as predictors or correlators of ToM development. Our hypothesis that the parenting traits of Warmth and Involvement, Good-Natured/Easygoing, Reasoning/Induction, and Democratic Participation would be positively correlated with ToM Performance was not supported. Similarly, our hypothesis that Verbal Hostility, Directiveness, Nonreasoning/Punitive Strategies, Corporal Punishment, Lack of Follow-Through, and Ignoring Misbehavior would be negatively correlated with ToM Performance was also not supported. Finally, the hypothesis that Negative Parental Beliefs would be negatively correlated with ToM Performance was not supported.

Our results show that Democratic Participation predicts unique variance in participants' ToM ability. This partially supports our hypothesis that parenting traits will predict ToM Performance. This finding suggests that allowing children to participate in household rulemaking and the creation of expectations predicts greater ToM Performance. Encouragement of children to partake in family discussions regarding boundaries, rules, and expectations may foster opportunities for the use of ToM by requiring the child to consider other's mental states in comparison to their own. Our prediction that negative parental beliefs about children's emotions would predict poorer ToM ability was not supported. In fact, negative beliefs held by parents did not explain any change in variance. This was a surprising finding, considering that literature proposes that parents who respond to children's emotions with more support, validation, empathy, or positivity lead to children's better performance on FB tasks (Ereky-Stevens, 2008; Farrant et al., 2011; McElwain & Volling, 2004; Pavarini et al., 2013). Whereas, responding with punishment, dismissal, invalidation, or negativity leads to poorer understanding of emotions and

ToM (Pears and Moses, 2003; Perlman et al., 2008). This finding may suggest that parents' views toward children's displays of emotions may not relate to or influence their behavioral responses to these displays.

There were no significant differences found in ToM Performance across the three age groups. Because studies suggest that ToM continues to develop as children get older, these results may be due to this study's small sample size, especially with five-year-olds being the smallest sample (Hayward & Homer, 2017; Osterhaus et al., 2022, Smogorzewska et al., 2020). For three-year-olds, differences in ToM Performance scores were statistically different between genders, with boys doing better than girls. For ages four and five, differences in ToM Performance were not statistically significant between girls and boys. Therefore, our hypothesis that girls would perform better on the ToM tasks than boys was not supported. In fact, in three-year-olds, results suggest the opposite in that boys perform better than girls on ToM tasks. This finding also opposes data found in the literature and may be worth investigating how these results relate to three-year-olds specifically (Thompson & Thornton, 2014). The designs of the ToM tasks might explain for these results as well. They were relatively simplistic, with NOB measuring differing beliefs, while ICM measured differing preferences.

Some researchers suggest that ToM development continues into middle childhood and adulthood (Hayward & Homer, 2017; Smogorzewska et al., 2020). According to Osterhaus and colleagues (2022), significant ToM performance differences occur between five and six years old. Because of this, external influences outside of a child's family, like peers, school and extra-curriculars, friendship dynamics, and social media, may interact with an individual's ToM development. Classroom characteristics are also important to a child's socio-cognitive

development, like organization, quality of environment, and inclusive education (McLean et al., 2016). This study's participants ranged from three to five years old, with the cut-off being right around the time children began going to school. Although research suggests that family influences children's socio-cognitive development, it would be worth investigating the effects of outside factors, like school and social settings (Barreto et al., 2017).

A main limitation that may have affected this study's results was the small sample size. Due to the nature of this study's online methodical procedures and the young age group being studied, acquiring a substantial sample size within the required timeframe was difficult. Additionally, many young participants found it hard to focus for the duration of the four tasks, and experimentation had to be discontinued. Participants with missing data were not used in this study's analyses, making the sample size smaller. Sixteen participants were not included due to incomplete or missing questionnaire responses and/or incomplete or missing task results. Future studies should aim for larger sample sizes to ensure appropriate power analyses. Because the concepts measured in the study are convoluted and variable across contexts, it is important to obtain a sample that represents multiple cultures, family dynamics, and backgrounds.

Because the NOB Test trial only required one response from participants, and the ICM Test trials required four, the ToM composite score is most likely weighted more heavily for NOB performance. This may have caused the ToM composite score to be skewed. Should these tasks be used in the future, the ICM Test trials should be standardized into one result score between 0 and 1.

It may be beneficial to utilize measures that are from children's perspectives, as both questionnaires used for this study relied on parents' self-reports of their own parenting. This

could give way to false reports to present oneself in a particular way and may not accurately represent parents' true behaviors or beliefs. Studies have shown that participants distort their responses, especially when measuring perceived negative or socially unacceptable traits (Walker & MacCann, 2024). Walker and MacCann (2024) demonstrated that self-report results were different from those of informants, further suggesting that individuals' perceptions of themselves may differ from how others see them.

Supplemental research regarding social, cognitive, and affective influences on ToM development would benefit children who lack ToM skills or show signs of social dissatisfaction by helping parents and teachers intervene effectively. Understanding how to support ToM development may help children improve relationship satisfaction and communication skills. A main takeaway of this study is that utilizing democracy in the home to involve children in the creation of their own rules and expectations may lead to better ToM skills, and perhaps, greater socio-cognitive satisfaction and success.

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APPENDICES

Appendix A: Parenting Styles and Dimensions Questionnaire (PSDQ) (Robinson et al., 2001).

Instructions: The following pages contain a list of behaviors that parents may exhibit when interacting with their children. The questions are designed to measure how often you exhibit certain behaviors toward your child. Please respond to items independent of your spouse and do not discuss your answers until the questionnaire has been returned to the researchers.

I exhibit this behavior:

1 = Never
2 = Once in a while
3 = About half of the time
4 = Very often
5 = Always

_____ 1. I encourage my child to talk about his/her troubles.
_____ 2. I guide my child by punishment more than by reason.
_____ 3. I know the names of my child's friends.
_____ 4. I find it difficult to discipline my child.
_____ 5. I give praise when my child is good.
_____ 6. I spank when my child is disobedient.
_____ 7. I joke and play with my child.
_____ 8. I withhold scolding and/ or criticism even when my child acts contrary to my wishes.
_____ 9. I show sympathy when my child is hurt or frustrated.
_____ 10. I punish by taking privileges away from my child with little if any explanations.
_____ 11. I spoil my child.
_____ 12. I give comfort and understanding when my child is upset.
_____ 13. I yell or shout when my child misbehaves.
_____ 14. I am easygoing or relaxed with my child.
_____ 15. I allow my child to annoy someone else.
_____ 16. I tell my child our expectations regarding behavior before the child engages in an activity.
_____ 17. I scold and criticize to make my child improve.
_____ 18. I show patience with my child.
_____ 19. I grab my child when being disobedient.
_____ 20. I state punishments to my child and do not actually do them.
_____ 21. I am responsive to my child's feelings or needs.

_____ 22. I allow my child to give input into family rules.
_____ 23. I argue with my child.
_____ 24. I appear confident about my parenting abilities.
_____ 25. I give my child reasons why rules should be obeyed.
_____ 26. I appear to be more concerned with my own feelings than with my child's feelings.
_____ 27. I tell my child that I appreciate what the child tries or accomplishes.
_____ 28. I punish by putting my child off somewhere alone with little if any explanations.
_____ 29. I help my child to understand the impact of behavior by encouraging my child to talk about the consequences of his/her own actions.
_____ 30. I am afraid that disciplining my child for misbehavior will cause the child to not like his/ her parents.
_____ 31. I take my child's desires into account before asking the child to do something.
_____ 32. I explode in anger toward my child.
_____ 33. I am aware of problems or concerns about my child in school.
_____ 34. I threaten my child with punishment more often than actually giving it.
_____ 35. I express affection by hugging, kissing, and holding my child.
_____ 36. l ignore my child's misbehaviors.
_____ 37. I use physical punishment as a way of disciplining my child.
_____ 38. I carry out discipline after my child misbehaves.
_____ 39. I apologize to my child when making a mistake in parenting.
_____ 40. I tell my child what to do.
_____ 41. I give into my child when the child causes a commotion about something.
_____ 42. I talk it over and reason with my child when the child misbehaves.
_____ 43. I slap my child when the child misbehaves.
_____ 44. I disagree with my child.
_____ 45. I allow my child to interrupt others.
_____ 46. I have warm and intimate times together with my child.
_____ 47. When two children are fighting, I discipline the children first and ask questions later.
_____ 48. I encourage my child to freely express him/herself even when disagreeing with me.
_____ 49. I bribe my child with rewards to bring about compliance.
_____ 50. I scold or criticize when my child's behavior doesn't meet my expectations.
_____ 51. I show respect for my child's opinions by encouraging my child to express them.
_____ 52. I set strict, well-established rules for my child.
_____ 53. I explain to my child how I feel about the child's good and bad behavior.
_____ 54. I use threats as punishment with little or no justification.
_____ 55. I take into account my child's preferences in making plans for the family.
_____ 56. When my child asks why he or she has to conform, I state, “Because I said so,” or “I am your parent, and I want you to.”
_____ 57. I appear unsure of how to solve my child's misbehavior.
_____ 58. I explain the consequences of the child's behavior.
_____ 59. I demand that my child do things.
_____ 60. I channel my child's misbehavior into a more acceptable activity.

_____ 61. I shove my child when the child is disobedient.
_____ 62. I emphasize the reasons for rules.

Source: Adapted and reproduced with permission of authors and publishers from Authoritative, Authoritarian, and Permissive Parenting Practices: Development of a New Measure, by .C. Robinson, B. Mandleco, S. F. Olsen, & C. H. Hart, Psychological Reports, Vol. 77, Pp. 819-830, © 1995 by Psychological Reports,

Scoring Instructions: Following reverse scoring of three items (24, 38, 52), scores for the three primary and 11 secondary subscales are obtained by summing items within each dimension. Authoritative subscales with their factors and constituent items are warmth and involvement (Items 1,3, 5, 9, 12, 21, 27, 33, 35, 39, 46), reasoning/induction (Items 16, 25, 29, 42, 53, 58, 62), democratic participation (Items 22, 31, 48, 55, 60), and good natured/easygoing (Items 7, 14, 18, 51). Item responses for each factor are summed for factor scores, and all 27 items are overall authoritative parenting score.

Authoritarian subscales with their factors and respective items are verbal hostility (Items 13, 23, 32, 44), corporal punishment (Items 2, 6, 19, 37, 43, 61), nonreasoning/ punitive strategies (items 10, 26, 28, 47, 54, 56) and directiveness (Items 17, 40, 50, 59). Response values for each factor are added to arrive at factor scores, and all 20 items are added to obtain an overall authoritarian parenting score.

Permissive parenting subscales and their factors and items are lack of follow-through (Items 11, 20, 34, 38, 41, 49), ignoring misbehavior (Items 8, 15, 36, 45), and self-confidence (Items 4, 30, 34, 52, 57). Item responses are added to calculate factor scores, and all 15 items are summed (after reverse scoring Items 24, 38, 52) to arrive at an overall permissive parenting score

Note: Forms are available for both parents to rate themselves and their partner (mother's form is printed above), and for offspring (intergenerational form) to report how they were parented. An unpublished 50-item version based on recent cross-cultural research is also available from the instrument authors.

Appendix B: Parents' Beliefs About Children's Emotions (PBACE) Questionnaire

(Halberstadt et al., 2013)

Instructions: These statements express some beliefs about children's emotional development. Please read each statement and write in the number that shows how much you agree with the statement. Put your response in the column titled "Answer." Please pick a child (somewhere between the ages of 4 and 10) that you are familiar with, and respond to these statements for children of that age.

1 = Strongly disagree
2 = Somewhat disagree
3 = Slightly disagree
4 = Slightly agree
5 = Somewhat agree
6 = Strongly agree

_____ 1. Children use emotions to manipulate others.
_____ 2. When children are sad, they need to find their own ways to move on.
_____ 3. Children may not focus on their commitments if they feel too much happiness.
_____ 4. It's usually best to let a child work through being sad on their own.
_____ 5. When children feel something, it stays with them for a long time.
_____ 6. It is useful for children to feel angry sometimes.
_____ 7. When children are angry, it is best to just let them work it through on their own.
_____ 8. Parents don't have to know about all their child's feelings.
_____ 9. Children's emotions tend to be long-lasting.
_____ 10. Children's anger can be a relief to them, like a storm that clears the air.
_____ 11. Children can control what they show on their faces.
_____ 12. It's usually best to let a child work through their negative feelings on their own.
_____ 13. The experience of anger can be a useful motivation for action.
_____ 14. Children tend to figure out their feelings even when parents are not available to guide them.
_____ 15. Children can control how they express their feelings.
_____ 16. Children's emotional styles tend to stay the same over time.
_____ 17. Children often act sad or angry just to get their own way.
_____ 18. It is good for children to let their anger out.
_____ 19. Children often cry just to get attention.
_____ 20. Parents should encourage their child to tell them everything they are feeling.
_____ 21. When children are very happy, they can control what they show to others.
_____ 22. When children become sad or upset, parents can let them manage their feelings on their own.
_____ 23. Children can control their emotions.

_____ 24. Expressing anger is a good way for a child to let his/her desires and opinions be known.
_____ 25. It is important for children to tell their parents everything that they are feeling.
_____ 26. When children are too happy, they can get out of control.
_____ 27. Too much joy can make it hard for a child to understand others.
_____ 28. When children are angry, they need to find their own ways to resolve the situation.
_____ 29. When children are very angry, they can control what they show to others.
_____ 30. Children's emotions last for long periods of time.
_____ 31. Children who feel emotions strongly are likely to face a lot of trouble in life.
_____ 32. Children sometimes act sad, just to get attention.
_____ 33. Being angry can motivate children to change or fix something in their lives.

Table B1

Parents' Beliefs About Children's Emotions Questionnaire Scoring

	Cost of Positivity	Value of Anger	Manipulation	Control	Parental Knowledge	Autonomy	Stability
Full scale	3, 26, 27, 31	6, 10, 13, 18, 24, 33	1, 17, 19, 32	11, 15, 21, 23, 29	8 (R), 20, 25	2, 4, 7, 12, 14, 22, 28	5, 9, 16, 30
Ethnically invariant	3, 26, 27, 31	6, 13, 24, 33	1, 17, 19, 32	11, 15, 21, 23, 29	8 (R), 20, 25	4, 7, 12	5, 9, 16, 30
Gender invariant	3, 26, 27, 31	6, 13, 24, 33	1, 17, 19, 32	11, 15, 23, 29	8 (R), 20, 25	4, 7, 12	5, 9, 16, 30