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**FROM MIND TO MIND: UNDERSTANDING THE ROLE
OF MOTHERS IN THE THEORY OF MIND
DEVELOPMENT OF CHILDREN**

NURSENA KO 

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Nursena Koç

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**FROM MIND TO MIND: UNDERSTANDING THE ROLE
OF MOTHERS IN THE THEORY OF MIND
DEVELOPMENT OF CHILDREN**

NURSENA KOÇ

ADVISOR: ASST. PROF. BERNA A. UZUNDAĞ

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APPROVAL

This thesis titled FROM MIND TO MIND: UNDERSTANDING THE ROLE OF MOTHERS IN THE THEORY OF MIND DEVELOPMENT OF CHILDREN submitted by NURSENA KOÇ, in partial fulfillment of the requirements for the degree of Master of Arts in Psychological Sciences is approved by

Asst. Prof. Berna A. Uzundağ (Advisor)
Kadir Has University

.....

Assoc. Prof. Mehmet Harma
Kadir Has University

.....

Assoc. Prof. Deniz Tahiroğlu
Boğaziçi University

.....

I confirm that the signatures above belong to the aforementioned faculty members.

Prof. Dr., Mehmet Timur Aydemir
Director of the School of Graduate Studies
Date of Approval: 20.06.2023

DECLARATION ON RESEARCH ETHICS AND PUBLISHING METHODS

I, NURSENA KOÇ; hereby declare

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In addition, I acknowledge that any claim of irregularity that may arise in relation to this work will result in a disciplinary action in accordance with the university legislation.

Nursena Koç

Date (20/06/2023)



To the hopes that kept me on my path...

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FROM MIND TO MIND: UNDERSTANDING THE ROLE OF MOTHERS IN THE THEORY OF MIND DEVELOPMENT OF CHILDREN

ABSTRACT

Theory of mind enables children to comprehend mental states of themselves and others. Theory of mind development is important for children's social competence, communication, empathy, and academic achievement. Parents' mental state talk with their children is thought to foster children's ability to understand and differentiate mental states. Nonetheless, no study has investigated individual differences in parents' mental state talk directed to their children with regard to parents' sociocognitive abilities. In the current study, we aimed to investigate (1) whether maternal reflective functioning and theory of mind skills can account for variations in mental state talk directed to their children and (2) whether mothers' mental state talk mediates the relationship between maternal reflective functioning, maternal theory of mind, and children's theory of mind. 89 mother-child (*age range*: 48-69 months) dyads participated in the study online. Children's theory of mind was assessed with the five-item theory of mind scale and maternal report. Mothers' mental state talk was measured via story narration of a wordless picture book ("Frog where are you?"). Maternal reflective functioning and theory of mind were assessed through the Parental Reflective Functioning Questionnaire and Reading the Minds in the Eyes Test, respectively. A significant mediation model showed that mothers with better ToM skills used more mental state terms about certainty, which in turn were positively related to children's ToM. Furthermore, mothers who demonstrated greater interest and curiosity in their children's mental states directed more mental state talk to their children, whereas mothers who had higher prementalization scores used less within-narrative mental state talk. Children who were exposed to a higher proportion of mental state talk and more maternal talk about their own or their mothers' mental states from their mothers had better ToM skills. In conclusion, this study underscores the significant role of mothers' sociocognitive abilities in determining their mental state talk, which subsequently is associated with children's ToM development.

Keywords: theory of mind, mental state talk, parental reflective functioning, parents' theory of mind, sociocognitive abilities

ZİHİNDEN ZİHİNE: ÇOCUKLARIN ZİHİN KURAMI GELİŞİMİNDE ANNELERİN ROLÜNÜ ANLAMAK

ÖZET

Zihin kuramı becerileri, çocukların kendilerinin ve başkalarının zihin durumlarını anlayabilmelerini sağlar. Zihin kuramı gelişimi, çocukların sosyal yeterlilikleri, iletişim ve empati becerileri ve akademik başarıları için önemlidir. Ebeveynlerin çocuklarıyla zihin durumları üzerine konuşmalarının, çocukların zihin durumlarını anlama ve ayırt etme becerilerini geliştirdiği düşünülmektedir. Bununla birlikte, ebeveynlerin çocuklarına yönelttikleri zihin durumu konuşmalarındaki bireysel farklılıkları ebeveynlerin sosyal-bilişsel becerileri açısından inceleyen bir çalışma bulunmamaktadır. Bu çalışmada, (1) annelerin içsel düşünme işlevselliği ve zihin kuramı becerilerinin çocuklarına yönelttikleri zihin durumu konuşmalarındaki farklılıkları açıklayıp açıklayamayacağı ve (2) annelerin zihin durumu konuşmalarının annelerin içsel düşünme işlevselliği ile çocukların zihin kuramı becerileri ve annelerin zihin kuramı becerileri ile çocukların zihin kuramı becerileri arasındaki ilişkiye aracılık edip etmediğini incelemeyi amaçladık. Çalışmaya 89 anne-çocuk (yaş aralığı: 48-69 ay) ikilisi çevrimiçi olarak katılmıştır. Çocukların zihin kuramı becerileri beşli zihin kuramı test dizisi ve anne raporu ile değerlendirilmiştir. Annelerin zihin durumu konuşmaları, yazısız bir resimli kitabın (“Kurbağa neredesin?”) hikaye anlatımı yoluyla ölçülmüştür. Annelerin içsel düşünme işlevselliği ve zihin kuramı becerileri sırasıyla Ebeveyn İçsel Düşünme İşlevselliği Ölçeği ve Gözlerden Zihin Okuma Testi ile değerlendirilmiştir. Anlamlı sonuç gösteren aracılık modeli, daha iyi zihin kuramı becerilerine sahip annelerin daha fazla kesinlik hakkında zihin durumu ifadesi kullandığını ve bu ifadelerin de çocukların zihin kuramı becerileri ile olumlu yönde ilişkili olduğunu göstermiştir. Ayrıca, çocuklarının zihin durumlarına daha fazla ilgi ve merak gösteren anneler çocuklarına toplamda daha fazla zihin durumu konuşması yöneltirken, çocuklarının zihin durumlarını anlamada daha fazla güçlük çeken anneler daha az öykü çerçevesi içi zihin durumu konuşması gerçekleştirmiştir. Anneleri, çocuklarına yönelttikleri konuşmaları esnasında daha yüksek oranda zihin durumu konuşması gerçekleştiren ve anneleri, daha fazla kendileri ya da çocuklarının zihin durumları hakkında konuşan çocukların daha iyi zihin kuramı becerilerine sahip olduğu

görülmüştür. Özetle, bu çalışma annelerin sosyal-bilişsel becerilerinin zihin durumu konuşmalarındaki rolünün altını çizmekte ve bunun da çocukların zihin kuramı gelişimiyle ilişkili olduğunu göstermektedir.

Anahtar Sözcükler: zihin kuramı, zihin durumu konuşmaları, ebeveyn içsel düşünme işlevselliği, ebeveyn zihin kuramı, sosyal-bilişsel beceriler



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1. INTRODUCTION

Theory of mind (ToM), in other words, understanding mental states (e.g., desires, beliefs, knowledge, emotions etc.) of one's own and others (Premack & Woodruff, 1978), is a fundamental sociocognitive ability related to children's school achievement, empathy, communication, imagination, emotion recognition, and problem solving skills (e.g., Astington, 2003; Astington & Pelletier, 2005; Resches & Perez Pereira, 2007; Seidenfeld et al., 2014; Weimer et al., 2012). Children who demonstrate better performance on ToM tasks show prosocial behaviors such as helping, sharing, and cooperation more often and are preferred as friends by their peers to a greater extent (e.g., Caputi et al., 2012; Harwood & Farrar, 2006; Ornaghi et al., 2016; Yagmurlu et al., 2005). It has been longitudinally and cross-sectionally shown that parents' mental state talk with their children contributes to children's understanding of mental states (e.g., Adrian et al., 2005; Devine & Hughes, 2019; Dunn et al., 1991; Ensor & Hughes, 2008; Ontai & Thompson, 2008; Ruffman et al., 2002; Ruffman et al., 2006; Slaughter et al., 2007; Symons et al., 2006; Taumoepeau & Ruffman, 2006, 2008). Individual differences in parents' mental state talk directed to their children have been attributed to parents' mind-mindedness, parent-child attachment, and parental sensitivity (Lundy & Fyfe, 2015; McElwain et al., 2011; Oppenheim et al., 2001; Reynolds et al., 2020). However, there is yet no study investigating the relations between parents' sociocognitive skills such as parental reflective functioning (i.e. the ability of parents to comprehend both their own and their children's mental states and how those mental states influence behavior) and parents' own ToM skills and their mental state talk directed to their children. The first goal of the current study was to investigate whether mothers' ToM and reflective functioning are related to individual differences in their mental state talk directed to their children. The second goal of the study was to examine whether mental state talk mediated the relationship between mothers' parental reflective functioning, ToM and children's ToM. Furthermore, the literature is scarce in terms of the relationship between children's ToM and parents' ToM and reflective functioning (Cowes & Santelices, 2020; Devine & Hughes, 2019; Nijssens et al., 2021; Sabbagh & Seamans, 2008). The third aim of the present study was to investigate the relationship between mothers' sociocognitive abilities (i.e., parental reflective functioning and ToM) and

children's ToM. Moreover, although there are numerous studies in the literature examining the relationship between parents' mental state talk and children's ToM, there are a small number of studies which investigate this relationship in a Turkish sample (e.g., Bozbiyik, 2016; Evsen, 2022). Therefore, this study aimed to examine the relationship between mothers' mental state talk and children's ToM in a Turkish sample with a detailed coding scheme. Lastly, we aimed to increase the ecological validity of children's ToM assessment by using both behavioral tasks and maternal report.

Various studies demonstrated that infants have an implicit understanding of mental states (Kovacs et al., 2010; Luo, 2011; Onishi & Baillargeon, 2005; Surian et al., 2007; Surian & Geraci, 2012; Yott & Poulin-Dubois, 2012). Yet, the bulk of ToM research is concentrated on preschool ages where a rapid development of ToM is observed, specifically between 3 and 5 years of age (Wellman et al., 2001). A meta-analysis demonstrated that 3-year-olds are at below chance for passing false belief tasks, a commonly used measurement method for children's ToM, which assess children's understanding that a person may have a false belief contradicting reality (Wellman et al., 2001). Children aged 44 months have a 50% chance of passing false belief tasks and at five years of age, children are generally successful on these tasks (Wellman et al., 2001). In conclusion, although infants demonstrate some understanding of mental states, the major growth on mental state understanding is thought to occur in preschool years (Wellman et al., 2001).

The development of theory of mind skills is closely related to several social and environmental factors such as the number of siblings (McAlister & Peterson, 2013; Perner et al., 1994), family size (Lewis et al., 1996), peer interactions (Jenkins & Astington, 1996; Wang & Su, 2009), socioeconomic status (Cole & Mitchell, 1998), parent-child interactions (Guajardo et al., 2009; Symons & Clark, 2000), parenting stress (Guajardo et al., 2009), parenting styles (O'Reilly & Peterson, 2014), parents' sensitivity to children's mental states (for review, see Pavarini et al., 2012), and parental reflective functioning (Cowes & Santelices, 2020; Nijssens et al., 2021). In the literature, the most studied environmental factor related to children's ToM is parents' mental state talk directed to their children (Howard et al., 2008; Jenkins et al., 2003; Ontai & Thompson, 2008; Peterson & Slaughter, 2003; Ruffman et al., 2006; Meins et al., 2002). Parent-child

conversations play a crucial role in the development of theory of mind since they happen frequently in daily life and take place in a dynamic context that includes various types of exchanges and strong emotions (Thompson, 2006). As Thompson (2006) stated, words provide meaning for concepts or ideas that may be difficult to understand or express without language. They help to clarify and organize thoughts and ideas in the mind of a child (Bartsch & Wellman, 1995). Conversation with a mature person may be beneficial for children since adults often use conversation to reveal the underlying motives and reasons behind people's actions such as intentions, goals, emotions, and beliefs (Thompson, 2006). Parents' talking about internal states such as thoughts, ideas, desires, etc. (i.e., mental state talk) with their children is particularly important for ToM development in children (Tompkins et al., 2018). Children who frequently hear mental state terms, such as "thinking", "wondering", "knowing", or "feeling" from their parents, perform better on theory of mind tasks both cross-sectionally and longitudinally (Adrian et al., 2005; Devine & Hughes, 2019; Dunn et al., 1991; Ensor & Hughes, 2008; Ontai & Thompson, 2008; Ruffman et al., 2002; Ruffman et al., 2006; Slaughter et al., 2007; Symons et al., 2006; Taumoepeau & Ruffman, 2006, 2008).

Previous studies demonstrated longitudinal and cross-sectional associations between parents' mental state talk and children's ToM. For example, Ruffman and colleagues (2002) examined the longitudinal relationship between mothers' mental state references during picture description and children's (Time 1 $M_{age} = 3.01$; Time 2 $M_{age} = 3.41$; Time 3 $M_{age} = 4.04$) later belief, desire, and emotion understanding. The study found a significant relationship between these variables by controlling for several factors, including children's earlier ToM skills and their own mental state talk. The authors argued that this relationship may be causal in nature, as children's earlier ToM skills were not found to be associated with mothers' later mental state talk. In a subsequent study, Adrian and colleagues (2005) found that mothers who used more mental state terms and more diverse types of mental state terms during picture book reading had 4- and 5-year-old children with better performance on a false belief task. Furthermore, cognitive and emotional terms were significant predictors of children's false belief task performance, but desire and perception terms were not. Consistently, in a more recent study, Devine and Hughes (2019) found significant correlations between mothers' mental state talk -

during picture book reading and free play- and children's performance on false belief tasks, both concurrently and longitudinally. In sum, previous studies revealed the contributing role of parents' mental state talk directed to their children for children's ToM development. Therefore, identifying individual differences in parents' mental state talk is crucial.

Previous literature focused on parents' mind-mindedness, sensitivity, and parent-child attachment as sources of individual differences behind parents' mental state talk directed to their children (Lundy & Fyfe, 2015; McElwain et al., 2011; Reynolds et al., 2020). However, it remains unclear whether parents' own socio-cognitive abilities are related to their mental state talk. The present study aimed to investigate whether parental reflective functioning and parents' own ToM skills are sources of individual differences in parents' mental state talk directed to their children. *Parental reflective functioning* is a construct that encompasses the ability of parents to reflect on their own and their children's mental states, while also holding those mental states in mind, and use this understanding to respond effectively to their children's needs and behaviors (Fonagy & Target, 2005; Luyten et al., 2017a; Slade, 2005). Parental reflective functioning is found to be related with several developmental domains such as children's emotion regulation skills (Borelli et al., 2020), emotion understanding (Jessee, 2020), emotional adjustment (Gordo et al., 2020), attachment security (Ensink et al., 2018), and parent-child interaction quality (Rostad & Whitaker, 2016). Parental reflective functioning has been assessed by different measurements in different studies such as the Reflective Self Function Scale (Fonagy et al., 1991), Adult Attachment Interview (George et al., 1985), Parent Development Interview (Aber et al., 1985), Pregnancy Interview (Slade et al., 2007), and Working Model of The Child Interview (Zeanah et al., 1994). In addition, there are also assessments of parental mentalization based on observations (Meins & Fernyhough, 2015). Researchers using these methods consider parental reflective functioning as a unitary construct. In recent years, it has been argued that parental reflective functioning has several dimensions rather than a unitary structure (Luyten et al., 2017a). Based on a confirmatory factor analysis, it has been suggested that parental reflective functioning has three dimensions; these are (1) *prementalization*, which is the inability to attend to the child's mental states and to ascribe distorted mental states to the child; (2) *certainty about*

mental states, which is parents' acknowledgement of the ambiguity of their children's mental states; and (3) *interest and curiosity in mental states*, which defines parents' being curious in and eager to understand their children's mental states (Luyten et al., 2017a). According to Luyten et al. (2017a), parents who exhibit an interest in and curiosity about their children's mental states, while recognizing that such states may not always be known, and who possess the necessary qualifications to attribute attuned mental states to their children, are more likely to demonstrate higher levels of parental reflective functioning.

Parental reflective functioning is suggested to be a key factor in a parent's ability and desire to use mental state talk when communicating with their children to support them in comprehending their own and others' psychological responses, explaining conflicts, and promoting diverse perspectives (Ensink & Mayes, 2010). Previous research found a positive relationship between mothers' sensitivity to their children's needs and verbal or nonverbal expressions and mothers' mental state talk directed to their children (Reynolds et al., 2020). In a similar vein, it can be expected that mothers who are interested in and curious about their children's mental states would use a greater number of mental expressions (e.g., "feeling", "wondering", "thinking") during conversations with their children in order to understand and reveal their children's mental states. Furthermore, mothers who comment in a way that aligns with their children's mental states tend to have more discussions about mental states with their children (Lundy & Fyfe, 2015). Therefore, it can be expected that mothers who struggle to understand their children's mental states (prementalization) may talk less about mental states with their children. Previous research has not explored these potential relationships between mothers' parental reflective functioning and their mental state talk directed to their children. The current study aims to fill this gap in the literature by examining whether the three dimensions of parental reflective functioning are associated with mothers' mental state talk directed to their children.

Parental reflective functioning may be further associated with children's ToM via the mediation of parents' mental state talk directed to their children. It has been shown that parental mind-mindedness (i.e., parents' awareness of their children's mental states, their ability to accurately interpret their children's internal experiences) has a positive

relationship to children's ToM (for review, see McMahon & Bernier, 2017). However, as for parental reflective functioning, which is parents' not only recognizing but also behaving based on the mental states of their children and maintaining awareness of how their children's mental states reciprocally influence their own, research on its relationship to children's ToM is more limited. Two recent studies have examined the relationship between parental reflective functioning and children's ToM (Cowes & Santelices, 2020; Nijssens et al., 2021). Cowes and Santelices (2020) found a negative relationship between parents' prementalization and 3- to 4-year-old children's ToM by considering only the prementalization dimension due to its fit with psychometric properties. In a study with 3–5-year-old children, Nijssens et al. (2021) found age-related differences in the links between parental reflective functioning and children's ToM. Specifically, maternal prementalization negatively related to children's affective ToM, while maternal interest and curiosity in their children's mental states positively associated with children's performance on various ToM tasks, primarily in younger children. Furthermore, maternal certainty about mental states positively correlated with older children's affective ToM performance. These findings provide further insight into the complex relationship between parental reflective functioning and children's ToM, highlighting the importance of considering both parent- and child-related factors when exploring this relationship. In light of the possible connection between parental reflective functioning and their mental state talk, it is plausible that parental reflective functioning might play a role in the development of children's ToM both directly and indirectly through the mediation of parents' mental state talk directed to their children. Since previous research has not yet examined whether parents' mental state talk directed to their children mediates the relationship between parental reflective functioning and children's ToM, the current study was the first to investigate this indirect relationship.

Parents' own ToM skills may be another factor behind individual differences in their mental state talk directed to their children. Parents who understand mental states correctly may easily and effectively mention these states in a sophisticated way during conversations. Furthermore, parents who are skilled at mental state understanding may realize their children's mental states and aim to foster mental state understanding of their children by intentionally using mental state terms during conversations with their children.

Despite the lack of research on the relationship between ToM and mental state talk in an adult sample, a study conducted with school-aged children found that ToM performance was predictive of their mental state talk in both narrative and informational texts (Kim et al., 2021). Therefore, it is plausible to suggest that a similar relationship may exist between ToM and mental state talk in adults, which this study aimed to investigate.

Parents' own ToM skills are likely to be related to their children's ToM both via genetic transmission and parental practices such as parents' mental state talk directed to their children, which was aimed to examine in this study. Up to date, only two studies examined the relationship between parents' and their young children's ToM and reported positive associations (Devine & Hughes, 2019; Sabbagh & Seamans, 2008). Sabbagh and Seamans (2008) measured parents' ToM by using the Reading the Mind in the Eyes Test (Baron-Cohen et al., 2001) and children's ToM via five-item ToM scale (Wellman & Liu, 2004) when the children were at 3.5 and 4 years of age. Parents who had higher ToM scores also had children who showed better performance on ToM tasks. As for Devine and Hughes (2019), they found a significant positive association concurrently between parents' ToM assessed by the Reading the Mind in the Eyes Test (Baron-Cohen et al., 2001) and children's ToM assessed by several false belief tasks (Harris et al., 1989; Sullivan et al., 1994). However, in these studies, children's ToM was either measured by only false belief tasks or behavioral ToM tasks. Focusing on just one aspect (i.e., false-belief understanding) or one-time assessment (i.e., behavioral tasks) of ToM may not be sufficiently representative of the mental state understanding and everyday performance of children (Tahiroğlu et al., 2014). Although there are various studies using false belief tasks to assess children's ToM (e.g., Dunn et al., 1991; Hughes, 1998; Perner et al., 1994), mental state understanding is much more than just false belief understanding. Wellman and Liu (2004) developed a widely-used task battery including measures of several mental states based on pass/fail criteria, which do not take into account variations in performance. Furthermore, lab-based tasks may not have high ecological validity as they fail to account for the complexity and diversity of children's everyday lives (Tahiroğlu et al., 2014). The current study aimed to investigate ToM abilities of children via both lab-based tasks and parent-reported scale to represent everyday life of children.

1.1. The Present Study

The development of theory of mind skills in children facilitates their comprehension of mental states, such as thoughts, beliefs, and emotions experienced by both themselves and others. This capability is closely associated with fundamental social skills required in everyday life, including empathy, imagination, communication, and academic success. Parents' mental state talk with their children is a crucial element in promoting theory of mind development in children. Nevertheless, prior studies have not examined individual variations in parents' mental state talk in relation to their socio-cognitive abilities. In the current study, we aimed to examine whether (1) mothers' parental reflective functioning and theory of mind skills can account for variations in their mental state talk with their children and (2) whether mothers' mental state talk with their children acts as a mediator in the relationship between mothers' sociocognitive skills (i.e. parental reflective functioning and their own theory of mind skills) and their children's theory of mind skills. The available literature provides limited insight into the link between maternal reflective functioning and children's ToM. Only two studies have investigated this relationship (Cowes & Santelices, 2020; Nijssens et al., 2021). However, Cowes and Santelices (2020) solely examined the prementalization dimension of parental reflective functioning. The present study sought to address this gap by investigating the associations of the other two dimensions (i.e., certainty about mental states, interest and curiosity in mental states) with children's ToM abilities. Furthermore, we suggest that this relationship can be established indirectly through mothers' mental state talk, an aspect not previously explored. In addition, both studies relied on behavioral tasks to measure children's ToM, and it would be an important contribution of the present research to also assess ToM skills using a parent-reported measure.

The first objective of the current study was to examine the direct and indirect (i.e., through the mediation of mothers' mental state talk) relationships between maternal reflective functioning and children's ToM using a comprehensive assessment of children's ToM. Therefore, this study is the first to investigate the mediating role of mothers' mental state

talk between maternal reflective functioning and children's ToM. Furthermore, only two studies have examined the link between parents' and children's ToM (Devine & Hughes, 2019; Sabbagh & Seamans, 2008). The second objective was to fill this gap in the literature also by including mothers' mental state talk as a mediator. Thirdly, we aimed to investigate the association between children's ToM assessed by behavioral tasks and maternal report. We sought to examine the relationships between those variables in a comprehensive model by using structural equation modeling. For the first objective, we hypothesized that (1) there would be a positive association between the level of mothers' interest and curiosity in their children's mental states and their total amount of mental state talk, while (2) mothers' level of prementalization would be negatively associated with their total amount of mental state talk. Since there are limited studies including certainty about mental states subscale of parental reflective functioning, we conducted an exploratory analysis to examine the association between mothers' certainty about their children's mental states and their mental state talk and children's ToM. We also anticipated that (3) mothers' level of interest and curiosity in their children's mental states would be positively related with children's ToM performance on both behavioral tasks and maternal report, while (4) mothers' level of prementalization would be negatively correlated with children's ToM performance on both behavioral tasks and maternal report. Furthermore, we expected that (5) the total amount of mothers' mental state talk would mediate the relationships between maternal reflective functioning subcategories and children's ToM. For the second objective, we predicted that (6) there would be a positive relationship between mothers' ToM scores and the total amount of mothers' mental state talk. In addition, we expected (7) a positive relationship between mothers' ToM scores and children's ToM performance on both behavioral tasks and maternal report. Moreover, we expected (8) a significant indirect relationship between mothers' and children's ToM via the total amount of mothers' mental state talk. Lastly, (9) a positive association between children's ToM assessed by behavioral tasks and maternal report was anticipated. We aimed to conduct an explorative analysis to examine the associations between mothers' mental state talk subcategories and the study variables. Taking all these associations into account, the main objective of the present study was to propose a comprehensive model (see Figure 1.1) that examines the relationships between all variables and to compare it with an alternative model (see Figure 1.2). Given the cross-

sectional nature of our data, we also tested an alternative model to explore potential alternative causal pathways. A comprehensive investigation of the associations between mothers' sociocognitive abilities, mental state talk directed to their children, and children's ToM would be a valuable contribution to the literature.

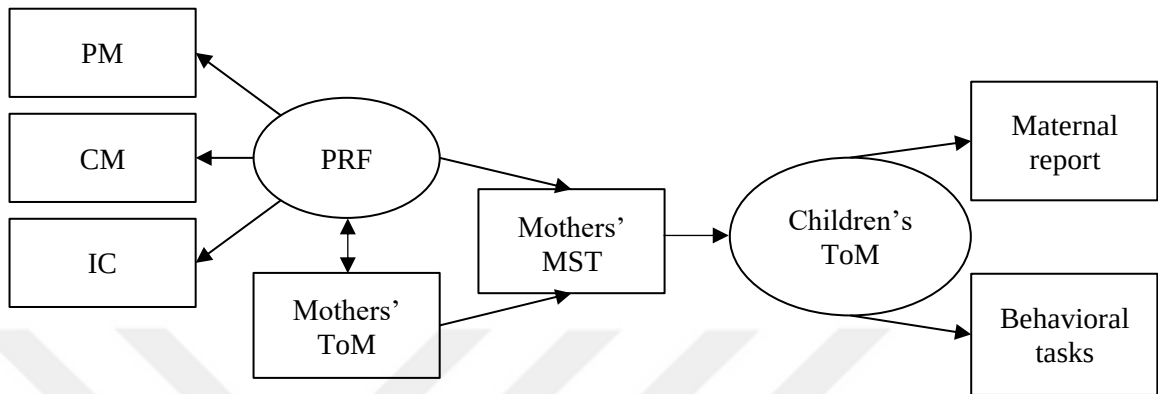


Figure 1.1 The Proposed Model of the Present Study

Note. PM = Prementalization. CM = Certainty about mental states. IC = Interest and curiosity in mental states. PRF = Parental reflective functioning. ToM = Theory of mind. MST = Mental state talk.

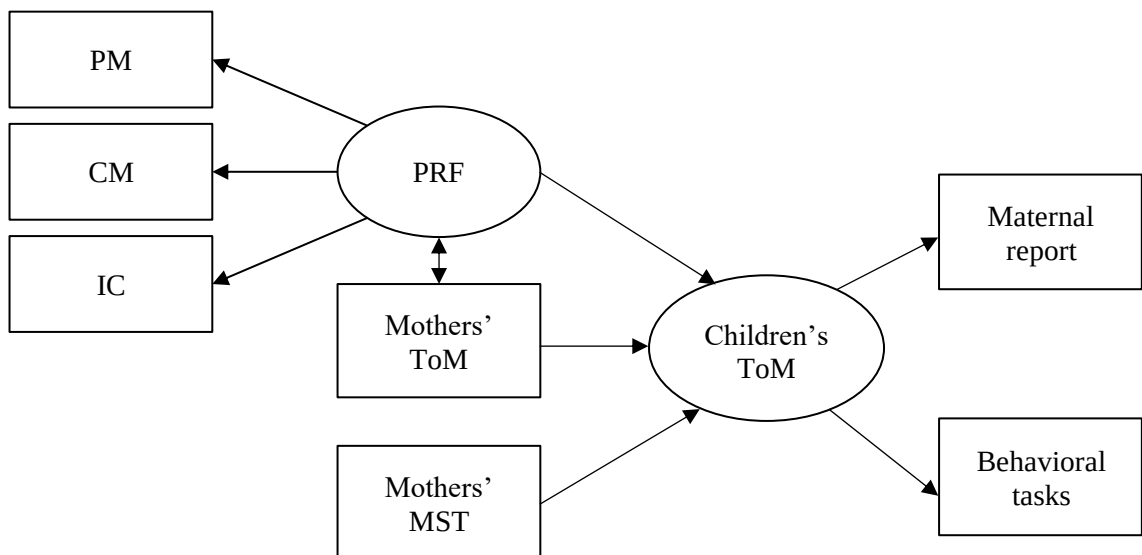


Figure 1.2 The Alternative Model

Note. PM = Prementalization. CM = Certainty about mental states. IC = Interest and curiosity in mental states. PRF = Parental reflective functioning. ToM = Theory of mind. MST = Mental state talk.

2. METHOD

2.1. Participants

The minimum sample size required to test the proposed model (see Figure 1.1) by using structural equation modeling was determined to be 90, based on a presumed statistical power of .80 and an estimated effect size of .30 (Cohen, 1988; Soper, 2021; Westland, 2010). The sample for this study consisted of 89 mothers ($M(SD)_{age} = 34(4.38)$, *age range* = 24-50) and their children ($M(SD) = 57(5.49)$, *age range* = 48-69 months) living in Turkey. Of these, 49 (55.1%) were girls and 40 (44.9%) were boys. Maternal educational background varied, with 3 (3.4%) having graduated from elementary or middle school, 22 (24.7%) having graduated from high school or associate degree programs, 42 (47.2%) having earned a bachelor's degree, and 22 (24.7%) having graduate degrees. The household income of the families in this study was assessed using a 5-point scale, where 1 represented 1600 TL and below, and 6 represented 11500 TL and above. None of the participants reported incomes of 1600 TL or below. Out of the 89 mother-child dyads, 5 (5.6%) reported incomes in the 2nd category (1600-4000 TL), while another 5 (5.6%) reported incomes in the 3rd category (4000-5500 TL). 22 (24.7%) participants reported incomes in the 4th category (5500-11500 TL), and the majority of families, 56 (62.9%), reported incomes in the highest category (6), representing 11500 TL and above. Out of all participants, 59 mother-child dyads (66.3%) were recruited from Istanbul, while the remaining participants were recruited from various cities throughout Turkey. Participants were recruited through online platforms (i.e., Instagram, Facebook etc.). Children were required to meet the inclusion criteria of being fluent in Turkish and having no reported developmental disabilities or mental health issues that could interfere with the study. Mothers gave informed consent for both themselves and their children prior to data collection. Ethical approval was granted by the Ethics Committee of Kadir Has University.

2.2. Materials

Children's theory of mind skills were assessed by both the Five-Item ToM Scale (Wellman & Liu, 2004) and Children's Social Understanding Scale (Tahiroğlu et al., 2014).

2.2.1. Five-item theory of mind scale

The Turkish translation (Etel & Yagmurlu, 2015) of Wellman and Liu's (2004) widely-used theory of mind scale was used. It is suggested that the scale can be used as a seven-item scale (diverse desires, diverse beliefs, knowledge access, explicit false belief, content false belief, belief emotion, hidden emotion) or a five-item scale (diverse desires, diverse beliefs, knowledge access, content false belief and hidden emotion) (Wellman & Liu, 2004). As in Peterson and colleagues (2005) and Selcuk and colleagues (2018), we used the five-item scale in the current study. Since Turkish children demonstrated similar theory of mind acquisition order with collectivist cultures such as Chinese and Iranian (Selcuk et al., 2018), the order of the presented tasks was as follows: diverse desires, knowledge access, diverse beliefs, content false belief, and hidden emotion. There were 2 story characters (1 girl, 1 boy) to use one of them in each task. If children correctly answered both the control and target questions in a task, then children passed the task. The total score for each child was computed by summing the scores in each task.

2.2.2. Children's social understanding scale

Children's theory of mind skills were further assessed by the Children's Social Understanding Scale (CSUS), a parent-report scale developed by Tahiroğlu and her colleagues (2014) and adapted into Turkish by Tahiroğlu and Yağmurlu (2014). The scale consists of 42 items scored on a 4-point Likert scale (1=definitely untrue to 4=definitely true with a "don't know" option). Items on the scale assess children's mental state understanding in the following six dimensions: belief (e.g., "understands that telling lies can mislead other people"), knowledge (e.g., "is good at playing 'hide and seek'"), perception (e.g., "talks about the difference between the way things look and how they really are"), desire (e.g., "talks about differences in what people like or want"), intention (e.g., "talks about the difference between intentions and outcomes"), and emotion (e.g., "understands that different people can have different feelings about the same thing"). The reverse-scored items were adjusted accordingly. For each subdimension, the total score was calculated by averaging the item scores, excluding the "don't know" answers. Subsequently, the average of these total scores from all subdimensions was taken to

determine the overall scale score. Cronbach's alphas were .90 for overall scale score, .71 for Belief, .61 for Knowledge, .13 for Perception, .70 for Desire, .77 for Intention, and .54 for Emotion subdimensions.

2.2.3. Parental reflective functioning questionnaire

Maternal reflective functioning was measured by the Turkish version (Arıkan et al., 2020) of the Parental Reflective Functioning Questionnaire (PRFQ; Luyten et al., 2017b). The PRFQ is a self-report questionnaire and includes 18 items to be rated on a 7-point Likert scale (1=strongly disagree to 7=strongly agree). The PRFQ is thought to measure three dimensions of parental reflective functioning where each dimension corresponds to six items. The first dimension is called *prementalization*, which refers to parents' difficulty in understanding and attending to their children's inner worlds (e.g., "My child cries around strangers to embarrass me."). *Certainty about mental states*, the second dimension, assesses the extent of parents' belief that their children's mental states are fully recognizable for them (e.g., "I can always predict what my child will do."). The last dimension, *interest and curiosity in mental states*, refers to parents being interested in their children's mental states (e.g., "I try to see situations through the eyes of my child."). In line with the previous literature (Gordo et al., 2020; Luyten et al., 2017b; Nijssens et al., 2018; Nijssens et al., 2020; Rutherford et al., 2017; Schultheis et al., 2019), mothers' total scores on each of these three dimensions were computed by summing the scores on the items after reversing the two reverse-scored items ("I can sometimes misunderstand the reactions of my child", "I believe there is no point in trying to guess what my child feels"). Cronbach's alpha values of the Turkish version of the scale were .77 for PM, .75 for CM, and .72 for IC (Arıkan et al., 2020). In the current study, the values were found as .62 for PM, .82 for CM, and .76 for IC.

2.2.4. Reading the mind in the eyes test

Mothers' theory of mind skills were assessed by using the Turkish version (Girli, 2014) of the Reading the Mind in the Eyes test (Baron-Cohen et al., 2001). In this task, mothers were presented with 36 pictures depicting eye regions of human faces, which involve just

above the eyebrow and the middle of the nose, in the test. Each picture was accompanied by four mental state adjectives where one of these adjectives correctly described the mental state seen on the face. The total score was calculated by summing the number of correct responses on the test.

2.2.5. Mothers' mental state talk

To assess mothers' mental state talk, the wordless picture book "*Frog Where Are You?*" by Mayer (1969) was used. This 29-page picture book narrates the story of a boy looking for his pet frog with his dog. The story provides the readers opportunities to mention various mental state expressions and has been widely-used to assess parental talk directed to children (Baptista et al., 2016; Bekar et al., 2018; Bozbiyık, 2016; Devine & Hughes, 2019; Halfon et al., 2020; Tompkins et al., 2018). Since the study was conducted online, the book was shown on the screen to the mothers and the experimenter turned the pages upon mothers' request.

2.2.6. Children's expressive vocabulary

Children's expressive vocabulary was assessed via the Turkish Expressive and Receptive Language Test (TIFALDI; Berument & Güven, 2013) to explore its associations with the study variables. In this test, 80 pictures from different categories (e.g., toys, vehicles, animals) were shown to children who were asked to name the object, person, animal etc. depicted in the picture. The pictures were shown to the children from the age thresholds which is appropriate for the children's age. The base score was determined as the point where the child answered correctly the 8 pictures coming consecutively. The ceiling score was calculated as the place where the child answered at least six of the eight consecutive pictures incorrectly. The test is based on the accuracy of the responses between the base score and the ceiling score.

2.2.7. Maternal child-directed speech

Child-directed speech of mothers was assessed as their total and different number of words used during the picture book narration session. The transcriptions were reviewed using the CLAN program to calculate the total and different word counts of each mother's child-directed speech, with the *total word count* reflecting the quantity of mothers' child-directed speech and the *different word count* reflecting the quality of mothers' child-directed speech.

2.2.8. Demographic variables

Demographic information about the participants such as mother and child age, sex of the child, parental education, household income, number of children and number of adults living at home, number of younger and older siblings, whether the child went to kindergarten, and number of days spent in kindergarten was collected via a demographic information form.

2.3. Procedure

Mothers were asked to complete the demographic information form, Parental Reflective Functioning Questionnaire, Reading the Mind in the Eyes Test, and Children's Social Understanding Scale on Qualtrics with the participant number given to them, respectively. After the mothers completed the survey, a video conference session was arranged on the Zoom platform on the same day and the session was videotaped with the consent of the mothers at the beginning. The session started with theory of mind tasks presented to the children while mothers were asked to review the picture book sent to them through e-mail or message. Mothers were informed that after the ToM tasks were completed, they would narrate the book to their children. After children's theory of mind tasks were completed, mothers were requested to narrate the story of the book on the screen to their children as they usually do at home. It was reminded to them that there was no time restriction for picture book reading. The researcher turned over the pages upon mothers' request. Finally, the Turkish Expressive and Receptive Language Test was applied to the children to

measure their expressive vocabulary. The total duration of the online session was around 60 minutes. A 50 TL gift card was sent to each participant at the end of the session.

2.4. Transcription and Data Coding

The video-taped book reading sessions were transcribed by two undergraduate research assistants using the CHAT transcription format (MacWhinney, 2000), with an average transcription time of 90 minutes per video. By using the transcriptions, mothers' mental state talk was coded by two coders, where one was the main researcher and the other was a Masters' student who is a volunteer member of the Child and Family Studies Laboratory, based on the coding system developed by Ilgaz et al. (in prep.) for Turkish-speaking participants. Table 2.1 summarizes the coding scheme and provides examples. First, each clause that the mothers produced was coded according to whether the clause belonged to the story narration (e.g., "Do you think that the boy was upset?") or not (e.g., "Don't look at your sister, look at the book!"). Only the clauses that belonged to the story narration were further coded in terms of whether they contained a mental state reference. These mental state references may be related to perception (e.g., to smell, to look), physiological state (e.g., to be hungry), desire (the sentence level and the conjugation level) (e.g., to wish, subjunctive mood), motivation (e.g., to try), affect (e.g., worry), and cognition (e.g. to dream, perhaps). Lastly, the mental state terms were coded according to the perspective which depicts whether the terms are within narrative (i.e., the terms refer to the characters) or outside the narrative (i.e., the terms refer to the listener or narrator). Frequency of the mental state term use was coded as the mothers' total mental state talk, following Ruffman et al. (2002). The intraclass correlation coefficients indicating interrater reliability for the total mental state terms was .99, for the within-narrative mental state terms was 1.00, and for the outside-narrative mental state terms was 1.00.

Table 2.1 Coding Scheme of Maternal Mental State Talk

Coding	Explanation
Mental State Terms	1. Perception Terms Examples: look, listen, see, watch (e.g., <i>The boy started to listen to the voices coming from the tree hollow</i>) 2. Physiological Terms Examples: be hungry, get hurt, get rest, be injured (e.g., <i>The foot of the dog was injured</i>) 3. Desire Terms 3a. Desire Terms-Word Level: Examples: wish, want, hope, beg (e.g., <i>I want to find the frog right now</i>) 3b. Desire Terms-Conjugation Level: Examples: subjunctive mood (-se, -sa) and optative mood (-e, -a).¹ (e.g., <i>Keşke kurbağayı yalnız bırakmasaydım</i> ‘I wish I hadn’t left the frog alone’) 4. Motivational Terms Examples: work, attempt, promise, endeavor (e.g., <i>The boy promised to never let go of the frog</i>) 5. Affective Terms Examples: like, have fun, worry, forgive (e.g., <i>The boy forgave the dog</i>) 6. Cognitive Terms 6a. Cognitive Terms-Word Level Examples: remember, think (e.g., <i>The dog remembered where the frogs lived</i>)

¹ The conjugation level of subjunctive mood and optative mood are peculiar to Turkish.

Perspective	6b. Cognitive Terms of Certainty-Word Level Examples: probably, maybe (e.g., <i>They will probably fall into the lake</i>)
	6c. Cognitive Terms of Certainty-Conjugation Level Examples: -malı, -abilir (e.g., <i>Köpeğin canının acımasından korktuğu için çocuk köpeğe kızmış olabilir</i> ‘The child might have been angry at the dog because he was afraid that the dog was in pain’)
	6d. Cognitive Terms of Contrastives Examples: actually, falsely believe (e.g., <i>They were actually deer antlers</i>)
	6e. Cognitive Terms of Perspectives Examples: I think, you think (e.g., <i>I think the dog got wet in the lake</i>)
	Within-narrative Mental State Talk: The terms that depict the mental states of the story characters. (e.g., <i>The dog was very excited</i>) Outside-narrative Mental State Talk: The terms that depict the mental states of the narrator or the listener. (e.g., <i>Look at the dog</i>)

2.5. Data Analysis

Before proceeding with the analyses, the theory of mind score on the maternal report of 2 participants and the expressive vocabulary data of 3 participants were excluded due to missing information from the analyses in which the relevant variables were included. In addition, z-scores were computed for each variable to detect outliers which exceeded the absolute cutoff of ± 3.0 standard deviations from the mean. There were 1 outlier for children’s theory of mind score based on behavioral tasks, 1 outlier for mothers’ theory

of mind, 1 outlier for mothers' interest and curiosity in mental states, 2 outliers for mothers' total mental state talk, and 2 outliers for mothers' outside-narrative mental state talk, 1 outlier for both the quality and the quantity of the maternal speech. Since the data was not normally distributed as indicated by Shapiro-Wilk test results ($p < .05$), Spearman correlation analyses were conducted to analyze the relations between variables.

To examine how well the observed variables represent the latent variables, measurement model was tested by *lavaan* package (Rosseel, 2012) in R version 2022.12.0 (R Core Team, 2021). To test the proposed model (see Figure 1.1) and compare with the alternative model (see Figure 1.2), structural equation modeling was conducted through RStudio (R Core Team, 2021) by using *lavaan* package (Rosseel, 2012). In the proposed model, parental reflective functioning (PRF) and children's theory of mind are the latent variables while mothers' theory of mind, mothers' total mental state talk, prementalization, certainty about mental states, interest and curiosity in mental states, maternal report on children's theory of mind, and children's behavioral theory of mind are the observed variables. The chi square test (X^2), the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA) were used to evaluate the fitness of the proposed model to the data and to compare the models. Lastly, mediation analyses between the study variables were conducted in R (R Core Team, 2021) by using *process* (Hayes, 2022).

3. RESULTS

Descriptive statistics and correlations for study variables are presented in Table 3.1 and Table 3.2. Percentages of children's passing of each ToM task were represented in Table 3.3.

Table 3.1 Descriptive Statistics of the Study Variables

	M	SD	Min	Max
Child's age (months)	57.0	5.49	48	69
Child's expressive vocabulary	53.6	10.7	25	76
Quality of maternal speech	304.7	95.3	123	561
Quantity of maternal speech	609.5	237.7	215	1292
Socioeconomic status	4.9	1.7	1	7
Behavioral ToM score	3.0	0.9	1	5
Reported ToM score (CSUS)	3.1	0.4	2.2	3.8
PRF-Prementalization	14.5	5.8	6	31
PRF-Certainty about mental states	28.1	6.5	10	42
PRF-Interest and curiosity in mental states	37.8	3.9	25	42
Mothers' ToM	26.1	3.0	19	31
Within-narrative mental state talk	41.9	18.1	10	96
Outside-narrative mental state talk	31.7	31.3	0	122
Total mental state talk	73.4	40.3	12	194
Percentage of total mental state talk within total maternal speech	11.7	3.2	3.6	20.6

Note. ToM = Theory of mind. CSUS = Children's Social Understanding Scale. PRF = Parental reflective functioning.

Table 3.2 Spearman Correlations between the Study Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Child's age (months)	-												
2.Expressive vocabulary	.37***	-											
3.Quality of maternal speech	.05	.32**	-										
4. Quantity of maternal speech	-.03	.22*	.96***	-									
5. Behavioral ToM score	.30**	.34**	.09	.04	-								
6. Reported ToM score (CSUS)	.09	.31**	.22*	.17	.25*	-							
7. PRF-Prementalization	.04	-.06	-.15	-.16	-.11	-.32**	-						
8. PRF-Certainty about mental states	-.001	-.08	.01	.04	-.02	-.08	-.27*	-					
9. PRF-Interest and curiosity in mental states	-.03	.01	.24*	.21	.14	.25*	-.28**	.20	-				
10. Mothers' ToM	.03	-.01	.16	.16	.22*	.20	-.19	-.05	.09	-			
11. Within-narrative mental state talk	-.07	.05	.69***	.70***	.10	.19	-.27**	.24*	.30**	.10	-		
12.Outside-narrative mental state talk	.05	.39***	.66***	.67***	.25*	.21	.00	-.09	.16	.15	.25*	-	
13. Total mental state talk	-.08	.24*	.87***	.88***	.15	.17	-.10	.01	.24*	.17	.64***	.82***	-
14. Percentage of total mental state talk within total maternal speech	-.10	.22*	.33**	.31**	.24*	.14	-.09	.03	.11	.10	.26*	.64***	.68***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. ToM = Theory of mind. CSUS = Children's Social Understanding Scale. PRF = Parental reflective functioning.

Table 3.3 Pass rates for each task in the theory of mind scale among children (N = 88)

ToM Scale Item	N	Percentage
Diverse desires	79	89.8%
Knowledge access	77	87.5%
Diverse beliefs	49	55.7%
Content false belief	31	35.2%
Hidden emotion	31	35.2%

3.1. Associations between Demographic and Study Variables

Child age was positively correlated with children's theory of mind score measured with behavioral tasks, but not with ToM skills measured by maternal report. Child age was also positively correlated with children's expressive vocabulary. Participants' socioeconomic status (based on the composite score of maternal education, employment, and household income following Berzofsky et al. (2014)) was positively associated with children's ToM score based on maternal report ($r_s=.25, p=.02$), mothers' theory of mind ($r_s=.21, p=.04$), children's expressive vocabulary ($r_s=.27, p=.01$), mothers' within-narrative mental state talk ($r_s=.28, p=.008$) and mothers' outside-narrative mental state talk ($r_s=.22, p=.04$), and the quality ($r_s=.33, p=.002$) and the quantity ($r_s=.25, p=.02$) of maternal speech.

The number of adults at home was positively associated with mothers' prementalization ($r_s=.21, p=.04$) but negatively associated with mothers' interest and curiosity in their children's mental states ($r_s=-.21, p=.04$), as well as with mothers' within-narrative mental state talk ($r_s=-.37, p<.001$), and the quality ($r_s=-.28, p=.008$) and the quantity of maternal speech ($r_s=-.27, p=.01$). The number of older siblings was negatively associated with mothers' interest and curiosity in their children's mental states ($r_s=-.30, p=.004$) and mothers' within-narrative mental state talk ($r_s=-.29, p=.005$). As for the number of younger siblings, it was negatively correlated with mothers' prementalization ($r_s=-.24, p=.02$), positively correlated with mothers' certainty about their children's mental states

($r_s=.24$, $p=.03$) and mothers' within-narrative mental state talk ($r_s=.30$, $p=.005$), and the quantity of maternal speech ($r_s=.22$, $p=.04$).

3.2. Mothers' Sociocognitive Skills and Mental State Talk: Are They Related?

Mothers' interest and curiosity in their children's mental states was hypothesized to be positively correlated with mothers' total mental state talk. The results verified this hypothesis by demonstrating a significant positive correlation between mothers' interest and curiosity in their children's mental states and their total mental state talk. Additionally, mothers' interest and curiosity in their children's mental states was significantly positively associated with mothers' within-narrative mental state talk, but not with their outside-narrative mental state talk.

For mothers' prementalization, it was expected that mothers who had higher prementalization scores would direct less mental state talk in total to their children. Although there was a negative correlation, the results did not reach the level of statistical significance. However, the significant negative relationship between mothers' prementalization and within-narrative mental state talk partially confirmed the hypothesis. There was no significant relationship between mothers' prementalization and outside-narrative mental state talk.

As for the mothers' certainty about their children's mental states, an exploratory analysis was conducted. The results demonstrated that mothers who had higher levels of certainty about their children's mental states produced more mental state talk referring to the story characters. There was a negative relationship between mothers' certainty about their children's mental states and outside-narrative mental state talk, however this relationship was not significant.

Mothers who had higher ToM skills were expected to direct more mental state talk in total to their children. Although there was a positive association, the results were not significant for mothers' total mental state talk, within-narrative mental state talk, and outside-narrative mental state talk.

3.2.1. Mothers' sociocognitive skills and the subcategories of mental state talk

An exploratory analysis was planned to examine the relationships between mothers' mental state talk in different categories (e.g., cognitive terms, affective terms) and the study variables. The correlations can be seen in Table 3.4.

First, the relationships between maternal reflective functioning and mental state talk subcategories were analyzed. Mothers' interest and curiosity in their children's mental states was found to be significantly positively associated with mothers' perception terms, physiological terms, desire terms, affective terms, and cognitive terms in the word level. Mothers' prementalization was found to be significantly negatively correlated with mothers' cognitive terms of contrastives. There was no significant relationship between mothers' certainty about their children's mental states and mental state talk subcategories.

As for the mothers' theory of mind, it was found to be in a significant positive relationship only with mothers' cognitive terms of certainty.

3.3. The Relationship between Mothers' Mental State Talk and Children's Theory of Mind

Children of mothers who direct more mental state talk in total to their children were expected to have a better performance on behavioral ToM tasks and higher scores on maternal reports. However, while a positive correlation was found, it was not significant for either behavioral tasks or maternal reports. Confirming our hypothesis, when the percentage of mothers' total mental state talk within total maternal speech was taken into consideration, a significant positive correlation was found for children's theory of mind on behavioral tasks. In addition, there was a significant positive correlation between mothers' outside-narrative mental state talk and children's theory of mind scores on both behavioral tasks. Control for child age did not alter these results.

3.3.1. Children's theory of mind and the subcategories of mental state talk

In previous studies (Adrian et al., 2005; Ensor & Hughes, 2008; Ruffman et al., 2002; Slaughter et al., 2007), it has been found that mothers' cognitive terms are more strongly related to children's theory of mind skills compared to affective and desire terms, leading to the expectation of a positive relationship between these two variables. As can be seen in Table 3.4, confirming this expectation, a significant positive relationship was found between mothers' total number of cognitive terms and children's theory of mind skills measured by behavioral tasks. Children's theory of mind measured by behavioral tasks was found to be significantly positively related with mothers' desire terms, cognitive terms of certainty, cognitive terms of contrastives, and cognitive terms of perspectives. Children's theory of mind assessed by maternal report was significantly positively correlated with mothers' affective terms, cognitive terms of certainty, and cognitive terms of contrastives.

Table 3.4 Descriptive Statistics and Spearman Correlations between the Study Variables and MST Subcategories

	M (SD)	Min – Max	1	2	3	4	5	6
1. Behavioral ToM score	3.0 (0.9)	1 – 5	-					
2. Reported ToM score (CSUS)	3.1 (0.4)	2.2 – 3.8	.26*	-				
3. PRF-Prementalization	14.5 (5.8)	6 – 31	-.11	-.29**	-			
4. PRF-Certainty about mental states	28.1 (6.5)	10 – 42	-.02	-.07	-.27*	-		
5. PRF-Interest and curiosity in mental states	37.8 (3.9)	25 – 42	.14	.20	-.24*	.18	-	
6. Mothers' ToM	26.1 (3.0)	19 – 31	.22*	.20	-.19	-.05	.09	-
7. Perception terms	30.1 (15.7)	5 – 80	.02	.14	-.03	.06	.21*	.05
8. Physiological terms	3.6 (2.2)	0 – 10	.09	.15	-.20	.16	.21*	.16
9. Desire terms-word level	1.4 (1.7)	0 – 8	.04	-.05	-.12	.16	.22*	.02
10. Desire terms-conjugation level	4.9 (5.7)	0 – 26	.23*	.20	-.10	-.10	.16	.15
11. Total desire terms	6.2 (5.8)	0 – 26	.23*	.19	-.16	-.01	.25*	.19
12. Motivational terms	1.3 (1.1)	0 – 4	.03	.04	.07	.16	.05	-.07
13. Affective terms	9.9 (5.9)	0 – 28	.05	.21*	-.16	.10	.21*	.14
14. Cognitive terms-word level	7.6 (5.5)	0 – 25	.22*	.08	-.19	.12	.23*	.08
15. Cognitive terms of certainty-word level	5.7 (5.7)	0 – 25	.27*	.30**	-.09	-.12	.13	.32**
16. Cognitive terms of certainty-conjugation level	3.0 (3.6)	0 – 16	.17	.004	-.14	.11	.11	.04
17. Total cognitive terms of certainty	8.8 (8.9)	0 – 42	.27*	.23*	-.11	-.07	.18	.24*
18. Cognitive terms of contrastives	3.2 (2.8)	0 – 11	.22*	.27*	-.23*	.13	.18	.12
19. Cognitive terms of perspectives	1.6 (2.7)	0 – 12	.25*	.11	.04	-.08	-.07	.07
20. Total cognitive terms	21.5 (16.7)	0 – 73	.29**	.20	-.15	.02	.20	.17

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

3.4. Children's Theory of Mind and Mothers' Sociocognitive Skills: Are They Related?

It was anticipated that children of mothers who had higher levels of interest and curiosity in their children's mental states would have better performance on behavioral ToM tasks and higher scores on maternal reports. Partially confirming our hypothesis, a significant positive relationship was found between mothers' interest and curiosity in their children's mental states and children's theory of mind based on maternal reports, but this relationship was not observed in behavioral tasks. Additionally, it was hypothesized that there would be a negative correlation between mothers' prementalization and children's theory of mind performance. Results showed a non-significant negative correlation between mothers' prementalization and children's theory of mind scores on behavioral tasks, but a significant negative correlation with children's theory of mind scores based on maternal reports. There was no significant correlation between mothers' certainty about their children's mental states and children's theory of mind scores on neither behavioral tasks nor maternal reports.

Regarding the relationship between mothers' and children's theory of mind, we expected that mothers with better ToM skills would also have children with better ToM skills. The hypothesis was supported by the significant positive relationship between mothers' theory of mind and children's theory of mind on behavioral tasks but not maternal reports.

3.5. Is There a Relationship Between Children's ToM Measured by Behavioral Tasks and Maternal Report?

We expected that children who performed better on behavioral ToM tasks would be perceived by their mothers as having better ToM skills. As expected, there was a significant positive correlation between children's ToM assessed by behavioral tasks and maternal reports. The result remained the same after controlling for the child's age.

3.6. Structural Equation Modeling

To test whether the proposed model (see Figure 1.1) demonstrated a good fit to the data, structural equation modeling was conducted.

3.6.1. Measurement model

The measurement model (see Figure 3.1) tested whether parental reflective functioning latent variable was significantly represented by mothers' interest and curiosity in their children's mental states, their prementalization, and certainty about their children's mental states observed variables. In addition, whether the children's theory of mind latent variables was successfully represented by the behavioral tasks and maternal report observed variables was tested through the measurement model.

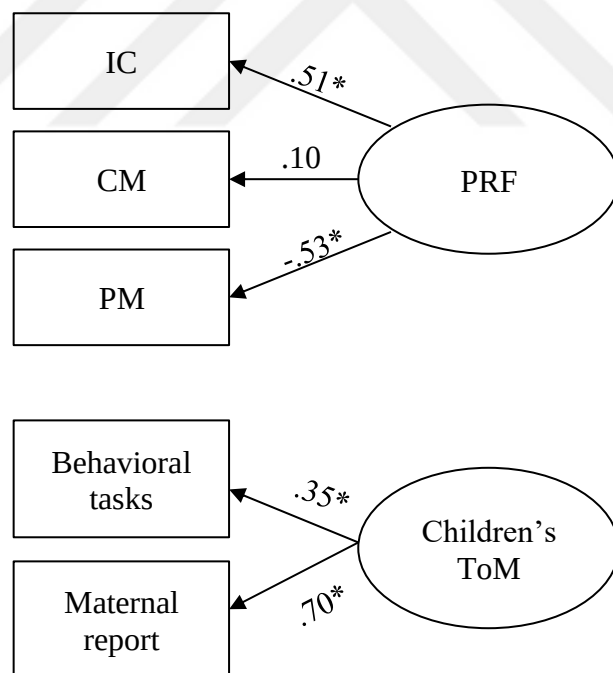


Figure 3.1 Measurement Model

Note. PM = Prementalization. CM = Certainty about mental states. IC = Interest and curiosity in mental states. PRF = Parental reflective functioning. ToM = Theory of mind. MST = Mental state talk.

According to the structural equation modeling results of the measurement model, although the chi square test of the model was not significant indicating that the model fitted to the data, the fit indices demonstrated that the model showed a poor fit to the data: $X^2(4) = 7.063$, $p = .13$, CFI = .81, TLI = .54, RMSEA = .09, 90% CI = 0.000 to 0.209. The standardized factor loadings for parental reflective functioning latent variable indicated that parental reflective functioning factor was significantly represented by mothers' interest and curiosity in their children's mental states ($\beta = .514$, $SE = .171$, 95% CI = [.18, .85]) and prementalization ($\beta = -.533$, $SE = .175$, 95% CI = [-.87, -.19]) but not by their certainty about their children's mental states ($\beta = .10$, $SE = .154$, 95% CI = [-.20, .41]). As for the standardized factor loadings for children's theory of mind, it was significantly represented by both maternal report ($\beta = .705$, $SE = .280$, 95% CI = [.15, 1.25]) and behavioral tasks ($\beta = .355$, $SE = .168$, 95% CI = [.02, .68]). Since the measurement model did not fit to the data at an acceptable level and the parental reflective functioning factor was not significantly loaded by one of the observed variables, the proposed and alternative models were not tested. The mediating role of mothers' mental state talk between parental reflective functioning and children's theory of mind and between mothers' and children's theory of mind was tested through mediation analyses.

3.7. Mediation Analyses

We expected that mothers' total mental state talk would mediate the relationship between mothers' socio-cognitive abilities and children's ToM skills. However, since mothers' total mental state talk was not significantly correlated with the study variables (except for mothers' interest and curiosity in their children's mental states), the mental state talk subcategories which were significantly related to both mothers' socio-cognitive abilities and children's ToM skills were included in the mediation analyses.

The mediation model (see Figure 3.3) with mothers' theory of mind as the predictor variable, children's theory of mind measured by behavioral tasks as the outcome variable, mothers' amount of cognitive terms of certainty in the word level as the mediator variable, and child's age as the control variable was significant ($F(3,77) = 3.74$, $p = .01$, $R^2 = .13$).

Mothers who had higher theory of mind scores used more cognitive terms of certainty in the word level ($\beta = .27$, $SE = .21$, $t(77) = 2.50$, $p = .014$). Moreover, children of mothers who used more cognitive terms of certainty in the word level demonstrated better performance on behavioral theory of mind tasks ($\beta = .24$, $SE = .02$, $t(77) = 2.14$, $p = .035$). However, mothers' theory of mind did not significantly predict children's theory of mind score on behavioral tasks ($\beta = .09$, $SE = .03$, $t(77) = .84$, $p = .40$). It was found that mothers' amount of cognitive terms of certainty in the word level significantly mediated the relationship between mothers' theory of mind and children's behavioral theory of mind (*standardized indirect effect coefficient* = .06, $SE = .04$, 95% *BCA-CI* = .001-.162).

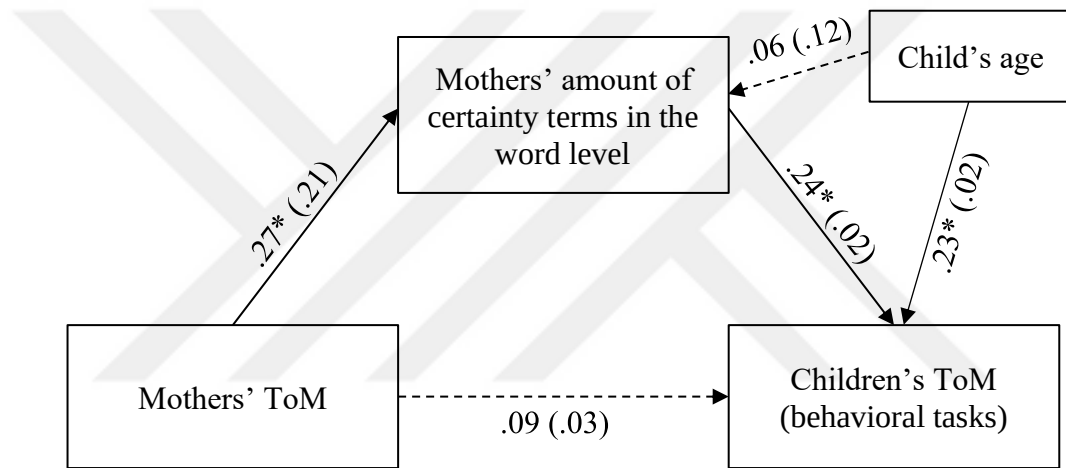


Figure 3.2 Model 1: The Mediation of Mothers' Amount of Certainty Terms in the Word Level in the Relationship between Mothers' ToM and Children's ToM Measured by Behavioral Tasks

The indirect relationships between mothers' socio-cognitive abilities and children's ToM skills, mediated by the subcategories of mothers' mental state talk, were tested and the results are presented in Table 3.5. None of these models demonstrated a significant indirect relationship.

Table 3.5 Results of the Tested Mediation Models

Model	β	SE	p	R^2	F	p
Model 2: Mothers' ToM→Cognitive terms of certainty-word level→Children's ToM (maternal report)				0.06	2.62	.08
Intercept	2.62	0.42	<.001			
Mothers' ToM	0.01	0.02	0.40			
Cognitive terms of certainty-word level	0.01	0.01	0.07			
Model 3: PRF-IC→Total cognitive terms→Children's ToM (behavioral tasks)				0.08	3.22	.04
Intercept	1.97	1.02	0.05			
PRF-IC	0.02	0.02	0.42			
Total cognitive terms	0.01	0.00	0.03			
Model 4: PRF-IC→Cognitive terms of contrastives→Children's ToM (maternal report)				0.05	2.00	.14
Intercept	2.28	0.49	<.001			
PRF-IC	0.02	0.01	0.14			
Cognitive terms of contrastives	0.01	0.01	0.37			
Model 5: PRF-IC→Affective terms→Children's ToM (maternal report)				0.05	1.89	.16
Intercept	2.26	0.48	<.001			
PRF-IC	0.02	0.01	0.14			
Affective terms	0.01	0.01	0.44			
Model 6: PRF-PM→Cognitive terms of contrastives→Children's ToM (maternal report)				0.08	3.30	.04
Intercept	3.29	0.14	<.001			
PRF-PM	-0.02	0.01	0.03			
Cognitive terms of contrastives	0.01	0.01	0.36			

4. DISCUSSION

The current study was the first to investigate the mediating role of mothers' mental state talk in the relationship between mothers' sociocognitive abilities and children's ToM within a comprehensive model. Results demonstrated that specifically mothers' mental state talk about certainty mediated the relationship between mothers' ToM and children's ToM assessed by behavioral tasks. This suggests that mothers with a better understanding of mental states direct more mental state talk about certainty to their children, enabling their children to better understand their own and others' minds. It can be inferred that mothers' mental state understanding is uniquely important for their use of cognitive terms, especially certainty terms. In addition, children hearing more certainty terms from their mothers may uniquely contribute to their understanding that a person's mental states may not always represent reality. However, given the moderate strength of these relationships, further research is required to confirm these findings.

4.1. Is Mothers' Mental State Talk the Mediating Factor Between Mothers' Sociocognitive Skills and Children's Theory of Mind?

Previous studies have been limited to examining the relationship between parents' ToM and children's ToM. Sabbagh and Seamans (2008) interpreted their significant results as indicating the genetic transmission of mental state understanding. They also suggested that the association could be through another factor, namely parents' mental state talk. Additionally, Devine and Hughes (2019) found that parents who were more skilled in understanding mental states from the eyes of people had children who demonstrated better performance on false belief tasks. In line with Sabbagh and Seamans (2008) and Devine and Hughes (2019), we found a positive relationship between mothers' and children's ToM. However, we further explored this relationship by investigating the mediating role of mothers' mental state talk. The findings confirmed our hypothesis with the significant mediation of mothers' mental state talk about certainty. We did not find a significant mediation of mothers' mental state talk in total. Nonetheless, there can be a unique contribution from different types of mental state terms. For example, several studies found that the relationship between parents' cognitive terms or modulations of assertion

and children's ToM was stronger than the relationship between parents' desire or emotion terms and children's ToM (Adrian et al., 2005; Ensor & Hughes, 2008; Ruffman et al., 2002; Slaughter et al., 2007). Therefore, it seems important to focus on mental state talk not only as a total structure but also as a structure that encompasses several categories. Cognitive terms of certainty emphasize the subjectivity of mental states (Ruffman et al., 2002). A person who is better at understanding the subjective nature of mental states (i.e., who has a better ToM) might not encounter challenges in perceiving the certainty of a given situation. Furthermore, as we assessed mothers' mental state talk through their narration of a wordless picture book, mothers with a more advanced ToM may have consistently acknowledged that they could not be certain about the reasons behind the story characters' actions. Consequently, they might have employed a higher frequency of certainty terms to emphasize the potential discrepancy between their own interpretations and the actual motivations driving the actions of the story characters. Therefore, children could concretize the difference between their own and others' mental states from certainty terms, which are associated with belief understanding (Brown et al., 1996; Moore et al., 1990). Taking this into account, it should be noted that children in the current study showed more variability in belief tasks (i.e., diverse beliefs and content false belief tasks). Hence, a more unique contribution from mental state terms related to belief understanding can be expected.

The comprehensive analysis using structural equation modeling, which aimed to explore the mediation of mothers' mental state talk in the relationship between mothers' sociocognitive abilities and children's ToM, did not demonstrate a good fit to the data. This issue could potentially be derived from the lack of significant loading of the two observed variables (mothers' certainty about mental states for parental reflective functioning and maternal report for children's ToM) on the latent variables, thus not fully meeting the structural requirements for the latent variables (Hancock, 1997). In addition, in order to construct a latent variable, the observed variables should have significant covariance between each of them (Hancock, 1997). However, in our data we could not find a significant relationship between the observed variables of mothers' interest and curiosity in their children's mental states and mothers' certainty about mental states which were intended to load on the same latent variable (parental reflective functioning).

4.2. Is There a Relationship Between Mothers' Sociocognitive Abilities and Mental State Talk?

The current study was also the first to examine the relationship between mothers' sociocognitive abilities and their mental state talk. The findings revealed that mothers who are more interested in and curious about their children's mental states used more mental state terms in total and within-narrative while talking with their children. However, mothers who had more difficulty in understanding their children's mental states (i.e., prementalization) used less within-narrative mental state talk while talking with their children. Additionally, mothers who were more certain about their children's mental states directed more mental state talk referring to the story characters. Besides, Mothers' ToM was not found to be significantly correlated with any of the three categories: total, within-narrative, and outside-narrative mental state talk. Our research demonstrates that mothers' mentalizing ability as a relational construct (i.e., parental reflective functioning) seems to be more important for their mental state talk when all the subcategories are taken together.

Parental reflective functioning is not only about parents recognizing and differentiating their own mental states and those of their child but also reflecting on and responding to these mental states within an interactional context (Ensik & Mayes, 2010; Sharp & Fonagy, 2008; Slade, 2005; Luyten et al., 2017a). Therefore, parental reflective functioning is essentially about parents' capacity to reflect on mental states during interactions with their children. Parental reflective functioning enables children to explore their own mental states through parents' representations of their children's mental states in different contexts, such as gestures, plays, caregiving, conversations, etc. (Slade, 2005). In line with Slade's (2005) statement, the findings of our study suggest that mothers with a higher level of interest and curiosity in their children's mental states direct more mental state talk to their children overall and when referencing to the story characters (i.e., within-narrative). As Slade (2005) stated, mothers who were more interested in and curious about their children's mental states (i.e., those with higher reflective functioning) used representations of mental states as words in mother-child interactions to help their children to understand mental states in general and those of the story characters. Mothers' interest in and curiosity about their children's mental states share similarities with

maternal sensitivity, which is defined as mothers accurately perceiving and responding to their children's verbal or non-verbal cues of needs. Both terms refer to mothers' engagement with their children's mental states. Therefore, our findings support the previous study by Reynolds et al. (2020), in which sensitive parents used more mental state talk while interacting with their children. Contrary to parents' interest and curiosity in their children's mental states, mothers' prementalization which is inability to recognize and accurately respond to their children's mental states, was expected to be negatively related to mothers' mental state talk. The findings confirmed our expectation since mothers' who had difficulty to recognize and attribute coherent mental states to their children used less mental state terms, only within-narrative (i.e., referencing the story characters). Since prementalization includes parents' attribution of distorted mental states to their children, our results support the previous finding of Lundy and Fyfe (2015) which showed parents' number of mind-related comments was related with their attributing appropriate mental states to their children. The reason behind the unique relationship with only the mental state terms referencing the story characters may stem from parents' difficulty in understanding the motivations behind the story characters in a wordless picture book. In such a book they cannot gain any external cue for the mental states of the story characters other than the actions depicted in the pictures. With respect to mothers' certainty about their children's mental states, the reason for more certain mothers using more within-narrative mental state talk could be attributed to their belief that they need to explain the mental states of the story characters clearly for their children. This might stem from their being certain that without their guidance, their children might struggle to comprehend the mental states depicted in a wordless picture book.

As for Mothers' ToM, we expected a positive relationship between mothers' ToM and their mental state talk. Contrary to our expectations there was no significant correlation between mothers' ToM and their mental state talk in terms of total, within-narrative, and outside narrative talk. Our results align with the findings of Devine and Hughes (2019) as they also did not report a significant association between parents' ToM and mental state talk. As they stated, the reason behind such a non-significant result may stem from the competence-performance gap suggested by Meins et al. (2006). Following the non-significant findings (i.e., for the relationship between children's ToM and MST) of the

previous studies (Charman & Shmueli-Goetz, 1998; Tager-Flusberg & Sullivan, 1995), Meins et al. (2006) argue that there can be competence-performance gap which refers to the idea that being able to understand mental states does not mean one can utilize this ability to describe and emphasize the mental states behind the actions. They provided examples from their study where there were differences in mental state attributions of the mothers (i.e., performance) to their children by assuming that healthy adults have a good mental state understanding (i.e., competence). However, in line with the previous studies (Sabbagh & Seamans, 2008) our findings revealed that there are differences in the level of mental state understanding in healthy adults. In addition, the sample sizes of the studies by Charman and Shmueli-Goetz (1998) and Tager-Flusberg and Sullivan (1995) were smaller. Furthermore, since these studies focused on children, it is reasonable to expect that children may have understood mental states but not competently have emphasized them during conversations due to their vocabulary limitations. On the other hand, in a more recent study by Kim et al. 2021 with 132 school-aged children ($M_{age} = 10.39$), children who had better ToM skills used more mental state terms. We expected our results to align with Kim et al. (2021), but our hypothesis was not confirmed. The fact that mothers' ToM was associated with different subcategories of mental state talk at varying levels might have suppressed the significance of each category when we have considered them as a single total score. Thus, this may have led to a non-significant result. Therefore, it is important to focus on different categories of mental state terms in relation to mothers' sociocognitive skills.

4.3. How Are Sociocognitive Abilities of Mothers Related to Subcategories of Mental State Talk?

We further conducted an exploratory analysis to examine the specific relationships between mothers' sociocognitive abilities and their mental state talk in different categories. We found that mothers' who were interested in and curious about their children's mental states used more perception terms, physiological terms, desire terms, affective terms, and cognitive terms in the word level while interacting with their children. Given that parental reflective functioning represents mentalizing within a relational context, parents interested in mental states might have used more perception, desire, and

affective terms since using these terms might enhance their sensitivity and aid them in interpreting the dynamics of parent-child interactions more effectively. With regard to cognitive terms, parents aiming to understand their children's thoughts and clarify others' mental states for their children might have employed more cognitive language, as cognitions lack real-life representations (e.g., facial expressions) compared to desires and emotions (Bartsch & Wellman, 1995). Considering the precursor role of parental reflective functioning on secure parent-child attachment (Cooper & Redfern, 2016; Ensink & Mayes, 2010; Slade, 2005), we can say that our study is in line with the study by McElwain et al. (2011) in which mothers whose children had secure attachment referred more to cognitive terms in an interaction with their children. When mothers' prementalization is taken into consideration, it was only related to cognitive terms of contrastives. Meaning that, mothers who had difficulty to understand their children's mental states and who attribute inappropriate mental states to their children use fewer cognitive terms of contrastives in an interaction with their children. Since we can see prementalization as the low parental reflective functioning (Luyten et al., 2017a), the contrary results of parents' interest and curiosity in their children's mental states could be expected. The reason behind only cognitive terms of contrastives significantly correlated with prementalization possibly because of the nature of prementalization which involves attributing distorted or inappropriate mental states to their children. Mothers with high prementalization scores may struggle to recognize that mental states can differ and that someone else might be in a different mental state than what they perceive. Therefore, they may use fewer cognitive terms of contrastives. In addition, since parents who have insecure attachment history experience difficulty to recognize the mental states of their children (Luyten et al., 2017a), our results are parallel with the findings of McElwain et al. (2011). Lastly, mothers who had better scores on the Reading the Mind in the Eyes Test (i.e., who understood mental states better) used more cognitive terms of certainty during mother-child book reading. As stated previously, mothers with a more advanced ToM might better comprehend the subjectivity of mental states. Consequently, they could employ cognitive terms of certainty when describing others' mental states, acknowledging the potential discrepancies between their assumptions and the actual experiences of others. The results demonstrated that parental reflective functioning (i.e., parents' interest and curiosity in their children's mental states) appears to be more significant factor

behind their use of different categories of mental state terms. Based on this finding we suggest that since parents who show interest and curiosity in their children's mental states are more attuned to their children's mental states and needs (Rutherford et al., 2016; Suchman et al., 2010), they use a more diverse range of mental state terms. They do this by understanding which aspects to emphasize during a conversation with their children in order to support their children's mental state understanding. Mothers' having interest and curiosity in their children's mental states or having advanced mental state understanding may lead them to talk more elaborately and causally about mental states (i.e., explaining the reasons behind mental states). Differences may exist in mothers' elaborative and causal mental state talk based on their sociocognitive abilities. The particular mental state category that mothers choose to elaborate upon could stem from their own understanding of mental states and how they perceive and aim to foster their children's mental states. Therefore, it is important to focus on mothers' elaborative mental state talk (including several categories) related to their sociocognitive abilities in future research.

4.4. Does Mothers' Mental State Talk Shape Children's Theory of Mind?

Our study is rooted in the hypothesis that children who are exposed to more mental state talk from their mothers would demonstrate superior ToM skills. Our results partially confirmed the previous literature focusing on parents' mental state talk directed to their children and the children's ToM. Although we did not observe a significant association between mothers' total mental state talk and children's ToM, there was a significant positive relationship between the percentage of mothers' total mental state talk within their total speech and children's ToM assessed by behavioral tasks. This finding suggests that children of mothers who use a higher proportion of mental state language in their conversations develop better mental state understanding skills, which aligns with the previous studies (e.g., Adrian et al., 2005, 2007; Devine & Hughes, 2019; Ensor & Hughes, 2008; Ruffman et al., 2002; 2006). The non-significant association between mothers' total mental state talk and children's ToM could potentially be explained by two factors: the influence of the children's interest in the story on the duration of the mothers' narration and the neutralization of different levels of significance between within-

narrative and outside-narrative mental state talk when they are summed. The two factors seem to be reasonable. When mothers perceive signs of boredom in their children, they may accelerate their narration to complete the story before children lose their attention to the story. Therefore, although they do not use a higher number of mental state terms in total, their conversation may mostly consist of mental state talk which results in a higher proportion of mental state talk within the total speech. Besides, considering that there was significant association between mothers' outside-narrative mental state talk and children's ToM, but not with within-narrative mental state talk, the summation of these two constructs could possibly neutralize their respective significance levels. Consistent with the ideas of Thompson (2006) and Slaughter and Peterson (2012), the findings of our study highlight the importance of a conversational environment where children find the opportunity to observe various mental states. This exposure is a significant factor for children's internalizing and understanding of their own and others' mental states by giving the opportunity to concretize mental states through language. Our research aligns with previous studies, which have demonstrated the importance of conversation, particularly in samples of deaf children (Woolfe et al., 2002). Notably, parents' mental state talk expressed through sign language may be significantly related to their deaf children's ToM development. Hence, we strongly recommend that future research should focus on this specific demographic, exploring the association between sign language-based mental state talk and the ToM development in deaf children since there is only one study focusing on this target group (Pluta et al., 2023).

4.5. Are There Differences in Children's ToM based on the Referent of Mothers' Mental State Talk?

We also examined the association between the referent (i.e., mother/child or story characters) of the mothers' mental state terms and children's ToM. The results demonstrated that children of mothers who referred to their own or their children's mental states - not the story characters' - in their mental state talk acquired better ToM skills. Therefore, it could be suggested that children may first need to concretize their own mental states to better understand those of others. The results were consistent with the previous studies. Bozbiyik (2016) revealed that mothers who referred more to the mental

states of themselves, their children, and others had children who showed better performance on ToM tasks. Taumoepeau and Ruffman (2006) found that mothers who referred more to the children's desires had children who were skilled at emotion understanding. Moreover, in alignment with our results, Taumoepeau and Ruffman (2006) did not find any relationship between mothers' references to the desires of others and children's later emotion understanding. In addition, since there are cross cultural differences in the referent of mothers' mental state terms (Taumoepeau, 2015; Taumoepeau et al., 2019), cultural disposition can be an important factor behind the relationship between the referent of the mental state terms and children's ToM. For instance, in collectivist cultures mothers mention others' mental states more frequently, while in individualist cultures, mothers refer more to their children's mental states (Taumoepeau et al., 2019). Since Turkish culture share similarities with the collectivist cultures where interdependency is highly valued (Göregenli 1995, 1997), mothers may use more mental state language referring to others' mental states ($M(SD) = 41.9(18.1)$) than referring to their own or their children's mental states ($M(SD) = 31.7(31.3)$) to enhance their children's understanding of others and to foster their interdependence. Therefore, when exposed to mental state terms that refer to their own mental states -a pattern they may not be accustomed to- children may find a unique opportunity to differentiate and understand their own and others' mental states. It would be worthwhile to explore the cultural disposition of mothers within Turkish culture and the characteristics of their mental state talk directed to their children.

4.6. How Are Mothers' Mental State Talk Subcategories Associated with Children's ToM?

In our study, we explored whether various categories of mental state talk have a distinct relationship with children's ToM. Based on the results we can conclude that among various types of mental state terms, mothers' cognitive terms stood out as the most significant factor.

Existing research has shown that cognitive terms have a stronger correlation with children's ToM compared to affective or desire terms (Adrian et al., 2005; Ensor &

Hughes, 2008; Ruffman et al., 2002; Slaughter et al., 2007). Taumoepeau and Ruffman (2008) revealed that mothers' mental state talk about desires decreased while their mental state talk about cognitions (i.e., think and know) increased from when children 15 months old to when children 33 months old. Based on the zone of proximal development theory by Vygotsky (1978), Taumoepeau and Ruffman (2008) suggested that when children are younger it is effective to mention more about the mental states that have representations in real life such as desires which can be represented by facial expressions. However, when they get older, parents aim to talk more about cognition terms to assist their children to understand the mental states, which cannot be concretely observed, behind actions (Taumoepeau & Ruffman, 2008). Our results confirmed their suggestion by the more significant contribution of mothers' cognitive terms to children's ToM assessed by both behavioral tasks and maternal report. As previously noted, cognitive terms are more abstract for children to understand as they lack real life representation (Bartsch & Wellman, 1995). Consequently, mothers' cognitive terms in different categories may make more unique contributions to children's ToM, particularly the belief aspect which showed greater variability in our sample, compared to other types of mental state terms. To further understand the unique contributions of each type of mental state terms, future experimental research could be beneficial. In this research, different groups could be presented with different wordless story books. Each story would primarily focus on a specific type of mental state term. This approach would allow a more detailed study of the influence of each mental state category to children's mental state understanding.

4.7. The Role of Mothers' Sociocognitive Abilities in Children's ToM Development

We also aimed to investigate whether there was a correlation between mothers' sociocognitive abilities and children's ToM. We expected a negative relationship between mothers' prementalization and children's ToM and positive association of children's ToM with both mothers' interest and curiosity in their children's mental states and mothers' ToM. The results demonstrated mothers who had difficulty in understanding and getting into their children's mental states reported their children as having worse ToM skills. On the other hand, mothers who showed greater interest and curiosity in their children's mental states reported that their children have better ToM skills. Furthermore, mothers'

who have higher scores on ToM test had children who performed better on behavioral ToM tasks.

Previous studies focusing on parental reflective functioning and children's ToM showed negative correlation between parents' prementalization and children's ToM (Cowes & Santelices, 2020; Nijssens et al., 2021). However, in our study, we found no significant relationship between any dimension of parental reflective functioning and children's ToM as measured by behavioral tasks. This finding could be due to the nature of parental reflective functioning, which is largely about mentalizing in a relational context. Therefore, parental reflective functioning may not directly be related to children's ToM, but rather indirectly, through parent-child interactions. In our study, we also did not find any indirect relationship between parental reflective functioning and children's ToM via the mediation of mothers' mental state talk. However, parental reflective functioning may foster children's ToM through parental sensitivity which involves parents' perceiving accurately and responding appropriately to their children's needs. Further studies are crucial to uncover this potential relationship.

We predicted that mothers' ToM would be significantly related to children's ToM. The results confirmed our hypothesis in line with the previous studies (Devine & Hughes, 2019; Sabbagh & Seamans, 2008). This finding confirmed the suggestion of Sabbagh and Seamans (2008) highlighting the intergenerational transmission of ToM. As we mentioned earlier, we also investigated the mediating role of mothers' mental state talk as a specific parenting practice. Future research should extend this investigation by examining the mediating role of other parental practices, such as parent-child joint attention, in order to further understand the underlying mechanisms of intergenerational transmission and indirect relationships.

4.8. Comparing Measures of Children's ToM: Behavioral Tasks vs. Maternal Reports

We assessed children's ToM not only with behavioral tasks but also with maternal report. In line with previous studies (Ekerim-Akbulut et al., 2023; Gluck et al., 2020; Tahiroğlu et al., 2014), children who showed better performance on ToM tasks were also reported

by their mothers to have better ToM skills. Previous research heavily relied on behavioral assessments of children's ToM. Although it is important to assess children's developmental abilities through laboratory observations in controlled environments, the generalizability of children's ToM to real life conditions is restricted when assessment is limited to one-time or single-type evaluations (Tahiroğlu et al., 2014). Tahiroğlu and colleagues (2014) proposed that parents who find the opportunity to observe their children's day-to-day behaviors, can provide valuable reports, thereby enhancing the ecological validity of ToM assessments.

Our study was the first to integrate the maternal report of children's ToM as an additional measurement to investigate the relationship between mothers' sociocognitive abilities and children's ToM. The only significant relationship was between mothers' prementalization and their report of children's ToM. This suggests that mothers who struggle to perceive their children's mental states or differentiate between their own and their children's mental states tend to perceive their children as less capable of understanding mental states. Besides, based on the non-significant relationship between mothers' interest and curiosity in their children's mental states and children's ToM, it could be inferred that mothers' who were interested in and curious about their children's mental states may have potentially provided a more accurate report of their children's ToM. This is likely due to their frequent observation of their children in an effort to understand their mental states. Further analysis is needed to compare the relation between mothers' sociocognitive abilities and the overlap between children's ToM as measured by behavioral tasks and maternal report.

Differences existed in the associations between both the total and the subcategories of mothers' mental state talk and children's ToM, depending on the type of assessment used (i.e., maternal report or behavioral tasks). In terms of mothers' total mental state talk, the only significant relationship was between the percentage of mothers' total mental state talk within total maternal speech and children's ToM as assessed by behavioral tasks. It is worth to note that self-report measures carry the risk of social desirability bias (Nederhof, 1985). Consequently, mothers might have reported their children's ToM skills in a way that is slightly different from reality, potentially overestimating them. This could be one potential reason for the non-significant association of the percentage of mothers'

total mental state talk within total maternal speech and children's ToM as assessed by maternal report, while it was significantly positively correlated with children's ToM as measured by behavioral tasks.

As for the relationship between assessment type of children's ToM and subcategories of mothers' mental state talk, the results were in alignment with the previous studies (Adrian et al., 2005; Ensor & Hughes, 2008; Ruffman et al., 2002; Slaughter et al., 2007). The most unique relationship was found between cognitive terms and children's ToM assessed by both behavioral tasks and maternal report. On the other hand, mothers who frequently used affective terms with their children reported their children as having superior ToM skills. This could stem from the possibility that mothers who were sensitive to their own, their children's, and others' emotions may have observed their children more detailedly and interpreted even subtle cues as indications of their children's understanding of mental states.

4.9. The Relationship between Demographic Characteristics and Study Variables

The findings of our research supported the idea that child age was an important factor for ToM development (Wellman et al., 2001). There is no correlation between child age and the other study variables. However, the number of younger or older siblings appears to be related to parental reflective functioning, maternal speech, and mental state talk. According to the findings, as the number of older siblings increased, mothers' interest and curiosity about their children's mental states, as well as their mental state talk referring to the story characters, decreased. Conversely, an increase in the number of younger siblings was associated with a decrease in mothers' difficulty understanding their children's mental states and increase in their mental state talk about the story characters. One explanation could be that older children take on some of the mothers' responsibilities, such as engaging with the younger siblings (Wikle et al., 2018). This could potentially enable mothers to use less effort in understanding and discussing mental states, as the older siblings may be taking on this role. On the other hand, in the absence of older siblings, mothers are more likely to shoulder the responsibility of engaging with their children. This situation could facilitate a greater amount of conversation between mothers and their younger children. Besides, having older children may indicate having several

children to take care of. Therefore, mothers may have prioritized meeting material needs over understanding and emphasizing mental states. This interpretation might also explain the relationship between the number of adults at home and mothers' worse parental reflective functioning (i.e., higher prementalization and lower interest and curiosity in mental states), and less mental state talk. In the Turkish context, women are often seen as the primary caregivers and are typically responsible for housework (e.g., cooking, childcare, laundry, house cleaning, etc.) (TurkStat, 2022). As a result, mothers living with a larger number of adults may face increased domestic responsibilities, leaving them less time to observe, understand, and converse about their children's mental states. Future research exploring the links between mothers' household responsibilities, their reflective functioning, and mental state talk, while controlling for home-related variables, would be a valuable contribution to this field of study.

Supporting the findings of previous studies (Sullivan, 2020; Thompson et al., 2016), in our study, mothers from higher socioeconomic status directed more mental state talk to their children, referring to their own mental states, their children's mental states, and those of story characters. This was a similar pattern with maternal speech, which was found to be negatively associated with mothers' socioeconomic backgrounds, consistent with existing research (e.g., Hoff, 2003; Hoff-Ginsberg, 1998). Sullivan (2020) specifically found that parents from higher socioeconomic backgrounds referred more frequently to cognitions than those from lower socioeconomic backgrounds. In our study, since cognitive terms were more significantly correlated with children's ToM than the other type of mental state terms, we can infer that the reason behind the poorer performance of children on false belief tasks from lower socioeconomic backgrounds (Devine & Hughes, 2018) might be due to the parents' less frequent engagement in mental state talk directed to their children. Future research should shed light on the indirect relationship between socioeconomic status and children's false belief understanding through the mediation of parents' mental state talk.

4.10. Strengths and Limitations

The present study is the first to examine the mediating role of mothers' mental state talk in the relationship between mothers' sociocognitive abilities and children's ToM. In addition, the study is first to investigate the relationship between mothers' sociocognitive abilities and their mental state talk directed to their children. There are several strengths of the current study. Firstly, we included several variables which could be related to children's ToM to a comprehensive model to detect the relationships in a broader way. Secondly, we assessed mothers' mental state talk through story narration in the home environment. We asked mothers to narrate the story to their children as they do in their daily setting. Therefore, the study setting was very similar to naturalistic observation which enabled us to observe their behavior nearly as in daily life. Additionally, we used a very comprehensive and detailed coding scheme which was developed to analyze the unique structure of Turkish language in terms of mental states. Hence, we found the opportunity to detect not only the mental states in the word level but also the mental states in the conjugation level such as desire terms (e.g., "Çocuk 'hadi kurbağayı *arayalım!*' demiş"), cognitive terms of certainty (e.g., "Kurbağa ailesini özlemiş *olmalı.*") which are unique to the Turkish language. Besides, the reliability of the study was enhanced by having two coders independently evaluate mothers' mental state talk. Moreover, we assessed children's ToM not only through behavioral tasks but also through maternal reports, providing the opportunity to understand children's ToM in real-life settings. Although the online nature of the study can be seen as a limitation, it enabled us to reach out to participants from several cities in Turkey.

The study also has some limitations. First one is online data collection. During the assessments, some connection errors occurred due to the network quality of the participants. Before the sessions, we instructed mothers on how to proceed with the observations and tasks. We also advised them to be in an isolated room without distractions and interruptions. However, during a few sessions, other children at home entered the room. Moreover, although the sample size was not extremely small, a larger sample size would be beneficial for structural equation modeling analysis. In addition, we could not reach participants from lower socioeconomic backgrounds. The reason could be that we announced the study through the social media channels which were followed

by the parents from higher socioeconomic backgrounds. Including participants from diverse socioeconomic backgrounds would allow for more comprehensive inferences regarding life conditions as potential reasons behind the findings. Lastly, we did not measure mothers' causal mental state talk, which could be related to their sociocognitive abilities and children's ToM. Future studies should consider including mothers' causal mental state talk and elaborative narration as additional variables.



5. CONCLUSION

The current study underscores the crucial role mothers' mental state talk plays in the relationship between mothers' and children's ToM. In addition, the study demonstrates that mothers' sociocognitive abilities play a role in their mental state talk directed to their children. Our findings provide the foundation for various practical implications. Hearing more certainty terms from their parents may give children the opportunity to understand the difference that may occur between what is actually happening and what a person thinks or guesses. Therefore, certainty may make a unique contribution for children's ToM. Children's exposure to more certainty terms during interactions with their parents could enhance their social competence, particularly in relationships where successful communication depends on understanding their own and others' mental states. Future studies could experimentally examine the elements of certainty talk that foster children's ToM. These could include aspects such as parental causal language and elaborative language. Moreover, the insights from our study could inform the creation of educational materials for children. For example, the publication of wordless picture books, each focusing on specific mental states, could be an effective educational strategy. In addition, board games in which the players should personate one of the characters by guessing its mental states may give the children the opportunity to practice different mental states which may enable them to understand and differentiate the mental states of their own and others. Parent-child interactions in which they create several games focusing on guessing the characters based on their mental states may contribute to children's mental state understanding.

While our research primarily addressed the frequency of mental state terms used by mothers, future studies could broaden this scope by considering the potential mediating role of parents' elaborative and causal mental state discussions in the association between mothers' sociocognitive abilities and children's ToM. This is particularly significant as some differences can be observed in the relationships when focusing on the causal/elaborate mental state talk compared to the frequency of mental state talk (e.g., Peterson & Slaughter, 2003). In addition, we only focused on how mothers talk about mental states. But, if we design a study where both parents and children can have

conversations about mental states, we might better understand how children's traits (like their own understanding and talk about mental states, their vocabulary, etc.) encourage parents to talk about mental states and what type of mental states they talk about. We recommend that future studies consider this type of study design.



REFERENCES

- Aber, J. L., Slade, A., Berger, B., Bresgi, I., & Kaplan, M. (1985). *The Parent Development Interview*. Unpublished manuscript.
- Adrian, J. E., Clemente, R. A., Villanueva, L., & Rieffe, C. (2005). Parent-child picture-book reading, mothers' mental state language and children's theory of mind. *Journal of Child Language*, 32(3), 673. <https://doi.org/10.1017/S0305000905006963>
- Adrián, J. E., Clemente, R. A., & Villanueva, L. (2007). Mothers' use of cognitive state verbs in picture-book reading and the development of children's understanding of mind: A longitudinal study. *Child Development*, 78(4), 1052-1067. <https://doi.org/10.1111/j.1467-8624.2007.01052.x>
- Arıkan, G., Acar, İ., Üstündağ-Budak, M. (2020, Aug. 22). Türkiye'deki annelerde içsel düşünme işlevselliği kısa formunun geçerliliği. Birinci Uluslararası Bebek, Çocuk ve Ergen Psikolojisi Kongresi, İstanbul Rumeli Üniversitesi, İstanbul, Türkiye.
- Astington, J. W. (2003). Sometimes necessary, never sufficient: False belief-understanding and social competence. In B. Repacholi & V. Slaughter (Eds.), *Individual differences in theory of mind* (pp. 13–38). Psychology Press.
- Astington, J. W., & Pelletier, J. (2005). Theory of mind, language, and learning in the early years: Developmental origins of school readiness. In B. D. Homer & C. S. Tamis-LeMonda (Eds.), *The development of social cognition and communication* (pp. 205–230). Psychology Press.
- Baptista, J., Osório, A., Martins, E. C., Castiajo, P., Barreto, A. L., Mateus, V., ... & Martins, C. (2016). Maternal and paternal mental-state talk and executive function in preschool children. *Social Development*, 26(1), 129-145. <https://doi.org/10.1111/sode.12183>
- Baron-Cohen, S., Wheelwright, S., Hill, J., Raste, Y., & Plumb, I. (2001). The “Reading the Mind in the Eyes” test revised version: A study with normal adults, and adults with Asperger syndrome or high-functioning autism. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, 42(2), 241-251. <https://doi.org/10.1017/S0021963001006643>[Opens in a new window]
- Bartsch, K., & Wellman, H. M. (1995). *Children talk about the mind*. Oxford University Press.
- Bekar, O., Steele, M., Shahmoon-Shanok, R., & Steele, H. (2018). Mothers' mental state

- talk and preschool children's social-behavioral functioning: A multidimensional account. *Journal of Infant, Child, and Adolescent Psychotherapy*, 17(2), 119-133. <https://doi.org/10.1080/15289168.2018.1456890>
- Berument, S. & Güven, A. G. (2013). Turkish Expressive and Receptive Language Test: I. Standardization, reliability and validity study of the Receptive Vocabulary Sub-Scale. *Turkish Journal of Psychiatry*, 24(3), 192.
- Berzofsky, M., Smiley-McDonald, H., Moore, A., & Krebs, C. (2014). Measuring socioeconomic status (SES) in the NCVS: Background, options, and recommendations. *Bureau of Justice Statistics US Department of Justice*, 1-59.
- Borelli, J. L., Lai, J., Smiley, P. A., Kerr, M. L., Buttitta, K., Hecht, H. K., & Rasmussen, H. F. (2020). Higher maternal reflective functioning is associated with toddlers' adaptive emotion regulation. *Infant Mental Health Journal*, 42(4), 473-487. <https://doi.org/10.1002/imhj.21904>
- Bozbiyık, B. (2016). *The effect of maternal mental state talk on preschool children's theory of mind abilities* [Unpublished master's thesis]. Bilkent University.
- Brown, J. R., Donelan-McCall, N., & Dunn, J. (1996). Why talk about mental states? The significance of children's conversations with friends, siblings, and mothers. *Child Development*, 67(3), 836-849. <https://doi.org/10.1111/j.1467-8624.1996.tb01767.x>
- Caputi, M., Lecce, S., Pagnin, A., & Banerjee, R. (2012). Longitudinal effects of theory of mind on later peer relations: The role of prosocial behavior. *Developmental Psychology*, 48(1), 257-270. <https://doi.org/10.1037/a0025402>
- Charman, T., & Shmueli-Goetz, Y. (1998). The relationship between theory of mind, language and narrative discourse: An experimental study. *Cahiers de Psychologie Cognitive/Current Psychology of Cognition*, 17(2), 245-271.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Lawrence Earlbaum Associates.
- Cole, K., & Mitchell, P. (1998). Family background in relation to deceptive ability and understanding of the mind. *Social Development*, 7(2), 181-197. <https://doi.org/10.1111/1467-9507.00061>
- Cooper, A., & Redfern, S. (2016). *Reflective parenting: A guide to understanding what's going on in your child's mind*. Routledge.
- Cowes, E. A., & Santelices, M. P. (2020). Preschool theory of mind: it's relation with mother's parental stress and reflective function. *Early Child Development and Care*, 1-10. <https://doi.org/10.1080/03004430.2020.1763977>

- Devine, R. T., & Hughes, C. (2018). Family correlates of false belief understanding in early childhood: A meta-analysis. *Child Development*, 89(3), 971-987. <https://doi.org/10.1111/cdev.12682>
- Devine, R. T., & Hughes, C. (2019). Let's talk: Parents' mental talk (not mind-mindedness or mindreading capacity) predicts children's false belief understanding. *Child Development*, 90(4), 1236-1253. <https://doi.org/10.1111/cdev.12990>
- Dunn, J., Brown, J., Slomkowski, C., Tesla, C., & Youngblade, L. (1991). Young children's understanding of other people's feelings and beliefs: Individual differences and their antecedents. *Child Development*, 62(6), 1352-1366. <https://doi.org/10.1111/j.1467-8624.1991.tb01610.x>
- Ekerim-Akbulut, M., Etel, E., Tahiroğlu, D., & Selçuk, A. B. (2023). Children's social understanding scale-short form: Adaptation to Turkish sample. *Early Education and Development*, 34(1), 329-347. <https://doi.org/10.1080/10409289.2021.2013668>
- Ensink, K., & Mayes, L. C. (2010). The development of mentalisation in children from a theory of mind perspective. *Psychoanalytic Inquiry*, 30(4), 301-337. <https://doi.org/10.1080/07351690903206504>
- Ensink, K., Borelli, J. L., Roy, J., Normandin, L., Slade, A., & Fonagy, P. (2018). Costs of not getting to know you: Lower levels of parental reflective functioning confer risk for maternal insensitivity and insecure infant attachment. *Infancy*, 24(2), 210-227. <https://doi.org/10.1111/infa.12263>
- Ensor, R., & Hughes, C. (2008). Content or connectedness? Mother-child talk and early social understanding. *Child Development*, 79, 201-216. <https://doi.org/10.1111/j.1467-8624.2007.01120.x>
- Etel, E., & Yagmurlu, B. (2015). Social competence, theory of mind, and executive function in institution-reared Turkish children. *International Journal of Behavioral Development*, 39(6), 519-529. <https://doi.org/10.1177/0165025414556095>
- Evsen, S. (2022). *Detailed investigation of the relation between mothers' mental state language and children's theory of mind abilities*. [Unpublished master's thesis]. Bilkent University.
- Farkas, Ch., Carvacho, C., Santelices, P., Mahias, P., Badilla, G., Valloton, C., & Himmel, E. (2012). *Medición de la mentalización del adulto significativo en interacción con niños de 0 a 48 meses: Desarrollo y estudio piloto. Proyecto Fondecyt N°1110087*. Santiago de Chile: Pontificia Universidad Católica de Chile.
- Fonagy, P., Steele, M., Steele, H., Moran, G. S., & Higgitt, A. C. (1991). The capacity

for understanding mental states: The reflective self in parent and child and its significance for security of attachment. *Infant Mental Health Journal*, 12(3), 201-218. [https://doi.org/10.1002/1097-0355\(199123\)12:3<201::AID-IMHJ2280120307>3.0.CO;2-7](https://doi.org/10.1002/1097-0355(199123)12:3<201::AID-IMHJ2280120307>3.0.CO;2-7)

Fonagy, P., & M. Target. (2005). Bridging the transmission gap: An end to an important mystery of attachment research? *Attachment and Human Development*, 7, 333-43. <https://doi.org/10.1080/14616730500269278>

George, C., Kaplan, N., and Main, M. (1985). *The Adult Attachment Interview*. Berkeley, CA: University of California at Berkeley.

Girli, A. (2014). Psychometric properties of the Turkish child and adult form of “Reading the Mind in the Eyes Test”. *Psychology*, 5, 1321-1337. DOI:10.4236/psych.2014.511143

Gluck, S. C., Tahiroğlu, D., & Moses, L. J. (2020). A comparison of mother and father reports of children’s theory of mind: further validation of the children’s social understanding scale. *European Journal of Developmental Psychology*, 18(3), 459-469. <https://doi.org/10.1080/17405629.2020.1813100>

Gordo, L., Martinez-Pampliega, A., Elejalde, L. I., & Luyten, P. (2020). Do parental reflective functioning and parental competence affect the socioemotional adjustment of children? *Journal of Child and Family Studies*, 29(12), 3621-3631. <https://doi.org/10.1007/s10826-020-01840-z>

Göregenli, M. (1995). Individualism-collectivism orientations in the Turkish culture: A preliminary study. *Turkish Journal of Psychology*, 10(35), 1–14.

Göregenli, M. (1997). Individualistic-collectivistic tendencies in a Turkish sample. *Journal of Cross-Cultural Psychology*, 28(6), 787–794.

Guajardo, N. R., Snyder, G., & Petersen, R. (2009). Relationships among parenting practices, parental stress, child behaviour, and children's social-cognitive development. *Infant and Child Development: An International Journal of Research and Practice*, 18(1), 37-60. <https://doi.org/10.1002/icd.578>

Halfon, S., Coşkun, A., Bekar, Ö., & Steele, H. (2020). Imbalances and impairments in mental state talk of children with internalizing and externalizing problems. *Journal of Infant, Child, and Adolescent Psychotherapy*, 19(3), 283-302. <https://doi.org/10.1080/15289168.2020.1771531>

Hancock, G. R. (1997). Structural equation modeling methods of hypothesis testing of latent variable means. *Measurement and Evaluation in Counseling and Development*, 30(2), 91-105.

- Harris, P. L., Johnson, C. N., Hutton, D., Andrews, G., & Cooke, T. (1989). Young children's theory of mind and emotion. *Cognition & Emotion*, 3(4), 379-400. <https://doi.org/10.1080/02699938908412713>
- Harwood, M. D., & Farrar, M. J. (2006). Conflicting emotions: The connection between affective perspective taking and theory of mind. *British Journal of Developmental Psychology*, 24(2), 401-418. <https://doi.org/10.1348/026151005X50302>
- Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). Guilford Publications.
- Hoff-Ginsberg, E. (1998). The relation of birth order and socioeconomic status to children's language experience and language development. *Applied Psycholinguistics*, 19(4), 603-629. [doi:10.1017/S0142716400010389](https://doi.org/10.1017/S0142716400010389)
- Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development*, 74(5), 1368-1378. <https://doi.org/10.1111/1467-8624.00612>
- Howard, A. A., Mayeux, L., & Naigles, L. R. (2008). Conversational correlates of children's acquisition of mental verbs and a theory of mind. *First Language*, 28(4), 375-402. <https://doi.org/10.1177/0142723708091044>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Hughes, C. (1998). Executive function in preschoolers: Links with theory of mind and verbal ability. *British Journal of Developmental Psychology*, 16(2), 233-253. <https://doi.org/10.1111/j.2044-835X.1998.tb00921.x>
- İlgaz, H., Bürümlü-Kısa, E., & Evsen, S. (hazırlık aşamasında). More than words: Maternal mental state talk in repeated storytellings as a form of dynamic scaffolding that supports theory of mind development.
- Jenkins, J. M., & Astington, J. W. (1996). Cognitive factors and family structure associated with theory of mind development in young children. *Developmental Psychology*, 32(1), 70-78. <https://doi.org/10.1037/0012-1649.32.1.70>
- Jenkins, J. M., Turrell, S. L., Kogushi, Y., Lollis, S., & Ross, H. S. (2003). A longitudinal investigation of the dynamics of mental state talk in families. *Child development*, 74(3), 905-920. <https://doi.org/10.1111/1467-8624.00575>
- Jessee, A. (2020). Associations between maternal reflective functioning, parenting

- beliefs, nurturing, and preschoolers' emotion understanding. *Journal of Child and Family Studies*, 29(11), 3020-3028. <https://doi.org/10.1007/s10826-020-01792-4>
- Kim, Y. S. G., Dore, R., Cho, M., Golinkoff, R., & Amendum, S. (2021). Theory of mind, mental state talk, and discourse comprehension: Theory of mind process is more important for narrative comprehension than for informational text comprehension. *Journal of Experimental Child Psychology*, 209, 105181. <https://doi.org/10.1016/j.jecp.2021.105181>
- Kovács, Á. M., Téglás, E., & Endress, A. D. (2010). The social sense: Susceptibility to others' beliefs in human infants and adults. *Science*, 330(6012), 1830-1834. DOI: [10.1126/science.1190792](https://doi.org/10.1126/science.1190792)
- Lewis, C., Freeman, N. H., Kyriakidou, C., Maridaki-Kassotaki, K., & Berridge, D. M. (1996). Social influences on false belief access: Specific sibling influences or general apprenticeship? *Child Development*, 67(6), 2930-2947. <https://doi.org/10.1111/j.1467-8624.1996.tb01896.x>
- Lundy, B. L., & Fyfe, G. (2015). Preschoolers' mind-related comments during collaborative problem-solving: Parental contributions and developmental outcomes. *Social Development*, 25(4), 722-741. <https://doi.org/10.1111/sode.12176>
- Luo, Y. (2011). Do 10-month-old infants understand others' false beliefs?. *Cognition*, 121(3), 289-298. <https://doi.org/10.1016/j.cognition.2011.07.011>
- Luyten, P., L. C. Mayes, L. Sadler, P. Fonagy, S. Nicholls, M. Crowley, & A. Slade. (2009). *The Parental Reflective Functioning Questionnaire-1 (PRFQ-1)*. Leuven, Belgium: University of Leuven.
- Luyten, P., Nijssens, L., Fonagy, P., & Mayes, L. C. (2017a). Parental reflective functioning: Theory, research, and clinical applications. *The Psychoanalytic Study of the Child*, 70(1), 174-199. <https://doi.org/10.1080/00797308.2016.1277901>
- Luyten, P., Mayes, L. C., Nijssens, L., & Fonagy, P. (2017b). The parental reflective functioning questionnaire: Development and preliminary validation. *PloS One*, 12(5), e0176218. <https://doi.org/10.1371/journal.pone.0176218>
- MacWhinney, B. (2000). *The CHILDES project: The database* (Vol. 2). Psychology Press.
- Mayer, M. (1969). *Frog, where are you?* Dial Press.
- McAlister, A. R., & Peterson, C. C. (2013). Siblings, theory of mind, and executive functioning in children aged 3–6 years: New longitudinal evidence. *Child Development*, 84(4), 1442-1458. <https://doi.org/10.1111/cdev.12043>

- McElwain, N. L., Booth-LaForce, C., & Wu, X. (2011). Infant–mother attachment and children's friendship quality: Maternal mental-state talk as an intervening mechanism. *Developmental Psychology*, 47(5), 1295. <https://doi.org/10.1037/a0024094>
- McMahon, C. A., & Bernier, A. (2017). Twenty years of research on parental mind-mindedness: Empirical findings, theoretical and methodological challenges, and new directions. *Developmental Review*, 46, 54-80. <https://doi.org/10.1016/j.dr.2017.07.001>
- Meins, E., Fernyhough, C., Wainwright, R., Das Gupta, M., Fradley, E., & Tuckey, M. (2002). Maternal mind-mindedness and attachment security as predictors of theory of mind understanding. *Child Development*, 73(6), 1715-1726. <https://doi.org/10.1111/1467-8624.00501>
- Meins, E., Fernyhough, C., Johnson, F., & Lidstone, J. (2006). Mind-mindedness in children: Individual differences in internal-state talk in middle childhood. *British Journal of Developmental Psychology*, 24(1), 181-196. <https://doi.org/10.1348/026151005X80174>
- Meins, E., & Fernyhough, C. (2015). *Mind-mindedness coding manual, Version 2.2*. Unpublished manuscript. University of York, York, UK.
- Moore, C., Pure, K., & Furrow, D. (1990). Children's understanding of the modal expression of speaker certainty and uncertainty and its relation to the development of a representational theory of mind. *Child Development*, 61(3), 722-730. <https://doi.org/10.1111/j.1467-8624.1990.tb02815.x>
- Nederhof, A. J. (1985). Methods of coping with social desirability bias: A review. *European Journal of Social Psychology*, 15(3), 263-280. <https://doi.org/10.1002/ejsp.2420150303>
- Nijssens, L., Bleys, D., Casalin, S., Vliegen, N., & Luyten, P. (2018). Parental attachment dimensions and parenting stress: The mediating role of parental reflective functioning. *Journal of Child and Family Studies*, 27(6), 2025-2036. <https://doi.org/10.1007/s10826-018-1029-0>
- Nijssens, L., Vliegen, N., & Luyten, P. (2020). The mediating role of parental reflective functioning in child social–emotional development. *Journal of Child and Family Studies*, 29(8), 2342-2354. <https://doi.org/10.1007/s10826-020-01767-5>
- Nijssens, L., Luyten, P., Malcorps, S., Vliegen, N., & Mayes, L. (2021). Parental reflective functioning and theory of mind acquisition: A developmental perspective. *British Journal of Developmental Psychology*. <https://doi.org/10.1111/bjdp.12383>

- Onishi, K. H., & Baillargeon, R. (2005). Do 15-month-old infants understand false beliefs? *Science*, 308, 255-258. DOI: [10.1126/science.1107621](https://doi.org/10.1126/science.1107621)
- Ontai, L. L., & Thompson, R. A. (2008). Attachment, parent–child discourse and theory-of-mind development. *Social Development*, 17(1), 47-60. <https://doi.org/10.1111/j.1467-9507.2007.00414.x>
- Oppenheim, D., Koren-Karie, N., & Sagi, A. (2001). Mothers' empathic understanding of their preschoolers' internal experience: Relations with early attachment. *International Journal of Behavioral Development*, 25(1), 16-26. DOI: [10.1080/01650250042000096](https://doi.org/10.1080/01650250042000096)
- O'Reilly, J., & Peterson, C. C. (2014). Theory of mind at home: Linking authoritative and authoritarian parenting styles to children's social understanding. *Early Child Development and Care*, 184(12), 1934-1947. <https://doi.org/10.1080/03004430.2014.894034>
- Ornaghi, V., Pepe, A., & Grazzani, I. (2016). False-belief understanding and language ability mediate the relationship between emotion comprehension and prosocial orientation in preschoolers. *Frontiers in Psychology*, 7, 1534. <https://doi.org/10.3389/fpsyg.2016.01534>
- Pavarini, G., de Hollanda Souza, D., & Hawk, C. K. (2012). Parental practices and theory of mind development. *Journal of Child and Family Studies*, 22, 844-853. <https://doi.org/10.1007/s10826-012-9643-8>
- Pears, K. C., & Moses, L. J. (2003). Demographics, parenting, and theory of mind in preschool children. *Social Development*, 12(1), 1-20. <https://doi.org/10.1111/1467-9507.00219>
- Perner, J., Ruffman, T., & Leekam, S. R. (1994). Theory of mind is contagious: You catch it from your sibs. *Child Development*, 65(4), 1228-1238. <https://doi.org/10.1111/j.1467-8624.1994.tb00814.x>
- Peterson, C., & Slaughter, V. (2003). Opening windows into the mind: Mothers' preferences for mental state explanations and children's theory of mind. *Cognitive Development*, 18(3), 399-429. [https://doi.org/10.1016/S0885-2014\(03\)00041-8](https://doi.org/10.1016/S0885-2014(03)00041-8)
- Peterson, C. C., Wellman, H. M., & Liu, D. (2005). Steps in theory-of-mind development for children with deafness or autism. *Child Development*, 76(2), 502-517. <https://doi.org/10.1111/j.1467-8624.2005.00859.x>
- Pillow, B. H. (1989). Early understanding of perception as a source of knowledge. *Journal of Experimental Child Psychology*, 47(1), 116-129. [https://doi.org/10.1016/0022-0965\(89\)90066-0](https://doi.org/10.1016/0022-0965(89)90066-0)

- Pluta, A., Krysztofiak, M., Zgoda, M., Wysocka, J., Golec, K., Gajos, K., ... & Haman, M. (2023). Theory of Mind and Parental Mental-State Talk in Children with CIs. *The Journal of Deaf Studies and Deaf Education*, enad004. <https://doi.org/10.1093/deafed/enad004>
- Pratt, C., & Bryant, P. (1990). Young children understand that looking leads to knowing (so long as they are looking into a single barrel). *Child Development*, 61(4), 973-982. <https://doi.org/10.1111/j.1467-8624.1990.tb02835.x>
- Premack, D., & Woodruff, G. (1978). Does the chimpanzee have a theory of mind?. *Behavioral and Brain Sciences*, 1(4), 515-526. [doi:10.1017/S0140525X00076512](https://doi.org/10.1017/S0140525X00076512)
- R Core Team (2021). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.
- Reilly, J., Losh, M., Bellugi, U., & Wulfeck, B. (2004). "Frog, where are you?" Narratives in children with specific language impairment, early focal brain injury, and Williams syndrome. *Brain and language*, 88(2), 229-247. [https://doi.org/10.1016/S0093-934X\(03\)00101-9](https://doi.org/10.1016/S0093-934X(03)00101-9)
- Repacholi, B. M., & Gopnik, A. (1997). Early reasoning about desires: Evidence from 14- and 18-month-olds. *Developmental Psychology*, 33(1), 12–21. <https://doi.org/10.1037/0012-1649.33.1.12>
- Resches, M., & Pereira, M. P. (2007). Referential communication abilities and theory of mind development in preschool children. *Journal of Child Language*, 34(1), 21-52. [doi:10.1017/S0305000906007641](https://doi.org/10.1017/S0305000906007641)
- Reynolds, E., Garrett-Peters, P., Bratsch-Hines, M., Vernon-Feagans, L., Family Life Project Key Investigators, Vernon Feagans, L., ... & Werner, E. (2020). Mothers' and Fathers' Mental State Talk: Ethnicity, Partner Talk, and Sensitivity. *Journal of Marriage and Family*, 82(5), 1696-1716. <https://doi.org/10.1111/jomf.12675>
- Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1–36. <https://doi.org/10.18637/jss.v048.i02>
- Rostad, W. L., & Whitaker, D. J. (2016). The association between reflective functioning and parent–child relationship quality. *Journal of Child and Family Studies*, 25(7), 2164-2177. <https://doi.org/10.1007/s10826-016-0388-7>
- Ruffman, T., Perner, J., Naito, M., Parkin, L., & Clements, W. A. (1998). Older (but not younger) siblings facilitate false belief understanding. *Developmental Psychology*, 34(1), 161–174. <https://doi.org/10.1037/0012-1649.34.1.161>

- Ruffman, T., Perner, J., & Parkin, L. (1999). How parenting style affects false belief understanding. *Social Development*, 8(3), 395-411. <https://doi.org/10.1111/1467-9507.00103>
- Ruffman, T., Slade, L., & Crowe, E. (2002). The relation between children's and mothers' mental state language and theory-of-mind understanding. *Child Development*, 73(3), 734-751. <https://doi.org/10.1111/1467-8624.00435>
- Ruffman, T., Slade, L., Devitt, K., & Crowe, E. (2006). What mothers say and what they do: The relation between parenting, theory of mind, language and conflict/cooperation. *British Journal of Developmental Psychology*, 24(1), 105-124. <https://doi.org/10.1348/026151005X82848>
- Rutherford, H. J., Maupin, A. N., Landi, N., Potenza, M. N., & Mayes, L. C. (2017). Parental reflective functioning and the neural correlates of processing infant affective cues. *Social Neuroscience*, 12(5), 519-529. <https://doi.org/10.1080/17470919.2016.1193559>
- Sabbagh, M. A., & Seamans, E. L. (2008). Intergenerational transmission of theory-of-mind. *Developmental Science*, 11(3), 354-360. <https://doi.org/10.1111/j.1467-7687.2008.00680.x>
- Schultheis, A. M., Mayes, L. C., & Rutherford, H. J. (2019). Associations between emotion regulation and parental reflective functioning. *Journal of Child and Family Studies*, 28(4), 1094-1104. <https://doi.org/10.1007/s10826-018-01326-z>
- Seidenfeld, A. M., Johnson, S. R., Cavadel, E. W., & Izard, C. E. (2014). Theory of mind predicts emotion knowledge development in head start children. *Early Education and Development*, 25(7), 933-948. <https://doi.org/10.1080/10409289.2014.883587>
- Selcuk, B., Brink, K. A., Ekerim, M., & Wellman, H. M. (2018). Sequence of theory-of-mind acquisition in Turkish children from diverse social backgrounds. *Infant and Child Development*, 27(4), e2098. <https://doi.org/10.1002/icd.2098>
- Sharp, C., & Fonagy, P. (2008). The parent's capacity to treat the child as a psychological agent: Constructs, measures and implications for developmental psychopathology. *Social Development*, 17(3), 737-754. <https://doi.org/10.1111/j.1467-9507.2007.00457.x>
- Slade, A. (2005). Parental reflective functioning: An introduction. *Attachment & Human Development*, 7(3), 269-281. <https://doi.org/10.1080/14616730500245906>
- Slade, A., Grunebaum, L., Haganir, L., & Reeves, M. (2007). *The pregnancy interview-revised*. City College of New York.

- Slaughter, V., Peterson, C. C., & Mackintosh, E. (2007). Mind what mother says: Narrative input and theory of mind in typical children and those on the autism spectrum. *Child Development*, 78(3), 839-858. <https://doi.org/10.1111/j.1467-8624.2007.01036.x>
- Slaughter, V., & Peterson, C. C. (2012). How conversational input shapes theory of mind development in infancy and early childhood. In M. Siegal & L. Surian (Eds.), *Access to language and cognitive development*, (pp. 3-22). Oxford University Press.
- Soper, D. S. (2021). A-priori sample size calculator for structural equation models [Software]. <https://www.danielsoper.com/statcalc>
- Suchman, N. E., DeCoste, C., Leigh, D., & Borelli, J. (2010). Reflective functioning in mothers with drug use disorders: Implications for dyadic interactions with infants and toddlers. *Attachment & Human Development*, 12(6), 567-585. <https://doi.org/10.1080/14616734.2010.501988>
- Sullivan, K., Zaitchik, D., & Tager-Flusberg, H. (1994). Preschoolers can attribute second-order beliefs. *Developmental Psychology*, 30(3), 395-402. <https://doi.org/10.1037/0012-1649.30.3.395>
- Sullivan, J. Z. (2020). What you say and how you say it: Socioeconomic differences in parent mental-state talk. *UC Merced*. ProQuest ID: Sullivan_ucmerced_1660M_10602. Merritt ID: ark:/13030/m5qp1r5h. Retrieved from <https://escholarship.org/uc/item/5f9189v5>
- Surian, L., Caldi, S., & Sperber, D. (2007). Attribution of beliefs by 13-month-old infants. *Psychological Science*, 18(7), 580-586. <https://doi.org/10.1111/j.1467-9280.2007.01943.x>
- Surian, L., & Geraci, A. (2012). Where will the triangle look for it? Attributing false beliefs to a geometric shape at 17 months. *British Journal of Developmental Psychology*, 30(1), 30-44. <https://doi.org/10.1111/j.2044-835X.2011.02046.x>
- 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. <https://doi.org/10.1111/1467-9507.00108>
- Symons, D. K., Fossum, K. L. M., & Collins, T. K. (2006). A longitudinal study of belief and desire state discourse during mother-child play and later false belief understanding. *Social Development*, 15(4), 676-692. <https://doi.org/10.1111/j.1467-9507.2006.00364.x>
- Tager-Flusberg, H., & Sullivan, K. (1995). Attributing mental states to story characters: A comparison of narratives produced by autistic and mentally retarded individuals.

- Tahiroğlu, D., Moses, L. J., Carlson, S. M., Mahy, C. E., Olofson, E. L., & Sabbagh, M. A. (2014). The Children's Social Understanding Scale: Construction and validation of a parent-report measure for assessing individual differences in children's theories of mind. *Developmental Psychology*, 50(11), 2485. <https://doi.org/10.1037/a0037914>
- Tahiroğlu, D. & Yağmurlu, B. (April, 2014). Zihin kuramı değerlendirmesindeki ilk ebeveyn bildirim ölçeğinin Türkçe adaptasyonu ve psikometrik özellikleri (Turkish adaptation and psychometric properties of the first parent report theory of mind scale). Paper presented at the 18th National Congress of Psychology, Bursa, Turkey.
- Taumoepeau, M., & Ruffman, T. (2006). Mother and infant talk about mental states relates to desire language and emotion understanding. *Child Development*, 77(2), 465-481. <https://doi.org/10.1111/j.1467-8624.2006.00882.x>
- Taumoepeau, M., & Ruffman, T. (2008). Stepping stones to others' minds: Maternal talk relates to child mental state language and emotion understanding at 15, 24, and 33 months. *Child Development*, 79(2), 284-302. <https://doi.org/10.1111/j.1467-8624.2007.01126.x>
- Taumoepeau, M. (2015). From talk to thought: Strength of ethnic identity and caregiver mental state talk predict social understanding in preschoolers. *Journal of Cross-Cultural Psychology*, 46(9), 1169-1190. [doi:10.1177/0022022115604393](https://doi.org/10.1177/0022022115604393)
- Taumoepeau, M., Sadeghi, S., & Nobilo, A. (2019). Cross-cultural differences in children's theory of mind in Iran and New Zealand: The role of caregiver mental state talk. *Cognitive Development*, 51, 32-45. <https://doi.org/10.1016/j.cogdev.2019.05.004>
- Thompson, R. A. (2006). Conversation and developing understanding: Introduction to the special issue. *Merrill-Palmer Quarterly* 52(1), 1-16. <https://www.jstor.org/stable/10.13110/merrpalmquar1982.60.1.0024>
- Thompson, R. B., Foster, B. J., & Kapinos, J. R. (2016). Poverty, affluence and the Socratic method: Parents' questions versus statements within collaborative problem-solving. *Language & Communication*, 47, 23-29. <https://doi.org/10.1016/j.langcom.2015.11.003>
- Tompkins, V., Benigno, J. P., Kiger Lee, B., & Wright, B. M. (2018). The relation between parents' mental state talk and children's social understanding: A meta-analysis. *Social Development*, 27(2), 223-246. <https://doi.org/10.1111/sode.12280>

- Turkish Statistical Institute (TurkStat). (2022, April 01). *Türkiye Family Structure Survey, 2021*. <https://data.tuik.gov.tr/Bulten/Index?p=Turkiye-Family-Structure-Survey-2021-45813&dil=2>
- Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Wang, Y., & Su, Y. (2009). False belief understanding: Children catch it from classmates of different ages. *International Journal of Behavioral Development*, 33(4), 331-336. [doi:10.1177/0165025409104525](https://doi.org/10.1177/0165025409104525)
- Weimer, A. A., Sallquist, J., & Bolnick, R. R. (2012). Young children's emotion comprehension and theory of mind understanding. *Early Education & Development*, 23(3), 280-301. <https://doi.org/10.1080/10409289.2010.517694>
- Wellman, H. M., & Bartsch, K. (1989). Three-year-olds understand belief: A reply to Perner. *Cognition*, 33(3), 321–326. [https://doi.org/10.1016/0010-0277\(89\)90033-4](https://doi.org/10.1016/0010-0277(89)90033-4)
- Wellman, H. M., Hollander, M., & Schult, C. A. (1996). Young children's understanding of thought bubbles and of thoughts. *Child Development*, 67(3), 768-788. <https://doi.org/10.1111/j.1467-8624.1996.tb01763.x>
- Wellman, H. M., Cross, D., & Watson, J. (2001). Meta-analysis of theory-of-mind development: The truth about false belief. *Child Development*, 72(3), 655-684. <https://doi.org/10.1111/1467-8624.00304>
- Wellman, H. M., & Liu, D. (2004). Scaling of theory-of-mind tasks. *Child Development*, 75(2), 523-541. <https://doi.org/10.1111/j.1467-8624.2004.00691.x>
- Westland, J. C. (2010). Lower bounds on sample size in structural equation modeling. *Electronic Commerce Research and Applications*, 9(6), 476-487. <https://doi.org/10.1016/j.elerap.2010.07.003>
- Wikle, J. S., Jensen, A. C., & Hoagland, A. M. (2018). Adolescent caretaking of younger siblings. *Social Science Research*, 71, 72-84. <https://doi.org/10.1016/j.ssresearch.2017.12.007>
- Woolfe, T., Want, S. C., & Siegal, M. (2002). Signposts to development: Theory of mind in deaf children. *Child Development*, 73(3), 768-778. <https://doi.org/10.1111/1467-8624.00437>
- Yagmurlu, B., Sanson, A., & Koymen, S. B. (2005). Ebeveynlerin ve çocuk mizacının olumlu sosyal davranış gelişimine etkileri: Zihin kuramının belirleyici rolü. *Turkish Journal of Psychology*, 20(55), 1-20.

Yott, J., & Poulin-Dubois, D. (2012). Breaking the rules: Do infants have a true understanding of false belief?. *British Journal of Developmental Psychology*, 30(1), 156-171. <https://doi.org/10.1111/j.2044-835X.2011.02060.x>

Zeanah, C. H., Benoit, D., Hirshberg, L., Barton, M. L., & Regan, C. (1994). Mothers' representations of their infants are concordant with infant attachment classifications. *Developmental Issues in Psychiatry and Psychology*, 1(1), 1-14.



APPENDIX A

A.1 Bilgilendirilmiş Onam Formu

Çocukların başkalarının zihninden geçenleri nasıl anladığını araştıran bu tez çalışması, Kadir Has Üniversitesi Psikoloji Bilimleri programında Lisansüstü Öğrencisi olan Nursena Koç tarafından Dr. Öğr. Üyesi Berna Arslan Uzundağ danışmanlığında yürütülmektedir. Bu formun amacı ise sizi araştırma koşulları bakımından bilgilendirmek ve çalışmaya tamamen gönüllü olarak katılmanız hususunda onayınızı almaktır.

Çalışmanın amacı: Okul öncesi (48-60 ay) çocukların başkalarının zihninden geçenleri nasıl anladığını incelemek.

Çalışmada nasıl yardımcı olacaksınız: Çalışmamız iki kısımdan oluşmaktadır. İlk kısımda size çevrimiçi sunulan anketteki sorulara yanıt vermeniz istenecektir. Ardından onayınız ile Zoom üzerinden bir çevrimiçi görüşme ayarlanacaktır. Bu ikinci kısımda, çocuğunuzun oyun formatındaki bazı sorulara cevap vermesi ve çocuğunuzla her zamanki gibi iletişim kurmanız beklenecektir.

Çalışmanın süresi: Çalışmanın ilk kısmının ortalama 30 dk, ikinci kısmının ortalama 60 dakika sürmesi beklenmektedir.

Çalışmaya veri sağlayan katılımcı olarak bilmeniz gerekenler: Sizden aldığımız gizlilik içeren bilgiler (örn. telefon numarası, Zoom görüşme kaydı) çalışma yürütücüsü, danışmanı ve asistanları haricinde hiç kimseyle paylaşılmayacaktır. Bilgileriniz anonim şekilde saklanacaktır.

Riskler: Çalışmayla ilgili beklenen herhangi bir risk yoktur.

Araştırma çalışması riskleri bakımından çalışmaya katılmanız durumunda karşılaşılabileceğiniz ve günlük yaşamınızı etkileyebilecek durumlar: Yoktur.

Araştırma hakkında daha fazla bilgi almak isterseniz başvuracağınız araştırmacı adresi:

Nursena Koç, Kadir Has Üniversitesi, Kadir Has Caddesi, Cibali, Fatih, İstanbul

Araştırmacı e-posta adresi: nursena.koc@stu.khas.edu.tr

Araştırma çalışması hakkında bilgi edindim ve yukarıda yazılanları okudum; bu çalışmaya gönüllü olarak katılmayı, benden sağlanan nicelik, nitelik, görsel, işitsel veri ve kayıtlarımın projenin/çalışmanın bir parçası olarak kullanılmasını, işlenmesini, saklanmasını ve tamamlanmış projenin/çalışmanın bilimsel yayın, bilimsel rapor, bilimsel tebliğ, yarışma, konferans, tanıtım ve benzeri ticari amacı olmayan etkinlikler kapsamında ismim ve kişisel bilgilerim verilmeden paylaşılmasını kabul ediyorum.

APPENDIX B

B.1 Demografik Bilgi Formu

1. Çocuğunuzun doğum tarihini giriniz:

Gün: Ay:..... Yıl:.....

2. Çocuğunuzun cinsiyeti nedir?

Kız..... Oğlan.....

3. Sizi en iyi tanımlayan şıkkı seçiniz.

...Tam zamanlı çalışıyor

...Yarı zamanlı

...Çalışmıyor

...Öğrenci veya kursa gidiyor

...İş arıyor, bulsa çalışmak istiyor

...Gönüllü çalışıyor

...Emekli

4. Çocuğunuzun babası sağ mı?

Evet..... Hayır.....

(Cevap hayır ise direkt 6. soruya geçiyor.)

5. Çocuğunuzun babasını en iyi tanımlayan şıkkı seçiniz.

...Tam zamanlı çalışıyor

...Yarı zamanlı

...Çalışmıyor

...Öğrenci veya kursa gidiyor

...İş arıyor, bulsa çalışmak istiyor

...Gönüllü çalışıyor

...Emekli

6. Çocuğunuz kreşe veya anaokuluna gidiyor mu?

Evet..... Hayır.....

Yanıtınız evet ise,

7. Çocuğunuz haftada kaç gün kreş veya anaokuluna gidiyor?

..... 1 2 3 4 6 ve üzeri

8. Kendi doğum tarihinizi giriniz.

....Gün Ay Yıl

9. Eğitim durumunuz (en son bitirdiğiniz okul) nedir?

....İlkokul terk
....İlkokul mezunu
....Ortaokul mezunu
....Lise mezunu
...Ön lisans mezunu
....Lisans mezunu
....Yüksek lisans mezunu
....Doktora mezunu

10. Çocuğunuzun babasının eğitim durumu (en son bitirdiği okul) nedir? (4. Sorunun cevabı hayır ise bu soru görünmüyor.)

....İlkokul terk
....İlkokul mezunu
....Ortaokul mezunu
....Lise mezunu
...Ön lisans mezunu
....Lisans mezunu
....Yüksek lisans mezunu
....Doktora mezunu

11. Evinizde kaç yetişkin yaşıyor?

...1 ...2 ...3 ...4 ...5 ...6 ve/veya daha fazla

12. Evinizde kaç çocuk yaşıyor?

...1 ...2 ...3 ...4 ...5 ...6 ve/veya daha fazla

13. Çocuğunuzun kendinden büyük kaç kardeşi var? (Lütfen çalışmaya birlikte katıldığınız çocuğunuzu düşünerek cevaplayın.)

...1 ...2 ...3 ...4 ...5 ...6 ve/veya daha fazla

14. Çocuğunuzun kendinden küçük kaç kardeşi var? (Lütfen çalışmaya birlikte katıldığınız çocuğunuzu düşünerek cevaplayın.)

...1 ...2 ...3 ...4 ...5 ...6 ve/veya daha fazla

15. Yakın çevrenizde çocuğunuzla düzenli iletişime geçen kaç yetişkin akrabanız var?

...1 ...2 ...3 ...4 ...5 ...6 ...7 ...8 ve/veya daha fazla

16. Hangi şehirde yaşıyorsunuz?

.....

17. Hanenizin aylık toplam geliri aşağıdakilerden hangi aralıktadır?

(Lütfen evinizde yaşayan tüm kişilerin maaş, kira gibi tüm gelirlerinin toplamını düşünerek yanıtlayınız.)

....1.600 TL ve altı

....1.600 TL – 4.000 TL

....4.000 TL – 5.500 TL

....5.500 TL – 11.500 TL

....11.500 TL ve üstü

APPENDIX C

C.1 Ebeveyn İçsel Düşünme İşlevselliği Ölçeği

Aşağıda siz ve çocuğunuz hakkında bir takım ifadeler yer almaktadır. Her maddeyi lütfen dikkatle okuyunuz ve her maddeye ne derecede katılıp katılmadığınızı belirtiniz. Cevaplarınızı maddelerin yanındaki sayıları seçerek gösteriniz. Belirtilen ifadeye tamamen katılıyorsanız 7; hiç katılmıyorsanız 1; ne katılıyor ne katılmıyorsanız ya da kararsızsanız 4 rakamını işaretleyiniz.

1 = Kesinlikle katılmıyorum; 2 = Çoğunlukla katılmıyorum; 3 = Biraz katılmıyorum; 4 = Kararsızım; 5 = Biraz katılıyorum; 6 = Çoğunlukla katılıyorum; 7 = Kesinlikle katılıyorum

	1	2	3	4	5	6	7
1. Çocuğumun beni sevdiğinden yalnızca o bana gülümsediği zaman emin olurum.							
2. Çocuğumun ne istediğini her zaman bilirim.							
3. Çocuğumun duygu ve davranışlarının altındaki sebepleri anlamak isterim.							
4. Çocuğum yabancıların yanında beni mahcup etmek için ağlar.							
5. Çocuğumun aklından geçenleri tamamıyla okuyabilirim.							
6. Çocuğumun ne düşündüğünü ve hissettiğini çok merak ederim.							
7. Çocuğumun evcilik, doktorculuk ve benzeri oyunlarına aktif bir şekilde katılmakta zorlanırım.							
8. Çocuğumun ne yapacağını her zaman tahmin edebilirim.							

9. Çocuğumun nasıl hissettiğini genellikle merak ederim.							
10. Çocuğum bazen yapmak istediğim şeyden beni alıkoymak için hasta olur.							
11. Çocuğumun yaptıklarını bazen yanlış anlayabiliyorum.							
12. Olaylara çocuğumun gözünden bakmaya çalışırım.							
13. Çocuğum mızızlandığı zaman bunu beni kızdırmak için yapar.							
14. Çocuğuma neyi neden yaptığını her zaman bilirim.							
15. Çocuğumun neden yaramazlık yaptığını anlamaya çalışırım.							
16. Çoğu zaman, çocuğumun davranışları çaba göstersem de anlaşılamayacak kadar karmaşıktır.							
17. Çocuğumun davranışlarının sebebini her zaman bilirim.							
18. Çocuğumun ne hissettiğini tahmin etmeye çalışmanın bir işe yaramadığına inanıyorum.							

APPENDIX D

D.1 Zihin Kuramı Yeteneđi Gelişimsel Ölçeđi

1. Farklı istek

Materyaller: Küçük bir kız oyuncak bebek. Yarısında bir havuç, diđer yarısında bir kurabiye resmi bulunan slayt sayfası.

Önce araştırmacı oyuncacı ve resimleri gösterir ve çocuđa tanıtır: “Bu Ayşe (oyuncak bebek slayt sayfasında iki resmin ortasında belirir). Ayşe’nin karnı acıkmış ve canı bir şeyler yemek istiyor. Burada iki farklı yiyecek var: bir havuç (işaret et) ve bir kurabiye (işaret et).”

Sonra çocuđa *kendi isteđi* sorulur: “Sen en çok hangi yiyeceđi **seviyorsun**? En çok havucu (işaret et) mu, yoksa kurabiyeyi (işaret et) mi seversin?”

Eđer çocuk “Havuç” derse, “Peki, bu iyi bir seçim. **Ama...** Ayşe aslında kurabiyeleri **sever** (işaret etme). Havucu sevmez. **Onun en çok sevdiđi** yiyecek kurabiyedir.” denir.

Eđer çocuk “Kurabiye” derse, “Peki, bu iyi bir seçim. **Ama...** Ayşe aslında havucu **sever** (işaret etme). Kurabiyeyi sevmez. **Onun en çok sevdiđi** şey havuçtur.” denir.

Sonra *hedef soruya* geçilir: “Evet şimdi yemek yeme zamanı. Ayşe **yalnızca bir** yiyeceđi seçebilir, **sadece birini**. Ayşe (Ayşe’yi işaret et) hangi yiyeceđi **seçecek**? ... Havucu mu, kurabiyeyi mi?”

Puanlama: Çocuk *hedef soruya*, *kendi isteđi sorusuna* verdiđi cevabın tersi biçimde cevap verirse doğru cevap vermiş olur.

2. Bilgi Erişimi

Materyaller: Kolayca tanımlanamayan (yani dış görünüşünden ne kutusu olduđu anlaşılmayan, örnek: çikolata, bardak) kare şeklinde küçük bir kutu. Kutuya sığacak büyüklükte oyuncak bir köpek. Küçük bir erkek oyuncak bebek.

Araştırmacı yeni oyunun materyallerini çıkartır: “Burada bir kutu var (kutunun üzerine parmađını koy).”

Araştırmacı çocuđa sorar: “Sence kutunun içinde ne var (kutuyu işaret et)?”

Çocuk cevap verse de vermese de araştırmacı meraklı ve heyecanlı bir şekilde: “Haydi bir bakalım... Aaa içinde **bir köpek** varmış!” der.

Araştırmacı köpeği göstermek için kutunun kapağını açar ve çocuğun köpeği gördüğünden emin olduktan sonra kutuyu kapatır.

Çocuğun kutunun içinde ne olduğunu öğrenip öğrenmediği anlamak için *kontrol* sorusu sorulur: “Peki...Söyle bakalım, ne vardı kutunun içinde?”

Eğer çocuk burada hata yaparsa, soruyu doğru yanıtlayana kadar içerisinde bulunanlar tekrar gösterilir.

Araştırmacı eline bebeği alır: “Ve işte Ali. Ali bu kutunun içindekini **daha önce hiç görmedi.**”

Sonra *hedef soruya* geçilir. Araştırmacı “Peki... Ali kutuda ne olduğunu **biliyor mu?**” diye sorar. Çocuğun cevabından sonra *hafıza sorusu* sorulur. Araştırmacı “Ali bu kutunun içini **gördü mü?**” diye sorar.

Puanlama: Bu bölümdeki sorunun cevabının doğru olarak puanlanması için çocuğun *hedef soruyu* ve *hafıza sorusunu* “hayır” olarak yanıtlaması gerekmektedir.

3. Farklı İnanış

Materyaller: Küçük bir kız oyuncak bebek. Yarısında çalılık ve diğer yarısında bir garajın önünde araba resmi bulunan slayt sayfası.

Önce araştırmacı oyuncak ve resimleri gösterir ve çocuğa tanıtır: “Şimdi başka bir oyuna geçiyoruz. Bu Ayşe (oyuncak bebek slayt sayfasında iki resmin ortasında belirir). Ayşe kedisini bulmak istiyor. Kedisi çalılıkların içinde (işaret et) saklanıyor olabilir ya da arabanın arkasında (işaret et) saklanıyor olabilir.”

Sonra çocuğa *kendi inancı* sorulur: “Sence kedi nerede? Çalılıkların içinde mi (işaret et) yoksa... arabanın arkasında mı (işaret et)?”

Eğer çocuk “Çalılıklar” derse, “Evet bu iyi bir fikir. **Ama...** Ayşe kedisinin arabanın arkasında (işaret etme) olduğunu **düşünüyor**. Kedinin arabanın arkasında olduğunu düşünüyor.” denir.

Eğer çocuk “Arabanın arkasında” derse, “Evet bu iyi bir fikir. **Ama...** Ayşe kedisinin çalılıkların içinde (işaret etme) olduğunu **düşünüyor**. Kedinin çalılıkların içinde olduğunu **düşünüyor**.” diye cevap verilir.

Sonra *hedef soruya* geçilir: “Peki... Ayşe (Ayşe’yi işaret et) kedisini nerede **arayacak?** Çalılıkların içinde mi yoksa arabanın arkasında mı?”

Puanlama: Bu bölümdeki sorunun cevabının doğru olarak puanlanması için çocuğun *hedef soruyu kendi inaniş sorusuna* verdiği yanıtın tersi biçimde cevaplaması gerekmektedir.

4. İçerik Yanlış İnanış

Materyaller: Ön yüzünde görünür biçimde boya kalemleri resimleri olan standart bir boya kalemi kutusu. Kutunun içinden çıkacak bir yara bandı. Küçük bir erkek oyuncak bebek. Araştırmacı yeni oyunun materyallerini çıkarır: “ Şimdi ben sana başka bir şey göstereceğim. Burada bir kalem kutusu var.”

Araştırmacı boya kalemi kutusunu çocuğa gösterir: “ Sence bu kalem kutusunun içinde ne var?”

Bu soruya çocuğun “kalem” demesi için gerekirse yönlendirmede bulunulur. Örneğin birinci yönlendirmede araştırmacı “İçinde kalem olabilecek gibi mi görünüyor?” der. Çocuk yine de “kalem” demezse, ikinci yönlendirme yapılır, “Bu ne çeşit bir kutu? İçinde ne olmalı?” denir. Üçüncü yönlendirmede ise araştırmacı “Burada kalemler mi olmalı yoksa kitaplar mı?” diye sorar.

Çocuktan “kalem” cevabını aldıktan sonra araştırmacı heyecanla: “Hadi bakalım... Aaa içinde **bir yara bandı** varmış!”

Araştırmacı boya kalemi kutusunun içindeki yara bandını dışarı çıkarır ve çocuğun yara bandını gördüğünden emin olduktan sonra yara bandını tekrar boya kalemi kutusunun içine koyar ve kapağını kapatır.

Çocuğun boya kalemi kutusunun içinde yara bandı olduğunu öğrenip öğrenmediği kontrol edilir: “Peki... Ne vardı kutunun içinde?” (*kontrol sorusu*)

Eğer çocuk burada hata yaparsa, soruyu doğru yanıtlayana kadar kutunun içindeki yara bandı tekrar gösterilir.

Araştırmacı eline bebeği alır: “İşte Ali geldi (Ali’yi gösterir). Ali bu boya kalemi kutusunun içini **daha önce hiç görmedi.**”

Sonra *hedef soruya* geçilir. Araştırmacı “Peki... Ali kutunun içinde ne olduğunu **düşünür?** Boya kalemi mi yoksa bir yara bandı mı?” diye sorar. Çocuk yanıtlamazsa soru tekrarlanır. Çocuğun cevabından sonra *hafıza sorusuna* geçilir. Araştırmacı “Ali bu kutunun içini **gördü mü?**” diye sorar.

Puanlama: Bu bölümdeki sorunun cevabının doğru olarak puanlanması için çocuğun *hedef soruyu* “boya kalemi” olarak ve *hafıza sorusunu* (görme hakkında olan son soru) “hayır” olarak yanıtlaması gerekmektedir.

5. Dış Görünüş-Gerçekte Hissedilen Duygu

Materyaller: Arkası dönük olduğu için yüzü görünmeyen bir erkek çocuğun başının slayt sayfasında resmi (8x8 cm ebatlarına yakın). **Duygu Ölçeği:** Sırasıyla mutlu, normal (ne mutlu ne üzgün) ve üzgün ifadeleri olan üç basit yüz çizimi içeren slayt sayfası (yalnızca siyah-beyaz dairesel çizgilerden oluşan basit gözler, çizgi şeklinde ağızlar vb. içeren basit yüz çizimleri).

Oyuna hazırlık amacıyla araştırmacı duygu ölçeğini çocuğa gösterir: “Şimdi sana bir çocuk hakkında hikâye anlatacağım. Bu hikâyede, çocuk mutlu hissediyor olabilir (duygu ölçeği üzerinde işaret eder). Üzgün hissediyor olabilir (duygu ölçeği üzerinde işaret eder). Ya da ne mutlu ne üzgün sadece normal hissediyor olabilir (duygu ölçeği üzerinde işaret eder).”

Araştırmacı çocuğun yüzlerin hangi duyguları anlattığını öğrenip öğrenmediğini kontrol eder. Araştırmacı her ifadeyi teker teker sorar: “Şimdi bana gösterebilir misin? Bu yüzlerden hangisi üzgün? Hangisi mutlu? Hangisi ne mutlu ne üzgün, yani normal?”

Eğer çocuk hata yaparsa ön hazırlık baştan yapılır.

Araştırmacı: “Aferin sana... Tamam şimdi hikâyeye geçelim. Hikâyeyi anlattıktan sonra, sana çocuğun **içinde gerçekten nasıl hissettiğini** (kendi kalbine dokunarak) **ve** yüz olarak **nasil görüldüğünü** (kendi yanağına dokunarak) soracağım. İnsanın içinde nasıl hissettiği (kendi kalbine dokunarak) ile yüzünün dışarıdan nasıl görüldüğü (kendi yanağına dokunarak) aynı olabilir, ya da farklı olabilir.”

Araştırmacı hikâyeyi anlatmaya başlar: “Bu hikâye Mehmet hakkında (resmi göster). Mehmet’in teyzesi bir geziden yeni döndü. Geziye gitmeden önce Mehmet’e oyuncak bir araba getireceğine söz vermişti. **Fakat** oyuncak araba yerine Mehmet’e bir tişört aldı. Mehmet **tişörtleri sevmez** (yavaş hızda). Mehmet’in asıl istediği oyuncak bir araba. **Ama...** Mehmet’in **ne hissettiğini saklaması gerekiyor**. Çünkü eğer teyzesi Mehmet’in gerçek duygularını öğrenirse ona bir daha hediye almayacak.”

Çocuğun hikâyeyi anlayıp anlamadığını kontrol etmek için sorular sorulur: “Mehmet’in teyzesi ona ne aldı?” (*Hafıza Sorusu*)

Eğer çocuk “Tişört” cevabını verirse oyuna devam edilir. Eğer yanlış cevap verirse hikâye tekrar anlatılır.

Çocuk ilk soruya doğru cevap verdikten sonra ikinci soruya geçilir: “Mehmet’in teyzesi Mehmet’in gerçekte nasıl hissettiğini bilirse ne yapacak?” (*Hafıza sorusu*)

Eğer çocuk “Mehmet’e bir daha hediye almayacak” cevabını verirse oyuna devam edilir. Eğer çocuk yanlış cevap verirse, hikâye tekrar anlatılır.

Sorulara doğru cevap verilip hikâyenin anlaşıldığı görülünce oyuna devam edilir ve *hedef sorular* sorulur: “Peki... Teyzesi Mehmet’e tişörtü verdiğinde, Mehmet gerçekte **nasıl hissetti** (kendi kalbine dokunarak)? Mutlu mu, üzgün mü, yoksa ne mutlu ne üzgün, yani normal mi?” Araştırmacı bu soruyu sorarken herhangi bir duygu göstermez.

Çocuk soruyu cevaplamazsa soru tekrarlanır. Çocuk soruyu cevapladıktan sonra: “Peki... Teyzesi Mehmet’e tişörtü verdiğinde, Mehmet yüz ifadesi olarak **nasıl görünmeye çalıştı** (kendi yüzüne dokunarak)? Mutlu mu, üzgün mü, yoksa ne mutlu ne üzgün, yani normal mi?” Araştırmacı bu soruyu da sorarken herhangi bir duygu göstermez. Çocuk soruyu cevaplamazsa soru tekrar sorulur.

Puanlama: Puanlama son iki *hedef soruya* verilen yanıtlara dayanmaktadır. Bu bölümdeki sorunun cevabının doğru olarak puanlanabilmesi için çocuğun “*gerçekten hissedilen*” sorusuna olan yanıtının “*görünüş*” sorusuna verdiği yanıtın daha olumsuz olması gerekmektedir (örn. Gerçek his için üzgün ve görünüm için mutlu veya ne mutlu ne de üzgün; veya gerçek his için ne mutlu ne de üzgün ve görünüş için mutlu).

APPENDIX E

E.1 Gözlerden Zihin Okuma Testi Örnek Maddeler

Değerli katılımcımız, gelecek sorulardaki her göz seti için resimdeki insanın ne düşündüğünü veya hissettiğini en iyi tanımlayan sözcüğü işaretleyin. Birden fazla yanıtı uygun bulabilirsiniz ancak mutlaka bir sözcük seçmelisiniz. Size en uygun gelen sözcüğü seçiniz. Seçiminizi yapmadan önce dört seçeneği de okuyunuz. Testi mümkün olduğunca çabuk yapmaya çalışın ancak test için zaman tutulmayacaktır.

Alıştırma



- a. kıskanmış
- b. panik içinde
- c. küstah
- d. nefret dolu

1.



- a. şen
- b. rahatlatıcı
- c. rahatsız olmuş
- d. sıkılmış

2.



- a. ödü kopmuş
- b. üzgün
- c. küstah
- d. sinir olmuş

3.



- a. muzip
- b. telaşlı
- c. çok istekli
- d. ikna olmuş

4.



- a. muzip
- b. ısrarcı
- c. eğlenen
- d. gevşemiş

APPENDIX F

F.1 “Kurbağa neredesin?” Kitabı Örnek Sayfa



APPENDIX G

G.1 Çocuklarda Sosyal Anlayış Ölçeği

Genel Bilgiler:

Anketi doldurduğunuz tarih: Gün____ Ay____ Yıl____

Çalışmaya Katılan Çocuk ile İlgili Sorular:

1. Çocuğun adı ve soyadı: _____
2. Çocuğun doğum tarihi: Gün____ Ay____ Yıl____
3. Çocuğun cinsiyeti (lütfen işaretleyiniz): Erkek ☐ Kız ☐

Lütfen başlamadan önce dikkatlice okuyunuz.

Bu ankette çocukların günlük düşünce ve davranışlarını anlatan bazı ifadeler göreceksiniz. Sizden, bu araştırmada yer alan çocuğunuzun bu düşünce ve davranışları ne sıklıkta gösterdiğini belirtmenizi isteyeceğiz.

Ankette yer alan soruların doğru ya da yanlış cevapları yoktur. Çocuklar, bu ifadelerde sözü geçen beceri ve davranışlar bakımından birbirlerinden farklılık gösterebilmektedir. Bizim amacımız bu farklılıkları daha iyi anlamaktır.

Soruları cevaplarken içten ve dürüst olmanız değerlendirmenin doğru yapılabilmesi için çok önemlidir. Bu sebeple tüm soruları eksiksiz cevaplandırırdığınızdan lütfen emin olunuz.

Ankette yer alan her bir ifadeyi dikkatlice okuyunuz ve söz konusu davranışı çocuğunuzun ne sıklıkla yaptığını işaretleyiniz.

Eğer soruda yer alan ifade ile ilgili **gerçekten hiçbir fikriniz yoksa, “Bilmiyorum” (B)** şikkını işaretleyebilirsiniz. Ancak çok gerekli değilse bu şikkı tercih etmeyiniz.

Teşekkür ederiz.

Hiçbir zaman	Bazen	Sık sık	Her zaman	Bilmiyorum
1	2	3	4	B

Çocuğum..	Hiçbir zama n	Bazen	Sı k sık	Her zaman	Bilmiyoru m
1. İnsanların istediği veya sevdiği şeylerin farklılıkları hakkında konuşur. Örneğin: “Sen çay seversin, ama ben meyve suyu severim.” der.	1	2	3	4	B
2. Diğer insanların duygularını anlamaya çalışır. Örneğin: Neden ağladığınızı öğrenmek ister.	1	2	3	4	B
3. Belirsizlik anlatan kelimeler kullanır. Örneğin: “Belki oyuncağım odamdadır.”, “Ayakkabılarım dışarıda olabilir.” der.	1	2	3	4	B
4. Birinin ona sataştığını veya onunla dalga geçtiğini fark eder.	1	2	3	4	B
5. Kendisinin gördüğü bir nesneyi, ters yöne bakıyor olsanız bile sizin de görebildiğinizi düşünür.	1	2	3	4	B
6. Başkalarını oyuna getirmekte iyidir. Örneğin: Eli aslında boşken, elinde bir şey saklıyormuş gibi yapar.	1	2	3	4	B
7. Uzman kişilerin diğer insanlara göre kendi alanlarında daha bilgili olduklarının farkındadır. Örneğin: Doktorların hastalıkları tedavi etmede diğer insanlardan daha bilgili olduklarını anlar.	1	2	3	4	B
8. İnsanların nasıl hissettiği hakkında konuşur. Örneğin: “Ben mutluyum.”, “Yasemin kızgın.” gibi cümleler kullanır.	1	2	3	4	B
9. İnsanların istediği veya sevdiği şeyler hakkında konuşur. Örneğin: “Ayça kurabiye sever.”, “Uğur eve gitmek istiyor.” der.	1	2	3	4	B
10. İsteklerin her zaman gerçekleşmediğinin farkındadır.	1	2	3	4	B

Çocuğum..	Hiçbir zaman	Bazen	Sık sık	Her zaman	Bilmiyorum
11. Bir şeyleri nereden öğrendiğini size anlatabilir. Örneğin: “Bana Aydın söyledi.”, “Televizyondan öğrendim.” gibi cümleler kullanır.	1	2	3	4	B
12. Ciddi misiniz, yoksa yalnızca şaka mı yapıyorsunuz, anlamakta zorluk çeker.	1	2	3	4	B
13. Biri bir şey istiyorsa, o kişinin büyük ihtimalle istediğini almak için uğraşacağını bilir.	1	2	3	4	B
14. Saklambaç oyununda iyidir. Örneğin: İyi saklanır; saklanınca yerini belli edebilecek sesler çıkarmaz, onu bulmak zor olur.	1	2	3	4	B
15. İnsanların gördüğü veya duyduğu şeyler hakkında konuşur. Örneğin: “Orada bir köpek görüyorum.”, “Babam telefonun çaldığını duydu.” der.	1	2	3	4	B
16. İnsanların düşündüğü veya inandığı şeyler hakkında konuşur. Örneğin: “Kardeşimin bana o oyuncacı vermeyeceğini düşünüyorum.”, “Senin doğru söylediğine inanmıyorum.” gibi cümleler kullanır.	1	2	3	4	B
17. Kendi düşünceleri ile başkalarının düşünceleri arasındaki farklar hakkında konuşur. Örneğin: “Sen bunun terlik olduğunu düşünüyorsun ama bence bu bir ayakkabı.” der.	1	2	3	4	B
18. Kendi düşüncelerinin zamanla nasıl değiştiği hakkında konuşur. Örneğin: “Eskiden bu çizgi filmin korkunç olduğunu düşünürdüm ama şimdi komik olduğunu düşünüyorum.” der.	1	2	3	4	B
19. İnsanların yanlış düşünceleri hakkında konuşur. Örneğin: “Annem geliyor sanmıştım ama aslında gelen babamış.” der.	1	2	3	4	B
20. Eğer kötü bir şey yaparsa başkalarının sinirlenebileceğini bilir.	1	2	3	4	B

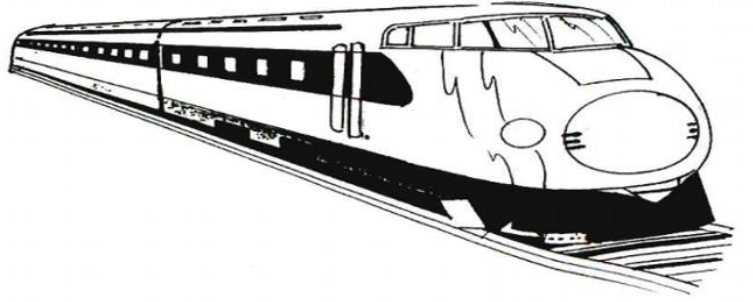
Çocuğum...	Hiçbir zaman	Bazen	Sık sık	Her zaman	Bilmiyorum
21. Birini bilerek incitmenin, onu yanlışlıkla incitmekten daha kötü olduğunu anlar.	1	2	3	4	B
22. İnsanların niyetleri hakkında konuşur. Örneğin: “Bunu bilerek yaptı.”, “Onu dökmek istememiştim.”, “Deniz kediye yakalamaya çalışıyor.” gibi cümleler kullanır.	1	2	3	4	B
23. Bir şeyi istemekle, o şeye ihtiyacı olmanın farklı olduğunu bilir.	1	2	3	4	B
24. İstemediği bir hediye alınca, onu veren kişinin duygularını incitmemek için hediyeyi sevmiş gibi yapar.	1	2	3	4	B
25. Telefonla konuşurken karşıdaki kişi onu gerçekten görebiliyormuş gibi davranır. Örneğin: Telefonla konuşurken karşısındakinin onun kıyafetini görebildiğini düşünür.	1	2	3	4	B
26. Bir şeyi isteyerek ya da yanlışlıkla yapmak arasındaki farkı anlar. Örneğin: Birinin oyuncağı kasıtlı olarak alması ile yanlışlıkla alması arasındaki farkı bilir.	1	2	3	4	B
27. Farklı insanların aynı şey hakkında farklı duyguları olabileceğini anlar. Örneğin: “Aras köpek sever ama Defne köpekten korkar.” der.	1	2	3	4	B
28. Öğretmek ve öğrenmek hakkında konuşur. Örneğin: “Babam bana bu oyunu öğretti”; “Anaokulunda bu şarkıyı öğrendim.” der.	1	2	3	4	B
29. İnsanların aynı davranışı farklı sebeplerle yapabileceğini anlar. Örneğin: Top, oyun oynama amacıyla da atılabilir, birinin canını yakmak amacıyla da atılabilir.	1	2	3	4	B

Çocuğum..	Hiçbir zaman	Bazen	Sık sık	Her zaman	Bilmiyorum
30. Başkalarının isteklerini dikkate alır. Örneğin: Oyun oynarken sırasını bekler, oyuncakları paylaşır, hangi oyunu oynayacakları hakkında diğer çocuklarla uzlaşır.	1	2	3	4	B
31. Diğer insanları, düşüncelerinin yanlış olduğu konusunda ikna etmeye çalışır. Örneğin: “Hayır, öyle değil...” gibi cümleler kurar.	1	2	3	4	B
32. Bir şeyin nasıl görüldüğü ve aslında ne olduğu arasındaki fark hakkında konuşur. Örneğin: “Bu bir şekere benziyor ama aslında bir boncuk.” der.	1	2	3	4	B
33. Çelişen duygular hakkında konuşur. Örneğin: “Tatile gideceğim için mutluyum ama arkadaşlarımdan ayrılacağım için üzgünüm.” der.	1	2	3	4	B
34. İnsanların dikkatini bir şeye çekmekte iyidir. Örneğin: İnsanların bir şeye bakmasını sağlamak için o şeye işaret eder.	1	2	3	4	B
35 . Yalan söylediğinde, yalanının anlaşılması kolay olur. Örneğin: Elleri hala kirli olduğu halde “Ellerimi yıkadım.” der.	1	2	3	4	B
36. Amaçlanan şey ve ortaya çıkan sonuç arasındaki fark hakkında konuşur. Örneğin: “Babam kapıyı açmayı denedi ama kapı kilitliydi, açamadı.” der.	1	2	3	4	B
37. Kendinden küçük çocuklara bir şeyleri açıklamakta iyidir.	1	2	3	4	B
38. Yalan söylemenin diğer insanları yanıltabileceğini anlar.	1	2	3	4	B
39. Kendi gözleri kapalı olduğunda, başkalarının onu göremeyeceğini düşünür.	1	2	3	4	B

Çocuğum..	Hiçbir zaman	Bazen	Sık sık	Her zaman	Bilmiyorum
40. İnsanların ne istediği ile gerçekte ne elde ettiği arasındaki fark hakkında konuşur. Örneğin: “Rüya hediye olarak bir köpek yavrusu istemişti ama bir kedi yavrusu aldı.” der.	1	2	3	4	B
41. Ses tonunuzdan ya da yüz ifadenizden nasıl hissettiğinizi anlamakta zorlanır. Örneğin: Kızgın yüz ifadesi ile üzgün yüz ifadesi arasındaki farkı söylemekte güçlük çeker.	1	2	3	4	B
42. İnsanların neyi bildiği veya neyi bilmediği hakkında konuşur. Örneğin: “O çocuğun ismini biliyorum.”; “Babam oyuncağın yerini bilmiyor.” gibi cümleler kullanır.	1	2	3	4	B

APPENDIX H

H.1 TİFALDİ İfade Edici Dil Kelime Alt Testi Örnek Resimler



CURRICULUM VITAE

Personal Information

Name and surname: Nursena Koç

Academic Background

2014 - 2019: Guidance and Psychological Counseling, Bogazici University, Bachelor's Degree (GPA:3.46/4.00)

2020 - 2023: Psychological Sciences (Developmental Psychology), Istanbul Kadir Has University, Master's Degree (GPA:4.00/4.00)

Foreign Languages: English

Work Experience

11.2021 – 02.2022: Assistant Specialist, Scientific Studies, Turkish Green Crescent Society

Publications and Presentations

Uzundag, B. A. & **Koc, N.** (2023, August). *Attention sharing helps attention focusing?: Relations between infants' focused attention and joint attention with caregivers*. Talk session accepted to be presented at the 8th Lancaster Conference on Infant and Early Child Development, Lancaster, UK.

Koc, N. & Uzundag, B. A. (2023, August). "Perhaps the frog has gone to the lake": *Mothers' mental state talk about certainty mediates the relationship between mothers' and children's theory of mind*. Poster session accepted to be presented at the 8th Lancaster Conference on Infant and Early Child Development, Lancaster, UK.

Koc, N. & Uzundag, B. A. (2023, January). *From mind to mind: The relation between mothers' and children's theory of mind*. Poster session presented at the 13th Budapest CEU Conference on Cognitive Development, Budapest, Hungary.

Koc, N. & Uzundag, B. A. (2022, September). *Are mothers' and children's theory of mind skills related to each other?* Poster session presented at the 3rd Developmental Psychology Symposium, Istanbul, Turkey.

Kessafoglu, D., Altundal, M. N., **Koc, N.**, Yildiz, E., Uzundag, B. A. (2022, September). *Correlates of young children's screen time*. Poster session presented at the 3rd Developmental Psychology Symposium, Istanbul, Turkey.

Kessafoglu, D., Altundal, M. N., **Koc, N.**, Yildiz, E., Uzundag, B. A. (2022, August). *Correlates of young children's screen time*. Poster session presented at the 7th Lancaster Conference on Infant and Early Child Development, Lancaster, UK.