MATERNAL REGULATION OF TODDLERS' EMOTIONS IN A DELAY OF GRATIFICATION TASK

NURAY MUSTAFAOĞLU

BOĞAZİÇİ UNIVERSITY

2013

MATERNAL REGULATION OF TODDLERS' EMOTIONS IN A DELAY OF GRATIFICATION TASK

Thesis submitted to the

Institute for Graduate Studies in the Social Sciences

in partial fulfillment of the requirements for the degree of

Master of Arts
in
Clinical Psychology

by
Nuray Mustafaoğlu

Boğaziçi University

2013

Thesis Abstract

Nuray Mustafaoğlu "Maternal Regulation of Toddlers' Emotions in Delay of Gratification Task"

The present study investigated the association between Turkish mothers' regulation strategies and their toddlers' desire-driven behaviors as well as affect during a delay task. Sixty-two mothers and their toddlers (31 boys, 31 girls; between 19- to 34-month old) participated in our laboratory observations. Children's behaviors and affects and maternal regulatory strategies were independently coded in 5-sec intervals during the 4-minute-task. The relationships between maternal regulation strategies and toddler affect as well as behavior have been examined. Consistent with our hypotheses, Turkish mothers mostly preferred distractive strategies, which were correlated with child compliance during the task. Children's tendency to non-compliant behaviors was associated with maternal verbal explanations (i.e. reasoning and bargaining), non-supportive strategies (i.e. statements that return child's attention to delay object, physical refraining), and maternal permissive approach (i.e. giving in to hold and eat the delay object). Moreover, maternal verbal strategies, restriction and physical comfort were related to children's negative emotionality (i.e. anger and sadness). Surprisingly, children whose mothers ignored them during the task, were less likely tend to reach for the delay object and express their negative emotions. In addition, the results of the study confirmed that emotional reactions of mothers and their children's influence each other. Findings were discussed in the light of previous literature.

Tez Özeti

Nuray Mustafaoğlu "Haz Erteleme Durumunda Çocuğun Duygu Düzenlemesinde Anne Stratejilerinin Rolü"

Bu çalışmada, Türk annelerinin kullandığı duygu düzenleme yöntemlerinin, 2 yaş çocuklarının arzu odaklı davranışların ertelenmesi sırasındaki davranış ve duygularıyla arasındaki ilişki araştırılmıştır. Altmış iki anne ve çocuk (31 erkek, 31 kız; 19 – 34 ay yaş aralığında) çalışmamız kapsamında laboratuar gözlemimize katılmıştır. Çocukların davranışları ve annelerin düzenleyici stratejileri, bağımsız araştırmacılar tarafından 5-saniye aralıklarla kodlanmıştır. Anne stratejileri ve çocukların tepkileri arasındaki ilişki verileri, korelasyon analizleriyle değerlendirilmiştir. Bizim tahminimizle uyumlu olarak, Türk anneleri çoğunlukla çocuklarının etkinlikteki bekleme başarısını sağlamak için en etkin olan dikkat dağıtma yöntemlerini kullandılar. Çocukların arzu etkin davranışlar sergileme eğilimi, annenin sözlü açıklamaları (yani neden açıklama ve pazarlık yapma), destekleyici olmayan stratejileri (çocuğun dikkatini beklenen nesneye yöneltme, fiziksel engelleme) ve izin verici tavrı (yani beklenen objeyi tutmaya ve yemeğe izin vermek) ile ilişkili bulunmuştur. Ayrıca, annelerin sözlü stratejileri, fiziksel engelleme ve fiziksel rahatlatma stratejileri çocukların olumsuz duygularını (öfke ve üzüntü) göstermesi ile ilişkili bulunmuştur. Şaşırtıcı bir şekilde, bekleme sürecinde anneleri tarafından görmezden gelinen çocukların, beklenen nesneye ulaşma eğilimi ve olumsuz duygulanımları daha az gözlenmiştir. Buna ek olarak, çalışmanın sonuçları anneler ve çocuklarının duygusal reaksiyonlarının birbirlerini etkilediğini doğrulamıştır. Araştırmanın bulguları literatür ışığında tartışılmıştır.

ACKNOWLEDGMENTS

I would like to thank my thesis advisor, Assoc. Prof. Feyza Çorapçı who initially offered the topic, and supported and guided me through the process. I am grateful to her for her contributions, attention and patience. I have learned a lot from her way of academic working.

I would also express my gratitude to the members of my thesis committee: Assis. Prof. Hande Sart and Dr. Nur Yeniçeri for their positive attention and careful examination of the project.

I want to acknowledge all my teachers and professors from primary school to graduate program, who provided me with background to complete my thesis, and Virna Gülzari for her supervision in my clinical work. I will be always thankful them for their productive labour.

I would like to express my thanks to undergraduate students who took part in this study. Moreover, I owe thanks to all children and their mothers who participated in the study.

I would like to dedicate my thesis to my parents who always stood beside me in everything I did. I express my deepest gratitude to my family and I owe my thanks particularly to my father Salih Mustafaoğlu supported me both morally and financially, my mother Hatice Mustafaoğlu supported me with her all heart and prays, and my twin sister and my best friend Nur Mustafaoğlu was always with me patiently at every phase of my study. I especially want to thank my fiance Yavuz Çiçek whose supportiveness has left me like he is my back, whatever might come our way. It is very important for me to thank all friends around me to for their continuous support and understanding during my educational life.

To my family,

CONTENTS

CHAPTER 1

INTRODUCTION

Emotion regulation is a crucial developmental achievement in social-emotional development, first in infancy and toddlerhood as well as throughout the lifespan (Cole, Martin, & Dennis, 2004). There is growing evidence that emotion regulation competence in early childhood has been associated with later affective and personality development (Grolnick, Bridges, & Connell, 1996; Kopp, 1989; Mischel, Shoda, & Peake, 1988; Mischel, Shoda, & Rodriguez, 1989); cognitive performance (Sarason, 1984 cited in Diener & Mangelsdorf, 1999), less externalizing problem behaviors (Calkins & Dedmon, 2000; Gilliom, Shaw, Beck, Schonberg, & Lukon, 2002; Rubin, Coplan, Fox, & Calkins, 1995; Spinrad & Stifter, 2006; Supplee, Skuban, Shaw, & Prout, 2009) and behavioral control (Calkins & Fox, 2002). Empirical studies indicate that children who have difficulty regulating negative emotions such as anger, sadness and fear are at increased risk for behavior problems, especially in the context of a non-supportive family environment (Calkins & Dedmon, 2000; Gilliom, et al., 2002; Rubin, et al., 1995; Supplee, et al., 2009). Hence, it is of particular importance to identify those caregiving behaviors that predict individual differences in emotional regulation during early childhood (Fabes, Leonard, Kupanoff, & Martin, 2001; Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002; Rodriguez et al., 2005; Spinrad, Stifter, Donelan-McCall, & Turner, 2004).

The present study focuses on maternal regulation of toddlers' negative affect during a food delay task based on direct behavioral observations in a research laboratory setting. Following the literature (e.g., Calkins & Johnson, 1998; Gilliom

et al, 2002; Grolnick et al., 1996; Kochanska & Aksan, 1995), participant children were given an attractive food item and were asked to wait for a certain amount of time. In addition to the maternal regulatory behaviors, individual differences in toddlers' ability to delay gratification (i.e., frequency to touch cookie) and affect during this task have been examined in relation to the maternal regulatory strategies. A better understanding of the factors that influence toddlers' emotion regulation and delay of gratification would help caregivers in effective emotion socialization.

Emotion Regulation

Emotion regulation refers to "the intrinsic and extrinsic processes involved in initiating, maintaining or modulating emotions in relation to personal goals" (Thompson, 1994, pp.27-28). The ability to regulate emotions (i.e., modulation of affect intensity, duration, and lability) requires an awareness of the cognitive, emotional, and social demands of a particular situation (Raikes, Robinson, Bradley, Raikes, & Ayoub, 2007). Moreover, this process includes modulating both negative and positive emotions (Cole et al., 2004; Eisenberg & Spinrad, 2004; Grolnick et al., 1996; Gross & Thompson, 2007; Kopp, 1989; Spinrad, et al., 2004).

During infancy and early childhood, children gradually acquire the necessary self-regulation skills and strategies that enable them to cope with a variety of developmental challenges (Calkins, 1994; Kopp, 1982, 1989). This improvement can be explained by intrinsic processes (i.e. physiological and neurobiological growth, cognitive and psychological development, temperament) and extrinsic (i.e. socialization influences by parents) processes (Kopp, 1982; Kopp, 1989; Gross & Thompson, 2007). Firstly, as related to physical development, child's physical

strength and mobility can positively influence the development of emotion regulation given that the physical maturation facilitates the control of motor inhibitory abilities and voluntarily behaviors (Kopp, 1989; Vaughn, Kopp, & Krakow, 1984). The development of emotion regulation also depends on neurobiological system, specifically on frontal lobe functions. More specifically, prefrontal lobe functions associated with goal settings, attentional and inhibitory control, planning, organization, and self-monitoring are fundamental elements for behavioral and emotional control (Brownell & Kopp, 2007). The regulatory power of attention begins to emerge at the end of the first year and acts as a central process in the emergence of emotion regulation given that the ability to shift and focus attention provides control over impulsive behavior (Fox & Calkins, 2003; Kochanska, Coy, & Murray, 2001).

Secondly, cognitive processes such as children's growing language competency also play a major role in facilitating emotion regulation (Fox & Calkins, 2003). The development of language skills also enables children to use self-regulatory inner speech (Kopp, 1989), and facilitates communication with others, which in turn provides significant opportunities to learn about emotions and emotion regulation strategies (Brownell & Kopp, 2007). For the first years of life, children begin to gain control over impulses and actions, then gradually, they begin to engage in more executive or cognitive control of thoughts and actions by their cognitive competence as well as psychological competence such as self-awareness and interpersonal understanding (Brownell & Kopp, 2007).

Individual differences in dimensions of temperament can be considered as another important factor in emotion regulation development considering the individual differences in reactivity (i.e., intensity, duration of affective responses)

and self-regulation (Rothbart, 1989; Rothbart & Jones, 1998). Dimensions of temperament such as adaptability, soothability, persistence, arousability, effortful or executive attention act to have an influence on emotion regulation (Eisenberg & Spinrad, 2004; Rothbart & Jones, 1998). It is commonly agreed that temperament has biological bases and is influenced by cognitive development and socialization experiences (Rothbart, 1989). Hence, individual self-regulation tendencies both influence and influenced by temperament (Kochanska & Aksan, 1995; Rothbart, Ahadi & Evans, 2000).

Last but not the least, research evidence clearly supports that extrinsic processes, namely parents' emotion expression and modeling, as well as their specific interventions in emotionally charged situations, that also foster children's emotion regulation competence (Calkins & Fox, 2002; Eisenberg, Fabes, & Murphy, 1996; Fabes et al., 2001; Fabes et al., 2002; Fox & Calkins, 2003). This body of research indicates that children gradually internalize parental guidelines and social values, which allow them the effective use of more differentiated and self-initiated emotion regulatory skills guided by parental interactions and cultural norms (Calkins & Dedmon, 2000; Eisenberg & Spinrad, 2004; Fox & Calkins, 2003; Gross, 2002; Kopp, 1982; Kopp 1989).

The ability to delay gratification depends heavily on emotion regulation competence. Specifically, children's skills and strategies that serve to manage modulate inhibit, and enhance emotions help them resist immediate gratification (Kopp, 1982, 1989; Thompson, 1994). Longitudinal studies illustrate that the ability to delay gratification in childhood has been related to later academic, cognitive, and social competencies (Mischel et al., 1989; Shoda, Mischel, & Peake, 1990). Preschoolers who were able to delay gratification longer have been significantly

better at academic achievement and have higher SAT scores (Walter, Shoda, & Rodriguez 1989); and toddler who were better to control emotion in stressful situations at 3 years old also showed better preschool adaptation (Shields, Dickstein, Seifer, Magee, & Spritz, 2001). They were also better able to plan, think ahead, reason, and cope with stress in adolescence (Mischel et. al, 1989; Mischel et al., 1988). It was also stated that toddlers, who had difficulty managing their frustration in laboratory task, were less cooperative and more confrontational in interactions with other children (Calkins, Gill, Johnson, & Smith, 1999). Furthermore, more recent follow-up studies indicated the delay of gratification ability in childhood predicted outcomes even in adulthood such as self-esteem, coping, and even substance use (Ayduk, Mendoza-Denton, Mischel, Downey, Peake, & Rodriguez, 2000).

Extrinsic Processes: Maternal Emotion Socialization

Children begin to use self-initiated strategies such as self-soothing, help-seeking, approach behaviors, gaze aversion, and distraction early in the first year of life (Calkins, et al., 1999; Calkins & Fox, 2002; Diener & Mangelsdorf, 1999; Fox & Calkins, 2003; Rubin et al., 1995; Spinrad et al., 2004). As noted above, emotion regulation competence arises not only from the developing self-regulatory skills but also from the management of emotions by other people. Specifically, the development of emotion regulation in infants and toddlers is also profoundly influenced by caregivers. Parents' responses to the emotional expression of their offspring as well as the overall security of their relationship are important relational influences on the development of emotional regulation in early childhood (Brownell

& Kopp, 2007). Moreover, emotion socialization is shaped by the parenting styles since the process of emotion socialization is embedded in the affective relationship between parents and children (Chan, Bowes & Wyver, 2009; Thompson & Goodvin, 2007).

The process of emotional socialization involves reading infants' and toddlers' emotional signals, providing appropriate stimulation, modulating arousal, and reciprocating as well as reinforcing infant reactions when necessary (Cole, et al., 2004). It is stated that parental positive guidance is associated with children's constructive coping with frustration (Calkins & Johnson, 1998). Parents also use some techniques such as modeling, reinforcement, distraction, control of the environment, and verbal instruction to control and guide their children's emotional experiences (Thompson, 1994; Thompson & Meyer, 2007). Toddlers gradually internalize these maternal techniques as part of their autonomous regulation of emotion (Spinrad, et al., 2004).

In previous research, maternal responses to children's distress and individual differences in children's delay of gratification ability have been examined with toddlers (Grolnick, et al., 1996; Kochanska, et al., 2001; Putnam, Spritz, & Stifter, 2002; Rha, 2000; Vaughn, et al., 1984), preschoolers (Kochanska, Philibert, & Barry, 2009; Rodriguez, et al., 2005; Sethi, Mischel, Shoda, & Rodriguez, 2000) and older age groups (Silverman, 2003) using a delay of food reward (Calkins & Johnson, 1998; Calkins & Dedmon, 2000; Grolnick, et al., 1996; Keller et al., 2004; Kochanska, Murray, & Harlan, 2000; Vaughn, et al., 1984) or a delay of gift delivery (Grolnick, et al., 1996; Kochanska et al., 2000; Kochanska et al., 2001; Putnam et al., 2002; Rha, 2000; Vaughn et al., 1984).

Of particular interest to the present study is the relevant literature on mothers of toddlers during a delay of gratification task. We focused on maternal behaviors that regulate children's affect during a delay task because children's ability to delay gratification, which requires the control of impulses and resisting immediate temptation, has been conceptualized as an essential component of affective self-regulation capacity (Kopp, 1982; Lecuyer & Houck, 2006; Mischel et al., 1988; Putnam et al., 2002; Rha, 2000). The next section will review studies that investigated maternal regulatory behaviors during such delay tasks.

Maternal Emotion Regulation Strategies During Delay of Gratification Tasks

There are two groups of studies that investigated the link between maternal behaviors and children's delay ability. The first group of studies has assessed children's delay ability in the laboratory while the general parenting practices were assessed by questionnaires completed by the mothers. The second group of studies relied on direct behavioral observations in a research laboratory to collect data on children's delay behavior as well as data on maternal behaviors during a delay of gratification paradigm.

Of particular interest to the present study are the studies in the second group which relied on observational methodology to investigate the nature of the parent-child interactions in an emotionally arousing delay task (Calkins et al., 1999; Gilliom et al., 2002; Kochanska et al., 2001; Purnam et al., 2002). These studies have delineated a number of maternal strategies. The strategies described in previous studies can be organized in six categories. The first category pertains to the distractive strategies that includes *distraction*, i.e., shifting child's attention to

different things (Jahromi, Putnam, & Stifter, 2004; Lecuyer & Houck, 2006; Mirabile, Scaramella, Sohr-Preston, & Robinson, 2009; Morris et al., 2011; Putnam, et al., 2002; Spinrad, et al., 2004), *removing cookie out of child sight*, and *cognitive reframing* which refers to mother's interpretation of the situation differently (Morris et al., 2011).

The second category is supportive strategies that includes *providing physical comfort* such as holding child's hand, stroking child's hair, hugging or kissing child, tickling, or picking up the child to give comfort (Calkins & Johnson, 1998*;* Jahromi et al., 2004; Lecuyer & Houck, 2006; Mirabile et al., 2009; Morris et al., 2011), *reassurance* which can be considered as verbal soothing (Grolnick, Kurowski, McMenamy, Rivkin, & Bridges, 1998), *expressive encouragement* of emotions (Mirabile et al., 2009), and *positive verbal statement* such as mothers' praises for child behavior.

The third category includes less distractive verbal strategies such as reasoning, bargaining, and rule statement with positive, negative and suggestive commands. *Reasoning* refers to explanations for compliance based on norms, values, or consequences (Lecuyer & Houck, 2006; Spinrad et al., 2004; Putnam et al., 2002); while *bargaining* refers to negotiations with the child based on the child's wants (Spinrad et al., 2004; Putnam et al., 2002). *Rule statement* refers to explicit verbal statements that specify the desired action in positive, negative or suggestive sentences (Putnam et al., 2002)

The fourth category consists of non-supportive strategies. Those strategies include *returning child's attention* to the frustrating object (Gilliom et al., 2002), *physical refraining* of the child from the desired object (Calkins& Johnson, 1998; Putnam et al., 2002), *punitive reactions* such as scolding and threatening, *minimizing*

child's emotional responses (Gilliom et al., 2002; Mirabile et al., 2009), and *ignoring* the child behaviors (Spinrad & Stifter, 2006). The fifth category includes passive strategies such as *giving in to child's touching and eating the cookie*, and the last category pertains to mothers' positive and negative emotional reactions to children expressed emotions (Fabes et al., 2001).

In the studies cited above, maternal distracting strategies were related to children's affect and delay of gratification ability. Specifically, children who did touch the toy were more likely to have mothers who used non-distracting strategies (Metcalfe & Mischel, 1990; Putnam et al., 2002). Alternatively, children whose mothers were able to shift their children's attention away from the attractive task object showed longer delay latencies (Gilliom et al., 2002; Lecuyer & Houck, 2006; Putnam et al., 2002). Mothers' active involvement in the delay task (active interaction with children) was associated with more positive child affect and less negative child affect (anger and fear) expression (Diener & Mangelsdorf, 1999).

There is also evidence that mothers who were unresponsive to their children (i.e., inattentive, expressionless, distant, lacking warmth, non-involved) were more likely to have children with high levels of negative affect during the delay task (Grolnick et al., 1996; Rodriguez et al., 2005). Maternal negative control (i.e., including physical control such as restricting child's movement, pulling, and pushing) and negative verbal control (i.e., threats, anger expression) have been related to toddlers' expression of distress in the delay task (Calkins & Johnson, 1998; Gilliom et al., 2002).

Recently, there is a growing interest how parents' guidance of emotion regulation is affected by the cultural norms (Calkins & Johnson, 1998; Kopp, 1989; Spinrad et al., 2004). A number of researchers have argued that caregivers teach their children emotion expression and regulation skills according to their cultural expectations, norm and values (Cole, Tamang, & Shrestha, 2006; Cole & Dennis, 2009; Friedlmeier & Trommsdorff, 1999; Keller et al., 2004). It is stated that the emotional interactions between parents and children are situated within the cultural ecology that they live in. In other words, emotion socialization practices are embedded in parenting goals, techniques and styles which are shaped by the culture (Holden & Edwards, 1989).

Available reviews (e.g., Friedlmeier, Corapci, & Cole, 2011) indicate that cultural differences in parental emotion socialization have been studied in a few studies. The few available studies suggest that Western mothers were more likely endorse supportive responses such as acknowledging child's emotions and encouraging the expression of emotion as well as scaffolding the child to solve the problem than minimizing children's emotions (Raval & Martini, 2009; Wang, 2006). On the other hand, Indian, Chinese and Hong Kong mothers were more likely to emphasize proper conduct in socializing their children's negative emotions, and they also endorse teaching emotion display rules as one of the most commonly used strategies (Chan et al., 2009; Raval & Martini, 2009; Wang, 2006).

A review of Turkish studies on emotion socialization of preschoolers (Çorapçı, 2012) has revealed that both supportive (e.g., comforting, distracting, reassuring) and non-supportive (i.e., punitive, condescending) emotion socialization responses,

which were detected in the Western literature, have also been exhibited by Turkish mothers. However, it was pointed out that teaching the child appropriate behavior in everyday life also seems be an important component of emotional socialization for Turkish mothers. Expressive encouragement was also one of the less emphasized responses by Turkish mothers.

To date, maternal emotion regulation strategies with toddlers and their link to toddlers' affect have not been investigated in the Turkish literature. The present study was fill in a gap in the literature by examining Turkish mothers' strategies in managing child distress during a delay task.

Hypotheses of the Present Study

The goal of the present study was to examine how Turkish mothers' regulation strategies are related to their toddlers' affect and behavior during a food delay task. We expected to observe distractive (i.e., distraction, removing cookie), supportive (physical comfort, reassurance), and less distractive verbal strategies (reasoning, bargaining, returning child's attention to cookie, positive, negative and suggestive rule statements), non-supportive (i.e., restraining, ignoring), and passive (giving in to touch and eat cookie) strategies and as well maternal negative and positive emotional responses as documented in previous studies.

Secondly, toddlers' observed affect and behaviors towards the wait object during this delay of gratification task have been examined in relation to maternal regulation strategies. In light of previous research, we expected that maternal use of *distraction* would be correlated with less negative affect in children, less frequency of touching the cookie, and longer delay time to touch the cookie. Alternatively, we

expected that *negative maternal emotionality* and *non-supportive strategies* (i.e., restraining, ignoring) would be positively related to child's expression of distress and noncompliance in our delay task. There is little available previous research on the links between less distractive maternal responses such as bargaining and reassurance and child affect as well as behavior. Hence, no specific predictions have been made between such maternal responses and child outcomes.

CHAPTER 2

METHOD

Participants

The participants in this investigation included 62 mother-toddler pairs (31 boys, 31 girls) who were involved in a longitudinal study investigating cross-cultural differences on emotion regulation. At the time of observation, toddlers had a mean age of 25.6 months (SD = 3.8; range = 19 to 34 months) and mothers had a mean age of 33.6 years (SD = 3.6; range = 28 to 42 years). Since seven of the mothers have not returned their questionnaires, data from 55 families have been used in the analyses of the present study.

All of the participant mothers were married, and they were living with their toddlers' fathers. Families from upper-middle class socioeconomic background as indicated by maternal education and family income were recruited for the study. As seen in Table 1 (See in Appendix A), 85% percent of the mothers had university or higher education level, and 85.5% were half- or full-time working. Seventy-nine percent of the children were first born. Eighty-seven percent of the participant mothers reported their monthly family income as above 3000 TL.

The recruitment of the families has been accomplished through sending advertisements and flyers to mother-toddler playgroups and through postings on the websites relevant to mothers of toddlers.

Measures

Sociodemographic Questionnaire

Mothers completed a socio-demographic questionnaire that includes questions about their current marital and working status, monthly income, and education levels as well as their child's age and day care status (See in Appendix G).

Design and Procedure

This study used data from a larger project on cultural differences on toddlers' emotion regulation and maternal regulatory strategies. Primarily the necessary permission was obtained from INAREK (İnsan Araştırmaları Kurumsal Değerlendirme Kurulu) the ethical board of Boğaziçi University.

Families were invited to the Boğaziçi University Child Development Laboratory for an assessment during an approximately one and a half hour visit. During this assessment, there were activities involving mother-child dyadic interactions such as free play warm-up, puzzle task, coloring, food delay, and a snack break. All the interactions in the laboratory have been video-recorded for later coding.

Delay of Gratification Procedure

The current study has only focused on the delay of food gratification procedure. Emotion regulation strategies of mothers as well as toddler's affect and behaviors

were videotaped during this 4-minute-long delay of gratification task, in which children were asked to wait for a cookie.

Prior to the task, the experimenter removed all toys or distractive objects out of the child sight, and the mother and her toddler were seated at a table. In the task, the mother was asked to complete a questionnaire to keep her busy, and she was asked to prevent her child from eating the cookie before the experimenter comes back. The experimenter informed the child that he/she can eat the cookie after his/her mother had finished her work on the questionnaire and placed an attractive cookie on the table for the child. The experimenter left the room for four minutes, and after four minutes, when she came back, the child was allowed to eat his/her cookie.

Coding of Mother and Child Affect as well as Behavior

The child and mother affect as well as behaviors during this delay of gratification task were coded by independent coding teams. Coders of child behaviors and affect were blind to coding of mother behaviors, and vice versa. The coding was conducted in 5-second intervals across the 4-minute task.

Mother's Affective and Behavioral Responses

Categories of maternal regulatory behaviors were derived from the previous studies reviewed in the Introduction. For each 5-sec episode, the presence or absence of the following sixteen maternal strategies were coded under six categories:

1. Distractive strategies: *distraction, removing cookie out of child sight,* and *cognitive reframing*

2. Supportive strategies: *physical comfort, reassurance, expressive encouragement,* and *positive verbal statements*
3. Less distractive strategies: *reasoning, bargaining, rule statements with positive, negative* and *suggestive commands*
4. Non-supportive strategies: *ignoring*, *physically refraining, non-task related refraining responses*, *punitive reactions*, *minimizing*, and *statements that return child's attention to cookie*
5. Passive strategies: *giving in to child's touching* and *eating cookie*.
6. Mothers' emotional reactions: *positive* and *negative emotional responses*

The coding scheme with the definition of all codes is presented in Appendix H. After coding of the data, a few of the codes were dropped given that mothers rarely displayed these responses. These included expressive encouragement, positive verbal statement, cognitive reframing, punitive reactions, minimizing, and non-task related refraining responses.

The interrater reliability, measured by Cohen's kappa for these maternal regulatory responses was assessed between two coders on %16 of the cases. Kappas ranged from .40 (giving in to child's eat cookie) to .76 (bargaining). Table 2 contains the Kappa values for each of the maternal regulatory variables.

Child Behavior During Delay Task

For each of the 5-second episode during the 4-minute delay of gratification task, child's desire driven behaviors towards the cookie were coded. These included reaching towards the cookies, touching, picking, grabbing, biting and licking the cookie. Eleven percent of all child desire-driven behaviors were coded by a second

coder to assess interrater reliability. Coders' agreement was high, with Kappa values of .90 reaching, .95 for touching, .97 for licking, and full agreement for picking, grabbing, and biting. Licking and picking the cookie responses were shown rarely (less than 1%) hence these variables were dropped.

Child Affect During Delay Task

During each of the 5-second episode k, there specific emotions (anger, sadness and happiness,) were also coded. The coding scheme by Cole and colleagues was used for this project (Cole, Wiggins, Radzioch, & Pearl, 2007). Happiness, anger and sadness were each coded according to the child's facial expression, tone of voice, and behaviors. The coding scheme with the definitions of each coding category is in Appendix I. Two independent coders were trained until their agreement was reached. Their reliability was also calculated on %12 of the sample for children's expression of anger, sadness and happiness respectively .93, .96, .98 (Cohen's kappa).

CHAPTER 3

RESULTS

Preliminary Analyses

For each 5-second interval, the presence or absence of the mother and child affective and behavioral responses as described above have been coded. The frequency of each of the maternal affective and behavioral responses as well as child affect and desire-driven behavior was converted into proportion scores. The frequency of each maternal and child codes was divided by the total number of episodes of the four-minute task.

Linearity, normality and homoscedasticity assumptions were examined before testing the hypotheses of the study. Scores on the study variables were all found to be normally distributed except for *physical comfort* and *removing cookie out of child sight*. These variables were skewed. The squareroot-transformations for physical comfort and removing cookie out of child sight were successful in reducing the skewness of these variables.

Relations of Demographic Variables to Mother and Child Behaviors During the Delay Task

Child and family demographic variables were examined in relation to maternal emotion regulation strategies and child affect as well as desire-driven behaviors. Correlations among the demographic and study variables are presented in Table 2 in

Appendix B. Mother's age, education and job status did not have significant relations with any of the study variables.

Furthermore, child age and gender were examined in relation to the frequency of maternal responses and child affect as well as desire-driven behavior. However, no child gender and age differences were documented for any of the child affect as well as desire-driven as responses and maternal emotion regulation responses except that mothers were more likely to return their sons' attention to the cookie than their daughters' attention (r = -.27, $p < 0.05$).

Maternal Regulation Strategies

In order to determine whether mothers used each of the strategies at least some of time, the average frequencies of maternal regulatory strategies have been computed. Table 3 in Appendix C contains the descriptive statistics for each of the maternal regulatory responses.

Distractive responses. The most frequently used strategy was distraction. We found that 98% of the participating mothers used distraction at least once during the observation period. On average, mothers used distraction for 21% of the time throughout the delay task (SD =.17). Removing cookie out of child's sight was also used by most of the mothers (81%) at least once. On average mothers removed the cookie out of their child's sight about 12% of the time throughout the delay time (SD =.21). None of the participating mothers used cognitive reframing as an emotion regulation strategy during our observation procedure; therefore this variable was dropped from analyses.

Supportive responses. We found that 45 % of the mothers offered physical comfort to their toddlers at least once, and those comforting mothers engaged in this behavior 5% of the time on average during the task (SD =.13). Eighty-nine percent of the participating mothers used reassurance as an emotion regulation strategy at least once. However, mothers have not displayed this behavior for a long proportion of time during the delay task. On average, mothers endorsed reassuring statements 9% of the time throughout the delay task (SD =.7). Expressive encouragement was observed by 14% (N = 9) of the mothers only for brief amounts of time during this task (less than 1%, SD =.01). Positive verbal statement was also rarely observed. Only 28% (N = 14) mothers used for brief amounts of time (less than 1%, SD =.03). Hence these variables, which were displayed by mothers during less than 1% of the time throughout the observation period, were dropped.

Less distractive verbal strategies. Seventy-nine percent of the mothers gave reasoning to their toddlers at least once. On average, mothers spent 6% of the time throughout the delay task to engage in reasoning with their toddler (SD =.06). Ninety-five percent of the participating mothers used bargaining as an emotion regulation strategy at least once, and on average, they bargained with their children during 9% of the time of the delay task (SD =.06). Most of the participating mothers stated rules with direct commands; 94% of them used positive direct commands (i.e., wait please, listen to me), 84% of them used negative direct commands (i.e., don't touch, no screaming), 79% of them used suggestive commands (i.e., would you sit and wait?), at least once. On average, mothers spent 14%, 9%, and 10% of the time throughout the delay task using positive, negative and suggestive comments, respectively (SD =.11, SD =.09, SD =.09).

Non-supportive strategies. We found that 82% of the participant mothers returned their child's attention to the cookie. On average, mothers used statements that would return their child's attention to cookie for 7% of the time throughout the delay task (SD =.09). It was also observed that 69% of the participating mothers used ignoring as an emotion regulation strategy at least once during the observation period. On average, mothers ignored their children's responses for 5% of the time throughout the delay task (SD =.06). Fifty-seven percent of the mothers refrained their children from the desired cookie at least once. On average, these mothers used physical refraining for 7% of the time throughout the delay task (SD =.10). Non-task related refraining responses, punitive reactions, and minimizing were shown rarely. Mothers engaged in non-task related refraining and punitive reactions about 2% of the time (SD =.05 and SD =.04, respectively), and none of the mothers used minimizing throughout the task. Hence these variables were dropped.

Passive strategies. It was observed that 87% of the participant mothers gave in to their child's desire to touch the cookie at least once. On average, these mothers gave permission to their child's touch to cookie for 26% of the time throughout the delay task (SD =.27). On the other hand, 39% of the participants gave permission to take a bite from the cookie.

Mother's emotional reactions. Seventy-six percent of the mothers showed a positive emotion reaction at least once, and 45% of the mothers showed a negative emotion reaction at least once during the task. On average, mothers expressed positive emotions for 15% of the time (SD = .15), while they displayed negative emotions for 4% of the time throughout the task (SD = .07).

Correlations within Maternal Regulation Strategies

Within Category Correlations

Maternal distractive strategies, namely distraction and removing cookie out of child sight were not correlated with each other (r = .13, p = ns.). However, maternal supportive strategies were positively and significantly correlated with each other. Mothers who used physical comfort were more likely to use reassurance (r = .42, p < 0.01). The correlations within the less distractive verbal strategies were observed only within mothers' direct commands. Mothers who used statements with negative direct commands were more likely used statements with positive direct commands (r = .39, p < 0.01), and statements with suggestive commands (r = .39, p < 0.01). In the non-supportive maternal strategies category, the only correlation was between ignore and statements that return child's attention to cookie (r = -.24, p < 0.05). Passive maternal strategies were also correlated with each other. Giving in to the child to hold the cookie was positively and significantly correlated with giving in the child to eat cookie (r = .42, p < 0.01). Finally, there was no significant relationship between mothers' negative and positive emotion reactions.

Between Category Correlations

Maternal distraction was significantly and negatively correlated with two of the maternal passive strategies, namely giving in to hold (r = -.49, p < 0.01) and giving in to eat the cookie (r = -.31, p < 0.05). Mothers who used distraction were less likely to allow their children to hold and eat the cookie.

Moreover, mothers who allowed their children to hold the cookie were more likely to use statements with negative direct commands ($r = .31$, $p < 0.05$). Additionally, mothers who allowed their children to eat the cookie were more likely to use reasoning as an emotion regulation strategy ($r = .39$, $p < 0.01$).

One of the non-supportive strategies, namely Ignore, was correlated significantly and negatively with reassurance ($r = -.39$, $p < 0.01$), bargaining ($r = -.29$, $p < 0.05$), reasoning ($r = -.26$, $p < 0.05$), distraction ($r = -.35$, $p < 0.01$), statements of positive direct commands ($r = -.26$, $p < 0.05$), negative direct commands ($r = -.27$, $p < 0.05$), and suggestive commands ($r = -.30$, $p < 0.05$), as well as positive emotion reaction ($r = -.39$, $p < 0.01$). Mothers who ignored their children's responses were less likely to express positive affect and use these strategies.

Mothers who used reassurance as an emotion regulation strategy were less likely to allow their children to hold the cookie ($r = -.38$, $p < 0.01$), and were more likely to use statements with positive direct commands ($r = .27$, $p < 0.05$) and remove the cookie out of their child's sight ($r = .33$, $p < 0.01$). There was also positive and significant correlation between maternal physical comfort and bargaining ($r = .29$, $p < 0.05$). Mothers who used physical comfort were more likely to use bargaining.

Returning attention to cookie was positively and significantly correlated with statements with negative direct comment ($r = .34$, $p < 0.01$), reasoning ($r = .27$, $p < 0.05$), as well as giving in the child holding ($r = .37$, $p < 0.05$), and eating the cookie ($r = .27$, $p < 0.05$).

Mothers' negative emotion reactions were associated positively and significantly with reasoning ($r = .25$, $p < 0.05$), giving in to eat the cookie ($r = .38$, p

< 0.01), as well as statements with positive direct command (r = .40, p < 0.01), negative direct command (r = .29, p < 0.05), and suggestive command (r = .29, p < 0.05). Mothers who expressed their distress were more likely to use reasoning and statements with direct and suggestive commands as emotion regulation strategies, and allowed their children to eat the cookie. On the other hand, mothers' positive emotion reactions were associated with reasoning (r = .35, p < 0.01), removing cookie (r = .47, p < 0.01), as well as statements with negative direct commands (r = .30, p < 0.05) and suggestive commands (r = .31, p < 0.05). Mothers who expressed positive emotion during the task were more likely to use reasoning, remove the cookie, and make statements of negative direct commands as well as suggestive commands as emotion regulation strategies.

Child Desire-Driven Behaviors

The means, standard deviations, and ranges for each of the child desire-driven behavior responses have been presented in Table 4 in Appendix D.

Frequency to Reach. The most frequently used desire-driven child response was reaching for the cookie. We found that 97% of the participating children tried to reach the cookie at least once during the observation period. On average, children reached for the cookie for 16% of the time throughout the delay task (SD =.15).

Frequency to Touch. Seventy-four percent of participating children attempted to touch the cookie at least once. On average, they spent 9% of the time throughout the delay task by touching the cookie (SD =.11).

Frequency to Pick. Picking the cookie response was observed by 10% (N = 9) of the children for only brief amounts of time during this task (1%, SD =.03). Hence this variable was dropped.

Frequency to Grab. Seventy-two percent of the children attempted to grab the cookie at least once during the delay task. On average, children grabbed the cookie for 18% of the time throughout the delay task (SD =.24).

Frequency to Bite. Twenty-six percent of the children tried to bite the cookie at least once during the delay task. On average, children took a bite from the cookie 3% of the time throughout the delay task (SD =.06).

Frequency to Lick. Licking the cookie response was shown rarely by children. Only 8% of the children liked the cookie at least once, and on average, they engaged in liking the cookie only 1% of the time throughout the task (SD =.05). Hence this variable was dropped.

Correlations within Child Desire-Driven Behaviors

Frequency of the reaching for the cookie was negatively and significantly correlated with grabbing the cookie (r = -.28, $p < 0.05$), and biting the cookie (r = -.27, $p < 0.05$). Surprisingly, children who tended to reach for the cookie were less likely to grab and bite the cookie. Moreover, children who grabbed the cookie were more likely to bite the cookie (r = .60, $p < 0.01$).

Emotionality/Affect of Child

The means, standard deviations, and ranges for each of the child emotional reactions have been presented in Table 4 in Appendix D.

Anger. The most frequently observed emotional reaction of children was anger. We found that 79% of the participating children displayed anger at least once during the observation period. On average, they expressed anger for 29% of the time throughout the delay task (SD =.35).

Sadness. Sixty-eight percent of the children expressed sadness at least once during the delay task. On average, children's sadness was observed for 27% of the time throughout the delay task (SD =.45).

Happiness. Positive emotion expression was also observed by most of the participating children. Eighty-seven percent of the children expressed their happiness at least once. On average, positive affect was observed for 24% of the time throughout the delay task (SD =.32).

Correlations within Emotion/Affect Responses of Child

Expression of anger was positively and significantly correlated with expression of sadness (r = .66, p < 0.01). Children who became angry were also likely to express sadness. On the other hand, sadness and positive emotion expression were significantly and negatively associated (r = -.31, p < 0.05). Children who were displayed sadness during the task were less likely to express positive emotionality.

Relations between Maternal Regulation Responses and Child Desire-Driven Behaviors

First, the associations between maternal regulation strategies and child desire-driven behaviors were examined to evaluate the study hypotheses. The correlations among the maternal responses and children desire-driven behaviors are presented in Table 5 in Appendix E.

Distractive responses. Mothers' distraction was positively correlated with the frequency of children's reaching for the cookie ($r = .26$, $p < 0.05$). Maternal distraction was negatively correlated with children's touching the cookie ($r = -.26$, $p < 0.05$), and grabbing ($r = -.34$, $p < 0.01$), as well as biting the cookie ($r = -.26$, $p < 0.05$). In other words, mothers who distracted their children were less likely to have children who touched, grabbed or took a bite from the cookie. Removing the cookie out of child's sight was significantly and negatively correlated touching the cookie ($r = -.31$, $p < 0.05$), although it was positively correlated with reaching for the cookie ($r = .60$, $p < 0.01$).

Supportive responses. Maternal physical comfort was positively associated with children's reaching for the cookie ($r = .25$, $p < 0.05$). Mothers' reassurance was significantly and positively related to children's reaching for the cookie ($r = .45$, $p < 0.01$) and negatively related to children touching the cookie ($r = -.28$, $p < 0.05$).

Less distractive verbal strategies. Reasoning was the only maternal verbal strategy that showed a statistically significant and positive relation with children's biting response ($r = .41$, $p < 0.01$). Bargaining was only positively correlated with children's reaching response ($r = .25$, $p < 0.05$).

Mothers' statements of positive direct commands and negative direct commands were positively correlated with children's reaching responses (r = .25, p < 0.05 and r = .26, p < 0.05, respectively). Finally, there was a statistically significant and positive relationship between mothers' statement of suggestive commands and children's grabbing response (r = .28, p < 0.05).

Non-supportive strategies. Statements that returned a child's attention to the cookie were positively associated with children's grabbing behavior (r = .28, p < 0.05). The other non-supportive maternal strategies, namely ignoring and physical refraining were significantly related to children's reaching behavior. Children whose mothers ignored them were less likely to reach for the cookie (r = -.33, p < 0.01). On the other hand, children whose mothers physically refrained them were more likely to reach for the cookie (r = .35, p < 0.01).

Passive strategies. Children of mothers who allowed them to hold or eat the cookie were less likely to reach for the cookie (r = -.38, p < 0.01). Giving in to the child to hold the cookie was significantly and positively related to children's grabbing response (r = .79, p < 0.01) and biting response (r = .43, p < 0.01). Moreover, giving in to the child to hold the cookie was associated significantly and positively with children's touching response (r = .48, p < 0.01).

Mother's emotional reactions. Mothers' negative emotional reactions were significantly and positively associated with children's biting (r = .41, p < 0.01) and grabbing responses (r = .30, p < 0.05). In other words, mothers of children who took a bite from the cookie or grab the cookie were significantly more likely to show distress. Mothers' positive emotional reactions were correlated significantly and positively reaching behavior of children (r = .45, p < 0.01). Children whose mothers

responded more positively were more likely to have children who reached for the cookie during the delay task.

Relations between Maternal Regulation Responses and Emotionality/Affect of Child

The correlations among the maternal responses and children affective responses are presented in Table 6 in Appendix F.

Distractive responses. Maternal distraction was not significantly correlated with any of the child emotional reactions. Mothers who removed the cookie out of child's sight as an emotion regulation strategy were more likely to have children who expressed anger ($r = .57$, $p < 0.01$) and sadness ($r = .45$, $p < 0.01$).

Supportive responses. Maternal physical comfort was significantly and positively related to child's anger ($r = .42$, $p < 0.01$) as well as sadness ($r = .45$, $p < 0.01$), and negatively correlated with child's expression of positive emotion ($r = -.29$, $p < 0.05$).

Mothers' reassurance was positively and significantly related to children expression of anger ($r = .49$, $p < 0.01$) and sadness ($r = .52$, $p < 0.01$). However, there was no significant relationship between maternal reassurance and children's positive emotionality ($r = -.22$, p = ns).

Less distractive verbal strategies. Reasoning was not significantly correlated with any of the children's emotion expressions. Bargaining was only positively correlated with children's sadness ($r = .30$, $p < 0.05$).

Mothers' statements of positive direct commands were positively correlated with children's anger expression ($r = .41$, $p < 0.01$), and sadness expression ($r = .27$, $p < 0.05$). We only found a positive and significant relationship between mother's

negative direct command and children's positive emotion expressions (r = .30, p < 0.05). On the other hand, there was no association between mothers' statements of suggestive commands and children's emotion expressions.

Non-supportive strategies. Statements that returned a child's attention to the cookie were not significantly correlated with children's emotion expressions. Ignoring children's reactions was significantly and negatively related to anger and sadness (r = -.36, p < 0.01 and r = -.32, p < 0.05, respectively). The other non-supportive maternal strategy, physical refraining was only significantly and positively related to children's expression of sadness (r = .31, p < 0.05).

Passive strategies. Giving in to the child to hold the cookie was the only maternal passive strategy that showed a statistically significant and negative relation with children's sadness expression (r = -.33, p < 0.05). Children of mothers who allowed them to hold were less likely to express sadness.

Mother's emotional reactions. Only mothers' positive emotional reactions were significantly and positively associated with children's positive emotional reactions only (r = .57, p < 0.01). In other words, children whose mothers responded more positively were more likely to express positive emotion.

CHAPTER 4

DISCUSSION

Considerable research has focused on the ways that parents contribute to their children's social emotional competency. Especially, the family context plays an essential role in the development of children's emotion regulation competence (Kopp, 1982, 1989; Thompson, 1994). The present study relied on direct behavioral observations of toddlers and their mothers in a structured delay task in a laboratory setting. The aim of this observational study was twofold. First, we explored the regulation strategies that Turkish mothers displayed in order to help their toddlers cope with a challenging situation which involved waiting for a cookie. The second goal was to investigate the relations between maternal regulation responses and toddlers' desire-driven behaviors as well as affect during this food delay task.

Maternal Regulatory Responses

Based on past research and theory (Morris et al., 2011; Thompson & Meyer, 2007), we expected to observe distractive (i.e., distraction, removing cookie), supportive (i.e., physical comfort, reassurance), and less distractive verbal strategies (i.e., reasoning, bargaining, positive, negative and suggestive rule statements), as well as non-supportive (i.e., returning child's attention to cookie, restraining, ignoring) and passive strategies (i.e., giving in to touch and eat cookie). We also expected to observe maternal negative and positive emotion expressions (Fabes et al., 2001) that would act to influence toddlers' affect and behavior during this task. Our observations and descriptive analyses revealed that Turkish mothers engaged in each

of these strategies with a variable frequency. Specifically, mothers in our sample engaged most often in distractive strategies to prevent their children from holding and eating the cookie. The frequency of distractive maternal strategies to help their children regulate their affect and behaviors was similar to previous work conducted in the West (Grolnick et al., 1998; Lecuyer & Houck, 2006; Putnam et al., 2002).

Unexpectedly, passive strategies, especially giving in and letting child to touch the cookie have also been observed as frequently as distractive strategies. The high prevalence of giving in responses on part of mothers suggests a permissive style of responding. This pattern is consistent with the recent findings from Nacak and collegaues' study which also documented that high-educated mothers in Istanbul reported higher levels of permissive behaviors than low-educated mothers based on maternal responses to questionnaires (Nacak, Yağmurlu, Durge, & Van de Vijver, 2011). The present study confirmed the permissive style of highly educated, urban Turkish mothers and extended this previous work by direct behavioral observations obtained in a structured task.

The next most frequently observed maternal response was one of the less distractive verbal strategies, namely rule statements with positive commands (e.g., "you need to sit down and wait; listen to me"). Mothers were often observed to issue such statements in order to set limits on their toddlers' behavior. It is important to note that mothers also spent a similar amount of time during this task to provide physical comfort (e.g., hugging, kissing, picking up the child to give comfort or stroking child's hair) and expressed positive affect during this stressful task as much as they issued rule statements. The remaining less distractive, verbal responses such as reasoning, and bargaining followed the distractive strategies, rule statement and physical comfort in frequency rank. Unexpectedly, non-supportive strategies such as

ignoring and physically refraining have been observed almost as frequently as bargaining and reasoning. Finally, mothers showed negative emotions for a limited amount of time during this stressful task.

Based on previous research, we have also included distractive and supportive strategies such as cognitive reframing, expressive encouragement and positive verbal statements as well as some non-supportive strategies such as non-task related refraining responses, punitive reactions, and minimizing into our coding scheme. These maternal regulatory responses were dropped from analyses because the mothers in our sample have rarely display these strategies to support their children emotion regulation process during our task. It is possible that mothers of the toddlers considered cognitive reframing inappropriate for developmental level of their toddlers; therefore the strategy could be observed hardly ever in our data. Moreover, the infrequent rate of expressive encouragement and positive verbal statements in our data is consistent with recent research on Turkish mothers (Corapci, 2012). Although studies (Sunar, 2002; Fişek & Sunar, 2005) suggest an increase in using expressive encouragement and positive verbal statements over the generations among Turkish mothers, open expression of emotions still remains low.

Relations Among Maternal Regulatory Responses

We also investigated the relations among the maternal regulatory responses. As developmental theory (Kopp, 1989) and previous research (Fabes et al., 2001) predicts, mothers' use of non-supportive strategies were negatively related to more effective strategies such as distraction and bargaining as well as reasoning. Specifically, mothers who ignored the emotional bids of their toddlers were less

likely to engage in distraction, reassurance, and bargaining. These mothers were also observed to display less positive affect. Such a pattern of intercorrelations were also documented in previous studies of emotion socialization (Fabes et al., 2001).

On the other hand, we found that mothers who provided reasons for their toddlers' compliance were more likely to display positive emotion reactions. It can be interpreted that maternal positive mood facilitates mothers' implementation of such supportive responses. Unexpectedly, mothers who expressed more negative affect were also more likely to reason with their child. These mothers were also more likely to issue commands. It is likely that negative affect elicits more restrictive and controlling attitude from mothers, while positive affect simply acts to facilitate more in-depth discussion with a child. Furthermore, mothers who gave in to their children to hold and/or eat the cookie were more likely to warn their children with negative direct commands (e.g., "don't touch" "you shouldn't eat the cookie") and show negative affect as well. It appears that mothers became more distressed when they used more passive strategies as their children were not following their rules.

As expected, two of the supportive responses, namely physical comfort and reassurance were positively related. This finding has replicated previous research conducted in the West (Grolnick et al., 1998). This pattern also supports that maternal provision of physical and verbal comfort can be seen as part of sensitivity (Keller et al., 2004). However, mothers' physical comforting as well as verbal prompts did not necessarily imply maternal expression of positive affect. This pattern suggests that maternal affect expression and comforting (physically and verbally) may be seen as a separate component of sensitivity.

Children's Desire Driven Behaviors and Affect Expression

Frequencies of the child desire-driven behaviors as well as affect were also investigated in this observational study. Desire driven behaviors can be seen as children's impatient and noncompliant behaviors considering the wait task requirements. Ninety-seven percent of children showed reaching for the cookie at least once; and they kept trying to reach the cookie for 16% of the time duration of the delay task. They also frequently attempted to touch and grab the cookie. Seventy-four percent of children achieved to touch and 72% of them grabbed the cookie for at least once during the task. Twenty-five percent of the participating children took a bite from the cookie during the wait task. These rates were much higher compared to previous work conducted in the West (Gilliom et al., 2002; Putnam et al., 2002).

With regard to toddlers' emotion expression, we observed children's anger, sadness and positive emotion expression during the wait task. Previous studies (Calkins & Johnsons, 1998; Gilliom et al., 2002; Grolnick et al., 1996; Grolnick et al., 1998; Jahromi et al., 2004; Mirabble et al., 2009; Spinrad et al., 2004) have examined children's distress without distinguishing between anger, sadness, or fear. However, according to the differential emotion theory (Izard, Woodburn, & Finlon, 2010) and the functionalist approach (Campos, Campos, & Barrett, 1989), anger and sadness have distinct situational antecedents and each emotion acts to elicit differential responses from the environment. Specifically, the differential emotions theory would predict that when personally significant goals are blocked, feelings of anger are likely to arise, which in turn motivate one to remove obstacles against one's own goal-directed actions, while personally significant losses would elicit

sadness (Berkowitz & Harmon-Jones, 2004). These two conditions were present in the wait task of our study. The present study made a unique contribution to the literature by observing not only powerful emotions such as anger, but also non-powerful emotions such as sadness. In our paradigm, children were first firmly refrained from touching the cookie (i.e., a frustrating moment) and as the session progressed, children's anger was expected to turn to sadness or accompanied by sadness due to their perceived loss of a reward. Consistent with the predictions of the theory, children in our sample displayed angry as well as sad affect approximately during one-third of the time in the cookie wait task. On the other hand, happiness was also frequently observed possibly related to the presence of a potential reward. Furthermore, it is likely that maternal expression of positive affect also elicited smiles and laughter in their children during this task.

Relations of Demographic Variables to Maternal and Child Responses

Our examination of child and family demographic variables in relation to maternal emotion regulation strategies and child desire-driven behaviors as well as child affect revealed that maternal variables such as age, education and job status did not have significant relations with any of the study variables. This result can be due to the homogeneity of our sample given that the participating families were from mostly similar education and income levels.

Child gender did not have significant relations with any of the study variables except that mothers were more likely to return their sons' attention to the cookie than their daughters' attention. Previous studies also report inconsistent findings with regard to gender differences in maternal regulatory responses of their toddlers. For

example, some of the previous studies reported that mothers of girls provided more physical comforting (Fagot, 1978), distraction and reassurance as emotion regulation strategy than mothers of boys (Grolnick et al., 1998). Mothers were also observed to display more passive responses with their sons than with their daughters (Grolnick et al., 1998). Conversely, lack of gender differences were also reported in previous literature (Calkins & Johnson, 1998; Grolnick et al., 1998; Morris et al., 2011). Previous questionnaire studies with mothers of preschoolers, both in the U.S. (Fabes et al., 2002) and in Turkey (Corapci, Aksan, & Yagmurlu, 2012; Yagmurlu & Altan, 2010) have also failed to detect gender differences. The results of the current study confirm the lack of gender differences, even in the toddler age period. Egalitarian treatment of boys and girls that have been reported by middle-high SES families can be an explanation for our results (Kagitcibasi & Ataca, 2005; Sunar, 2002). Future observational work with less educated families is warranted to better understand gender role socialization in emotionally charged situations.

Maternal and child responses also did not vary as a function of child age in our data. Previous work has shown that mothers used more active engagement and less verbal strategies with their younger as compared to older toddlers (Grolnick et al., 1998; Jahromi et al., 2004; Spinrad et al., 2004). However, these studies reported age-related differences in longitudinal studies (i.e., age range between 2 to 32 months). The age range of the participant toddlers in the present study was smaller. Long-term longitudinal studies or cross-sectional studies with larger age intervals might detect age-related differences on child responses and maternal strategies.

Toddlers' observed affect and behaviors towards the wait object during the delay of gratification task have been examined in relation to maternal regulation strategies.

Firstly, as we expected, mothers who distracted their children were less likely to have children who touched, grabbed and took a bite from the cookie. On the other hand, maternal distraction and removing the cookie out of child's reach were both related to more reaching towards the cookie. Based on these correlational findings, it is possible to argue that as children reached for the cookie, mothers were more likely to remove and engage in distraction. In turn, it is likely that mothers who distracted their children prevented them from touching or grabbing the cookie. Distraction was the only maternal response that showed negative relations with the frequency of touching and grabbing the cookie. Therefore, among all the responses, distraction appears to be the most efficient maternal regulation strategy in our study, consistent with previous literature from the West (Grolnick et al., 1998; Lecuyer & Houck, 2006; Morris et al., 2011; Putnam et al., 2002).

Surprisingly, distraction was unrelated to children's affect. However, children whose mothers removed the cookie out of their sight or out of their reach were more likely to express anger and sadness. This result supports the predictions of the differential emotions theory (Izard et al., 2010). This active maternal response was also negatively related to children's frequency of touching the cookie.

Our results have also revealed a positive relation between maternal reassurance and reaching towards the cookie. Although our results are correlational and it is impossible to determine the directionality of the relations, based on our observations, we can argue that child's reaching towards the cookie played a major role in eliciting

maternal reassurance behavior. The negative relation between reassurance and frequency of touching the cookie also makes sense based on our observations. We could argue that mothers who reassured their children that they soon would get the cookie were less likely to touch the cookie. The positive correlations between reassurance and children's anger as well as sadness expression can also be interpreted based on our extensive observations. We often observed that child's negative affect elicited maternal reassurance rather than vice versa.

Among the less distractive, verbal responses, mothers' explanations for compliance based on norms, values, or consequences (i.e., reasoning) were unrelated to child affect. The only child behavior that was related to reasoning was child's total noncompliance, namely taking a bite from the cookie. It is possible to interpret this correlational finding in different ways. First, it is possible that maternal explanations trigger more noncompliance in their children. Alternatively, children's noncompliance elicits more reasoning from mothers. Again, our observations tend to support the second interpretation. However, detailed contingency analyses need to be conducted to draw firm conclusions about the directionality of this finding. Our analyses also showed us that there were no influences of children's extraversion on these results.

Bargaining, another verbal strategy was also related to reaching towards the cookie and sadness expression. Based on these correlational results, again it is difficult to determine the directionality, but we could argue that mothers of children who were sad and reaching for the cookie were more like to use bargaining as an emotion regulation strategy rather than vice versa.

We found a positive relation between positive commands and children's anger as well as sadness expression. This correlational finding can also be interpreted in

different ways. First, it is possible that direct, positive commands (i.e., "sit down, listen to me") elicited anger and sadness in children. It is also possible that children's anger and sadness may have elicited more structuring commands from mothers in an effort to regulate their children's affect. An unexpected pattern was the positive relation between mother's negative commands (i.e., "stop touching the cookie, don't eat the cookie") and children's positive emotion expressions. Based on our observations, we can speculate that some children reached for the cookie and expressed excitement, which in return immediately was followed by strict maternal prohibition of touching the cookie.

Maternal statements that returned a child's attention to the cookie were positively associated with children's grabbing the cookie. Based on our observations, it seemed to us that children's tendency to grab the cookie increased when mothers mentioned more about the delayed object although maternal focus on the delay object was not related to children expression of distress.

On the contrary, children whose mothers ignored them during the delay task were less likely to reach for the cookie and they were less likely to express their anger and sadness. This pattern may suggest that children's compliant and neutral affect led mothers focus on their survey which they were supposed to complete as their child was waiting for the cookie. Alternatively, one can argue that mothers who were more passive and less engaged with the children provided their children with opportunities to self-regulate, and their children were less distressed and able to regulate their desire-driven behaviors better.

Maternal restriction from the cookie was related to desire driven behavior (i.e, reaching towards the cookie) and sad affect. Based on our observations, it seems unlikely that child's sadness elicits restriction. As consistent with previous works

(Fabes, et al., 2001; Mirable et al., 2009), restriction and loss appear to elicit sadness from children.

Mothers negative emotion reaction and children's desire driven behaviors, namely grabbing and biting the cookie, were positively associated. Moreover, the results showed that mothers with positive emotional reactions were more likely to have children who also expressed positive emotions and waited for longer to take a bite from the cookie. However, these children were also more likely to reach for the cookie. This could be interpreted that emotional reactions of mothers and their children's influence each other, and this positive interaction might encourage children to wait longer for the first bite from the cookie although it could not control their wish to reach for the cookie. Although exact consistency with previous literature could not be found, positive relationship between parental distress and children's negative emotions has been reported (Fabes et al., 2001; Fabes et al., 2002). Our findings expressed that maternal emotion reactions have influence on children's responses and affect as much as maternal strategies.

Finally, some of the non-supportive strategies such as non-task related refraining responses, punitive reactions, and minimizing that were documented in previous research were hardly ever exhibited by the mothers in the present study for the period of our observation. Such non-supportive responses had also been rarely endorsed by Turkish mothers of preschoolers in previous studies based on mothers' self-report to questionnaires (Çorapçı et al., 2012; Yagmurlu & Altan 2010). It is possible that mothers may be underreporting such non-supportive behaviors. Our observation might have been too short to observe such non-supportive behaviors. Moreover, the participating mothers knew that they were being observed in the laboratory setting. Social desirability may be an issue in our procedure. Mothers

might have responded in a more supportive manner to appear competent and less punitive they are.

Conclusions and Limitations of the Study

The results of the present study add to the literature by describing Turkish mothers' emotion regulation profile and the associations between each of these strategies with children's behavioral and affective responses. The use of direct behavioral and affect observations of mothers and children is a major strength of the study. The structured task paradigm also allowed us to elicit impatience and distress in children such that we could observe maternal regulatory responses. We also focused on both positive and negative emotional reactions of mothers as well as children, since most research focused on negative rather than positive emotions in situations that elicit distress.

In summary, we found that Turkish mothers display variable strategies with a variable frequency during this stressful task. As we expected, mothers mostly preferred distractive strategies to support their children's compliance with the delay task. The use of passive strategies suggested a permissive style of Turkish mothers. . Moreover, mothers' use of non-supportive strategies was negatively related to more effective strategies and mothers became more distressed when they used more passive strategies. Overall, children who participated in our study generally had difficulty to comply with the delay task as evident by the high rate of children who touched or grabbed the cookie and expressed anger and sadness during the task. Consistent with previous literature, we found distraction as the most efficient maternal strategy that showed negative relations with the frequency of noncompliant behaviors of the children.

Although the present study made essential contributions to the literature, we acknowledge limitations of our study as well. First of all, this cross-sectional study has a correational nature. We could not definitely address the direction of causality between the maternal and child-related variables. Second, our study was limited by the small sample size to run additional, more advanced statistical analyses such as structural equation analyses. Moreover, the families in our sample represented middle- to upper-class socioeconomic background. The homogeneity of our sample limits us to make generalizations from this sample. The study is also limited in that we observed mother-child dyads in a single brief task of four minutes duration. Additional data from multiple assessments and naturalistic observations of daily frustrations would strengthen this study. Additionally, the study examined only maternal regulation strategies; however Turkish fathers' regulatory strategies of children's behavior and distress may also provide significant contribution to the literature. Finally, the emotional characteristics of the child may act as a potential third covariable that could account for links between mothers' regulation strategies and children's affect/behavior.

The results and limitations of this study also suggest a number of directions for future research. In this study, we investigated the relationship between maternal emotion regulation strategies and child's behaviors as well as affect. However, we did not observe children's self-regulatory responses without the assistance of maternal responses. Future studies examining delay of gratification, both with and without maternal support may compare these processes. Moreover, investigating parental characteristics also contributes more for the clarification the relationship between maternal regulation strategies and child responses. The influence of child temperament on the relationships between maternal regulation strategies and toddler

affect as well as behavior should be controlled. Replication using larger sample size might give us more reliable results. Investigating across economically and culturally diverse groups is critical to better understand socialization practices and regulatory strategies across different socioeconomic and cultural backgrounds.

APPENDICES

APPENDIX A

Table 1. Demographic characteristic of the participating families

	Mean (SD)	Range	Frequency
Age of the child (months)	25.6 (3.8)	19 – 34	
Age of mother (years)	33.6 (3.6)	28 - 42	
Household size (including child)		2-7	
2			2 %
3			42 %
4			40 %
5			11 %
7			5 %
Number of sibling		0-2	
0			79 %
1			19 %
2			2 %
Income (TL)		>1500	
1500-3000			13 %
>3000			87 %
Mother education level			
Middle school			2 %
High school			7 %
2 year college			6 %
University			60 %
Graduate degree			25 %
Mother job status			
Not-working			15 %
Part-time			10 %
Full-time			75 %

n = 55

APPENDIX B

Table 2. Correlations among the demographic and study variables

Variable	Child Age	Child Sex	Mom Age	Mom Job Status	Mom Education Level
Maternal Variables [a]					
Distractive strategies					
Distraction	-.02	.20	-.10	.07	-.07
Removing cookie out of child sight	.14	-.14	.01	.08	.02
Supportive strategies					
Physical comfort	-.17	.04	.05	.21	.07
Reassurance (verbal soothing)	-.09	.09	-.18	.17	.20
Non-distractive verbal strategies					
Reasoning	.17	.07	-.04	.06	.20
Bargaining	.04	-.18	.20	.10	-.01
Rule statements with positive comment	.08	.06	-.07	-.03	-.02
Rule statements with negative comment	.02	-.11	-.02	-.01	-.03
Rule statements with suggestive comment	-.07	.09	-.05	.18	-.18
Non-supportive strategies					
Ignore	-.08	.01	-.01	-.17	-.07
Physically refraining	.18	-.11	.17	.02	.04
Statements that return child's attention to cookie	-.01	-.27*	-.01	-.02	.01
Passive strategies					
Giving in to child's touching cookie	-.08	-.24	.09	-.04	.04
Giving in to child's eating cookie	.16	-.13	.05	.04	.03
Mother's emotional reactions					
Negative Emotion Reaction	.12	.13	-.10	.11	-.08
Positive Emotion Reaction	.11	-.11	-.04	.24	.11
Child Variables: Desire-Driven Behaviors [b]					
Reach	.01	-.04	-.01	.02	.16
Touch	-.04	-.19	.14	-.19	-.05
Grab	-.07	-.18	.05	.14	.09
Bite	.05	-.15	.05	.09	.07
Child Variables: Affect [c]					
Anger	.10	.04	.01	.12	-.00
Sadness	.02	.01	.11	.15	.05
Positive Emotions	.14	-.23	.17	.13	.13

[a]n = 54. [b]n=62. [c]n=53.

** p < 0.05, ** p <0.01 (2-tailed)*

APPENDIX C

Table 3. Means, standard deviations, ranges, and reliability coefficients of the maternal regulatory variables

Variables	**Mean (SD)**	**Range**	**Relibility (*k*)**
Distractive strategies			
Distraction	.21 (.17)	0 – .73	.69
Removing cookie out of child sight	.26 (.23)	0 – 1.0	.44
Supportive strategies			
Physical comfort	.13 (.19)	0 - .85	.57
Reassurance (verbal soothing)	.09 (.07)	0 - .27	.43
Non-distractive verbal strategies			
Reasoning	.06 (.06)	0 - .21	.49
Bargaining	.09 (.06)	0 - .38	.76
Rule statements with positive comment	.15 (.11)	0 - .44	.54
Rule statements with negative comment	.09 (.09)	0 - .42	.71
Rule statements with suggestive comment	.10 (.09)	0 - .42	.67
Non-supportive strategies			
Ignoring	.05 (.06)	0 - .23	.56
Physically refraining	.07 (.11)	0 - .60	.62
Statements that return child's attention to cookie	.07 (.09)	0 - .48	.65
Passive strategies			
Giving in to child's touching cookie	.26 (.27)	0 - .98	.79
Giving in to child's eating cookie	.04 (.06)	0 - . 25	.40
Mother's emotional reactions			
Negative	.04 (.07)	0 - .27	.41
Positive	.16 (.16)	0 - .69	.71

n = 62

APPENDIX D

Table 4. Means, standard deviations, ranges, and reliability coefficients of the children's behavior and affect variables.

Variables	**Mean (SD)**	**Range**	**Relibility (*k*)**
Child desire driven behaviours[a]			
Frequency of Reaching	16.2 (15.2)	0 – 71	.90
Frequency of Touching	9.3 (11.4)	0 – 54	.95
Frequency of Picking	.08 (.28)	0 – 1.4	1.00
Frequency of Grabbing	17.7 (23.5)	0 – 81	1.00
Frequency of Biting	2.7 (6)	0 – 27	1.00
Frequency of Licking	.08 - (.28)	0 - 1.6	.97
Emotionality/Affect of Children[b]			
Anger	.29 (.35)	0 – 1.3	.93
Sadness	.27 (.45)	0 – 1.9	.96
Positive Emotions	.24 (.32)	0 – 1.5	.98

[a]*n = 62.* [b]*n=53.*

APPENDIX E

Table 5. Correlations between mother's regulation strategies and children's desire driven behaviors

Variables	Frequency to Reach	Frequency to Touch	Frequency to Grab	Frequency to Bite
Distractive strategies				
Distraction	.26*	-.26*	-.34**	-.26*
Removing cookie out of child sight	.60**	-.31*	-.17	-.12
Supportive strategies				
Physical comfort	.25*	-.20	-.12	-.00
Reassurance (verbal soothing)	.45**	-.28*	-.24	-.06
Less distractive verbal strategies				.41**
Reasoning	.20	-.13	.19	.08
Bargaining	.25*	-.10	.09	.14
Positive comment	.25*	-.21	.08	.02
Negative comment	.16	.11	.26*	.13
Suggestive commands	.14	-.13	.28*	
Non-supportive strategies				-.15
Ignoring	-.33**	-.12	.04	.05
Physically refraining	.35**	-.02	.12	.25
Returning child's attention to cookie	-.01	.19	.28*	
Passive strategies				
Giving in to child's touching cookie	-.38**	.48**	.79**	.43**
Giving in to child's eating cookie	-.29*	-.02	.51**	.90**
Mother's emotional reactions				
Negative	.08	-.20	.31	.41**
Positive	.45**	-.16	.15	.13

** p < 0.05, ** p <0.01 (2-tailed)*

APPENDIX F

Table 6 Correlations between mother's regulation strategies and emotionality/affect of child

Variables	**Anger**	**Sadness**	**Positive Emotionality**
Distractive strategies			
Distraction	.22	.21	-.08
Removing cookie out of child sight	.57**	.45**	.08
Supportive strategies			
Physical comfort	.42**	.62**	-.29*
Reassurance (verbal soothing)	.49**	.52**	-.23
Non-distractive verbal strategies			
Reasoning	.20	-.01	.13
Bargaining	.20	.30*	-.01
Positive comment	.41**	.27	-.15
Negative comment	.02	-.07	.30*
Suggestive commands	.17	-.06	.22
Non-supportive strategies			
Ignoring	-.36**	-.32*	-.06
Physically refraining	.21	.31*	-.03
Returning child's attention to cookie	.08	.02	.07
Passive strategies			
Giving in to child's touching cookie	-.18	-.33*	.13
Giving in to child's eating cookie	.04	-.14	.08
Mother's emotional reactions			
Negative	.13	.03	.02
Positive	.25	.10	.57**

** $p < 0.05$, ** $p < 0.01$ (2-tailed)*

APPENDIX G

GENEL BİLGİ FORMU

Çalışmaya Katılan Çocuk ile İlgili Sorular:

1. Çocuğun adı ve soyadı: _____

2. Anketi doldurduğunuz tarih: Gün____ Ay_____ Yıl_____

3. Çocuğun doğum tarihi: Gün____ Ay_____ Yıl_____

4. Çocuğun cinsiyeti (lütfen işaretleyiniz): Erkek____ Kız____

5 a. Çocuk Bakımının Cinsi ve Her Hafta Orada Geçirdiği Saat Sayısı: (lütfen her seçeneği "evet" veya "hayır" şeklinde cevaplayınız ve "evet" diye yanıtladıklarınız için saat sayısını yazınız):

Çocuk Bakımının Cinsi		**Yanıtınız Evetse: Her Hafta Orada Geçirdiği Saat Sayısı**
Anaokulu – kreş	**Evet / Hayır**	
Akraba/ arkadaş/ bakıcı	**Evet / Hayır**	

5 b. Çocuğunuz ne zaman anaokuluna/ kreşe başladı? Ay_____ Yıl_____

6. Çocuğun kaç kardeşi var? Lütfen yaşlarını belirtiniz._____

7. Çocuğun evde sürekli beraber yaşadığı tüm bireyleri lütfen sıralayınız:

İsim	Çocukla olan yakınlığı	Yaş

Çocuğun Annesi ve Babası ile İlgili Sorular

1. Annenin doğum tarihi: Gün_____ Ay_____ Yıl_____

2. Annenin mesleği: _____(çalışmıyor ise, lütfen her zamanki mesleğini yazınız)

3. Anne şu anda çalısıyor mu? (uygun olan seçeneğin altındaki rakamı daire içine alınız)

Evet (Yarı-zamanlı, haftada 45 saatten az)	Evet (Tam zamanlı, haftada 45 saat)	Hayır
1	2	3

4. Annenin şu anki medeni hali (uygun olan seçeneğin altındaki rakamı daire içine alınız)

Evli	Bekar, Ayrılmış veya Boşanmış	Yeniden evlenmiş	Dul
1	2	3	4

5. Babasının doğum tarihi: Gün_____ Ay_____ Yıl_____

6. Babanın mesleği: _____(çalışmıyor ise, lütfen her zamanki mesleğini yazınız)

7. Baba şu anda çalışıyor mu? (uygun olan seçeneğin altındaki rakamı daire içine alınız)

Evet (Yarı-zamanlı, haftada 45 saatten az)	Evet (Tam zamanlı, haftada 45 saat)	Hayır
1	2	3

8. Babanın şu anki medeni hali (uygun olan seçeneğin altındaki rakamı daire içine alınız)

Evli	Bekar, Ayrılmış veya Boşanmış	Yeniden evlenmiş	Dul
1	2	3	4

9. Anne ve babanın eğitimi
(geldiği en yüksek düzey; lütfen hem anne hem de baba için işaretleyiniz.)

	Anne	**Baba**
İlkokuldan terk	1	1
İlkokul mezunu	2	2
Ortaokuldan terk	3	3
Ortaokul mezunu	4	4
Liseden terk	5	5
Lise mezunu	6	6
Yüksek okul mezunu (2 yıllık)	7	7
Üniversiteden terk	8	8
Üniversite mezunu (4 yıllık)	9	9
Uzmanlik derecesi var (Master, doktora gibi)	10	10

10. Hane halkının toplam geliri (lütfen birini işaretleyiniz)

Ayda 250 YTL'nin altında		
Ayda 250 – 450 YTL		
Ayda 450 - 750 YTL		
Ayda 750 - 1500 YTL		
Ayda1.5 – 3000 YTL		
Ayda 3000 YTL'nin üzerinde		

APPENDIX H

Time Sampling Coding System for Delay of Gratification Task
September, 2012
Wolfgang Friedlmeier, Feyza Corapci, Oana Benga

Mother's Regulation Strategies (Mother RS)

Abbrv	Code	Definition/Examples
1	Negative Emotional Reaction	Mother herself is distressed by child's emotional response *she is upset*
2	Positive Emotional Reaction	Mother shows overt positive affect to child bids *she smiles, laughs*
3	Expressive Encouragement	Statements reflect mother's encouragement of children to express negative/positive affect or validation of the child's negative/positive emotional states; labeling child's emotions *"I know you are upset"* *"I know it is hard for you to wait"* *"You will be happy later"* *In instances when the child is unhappy and starts to cry, mom says "what happened, what happened?" in a caring way*
4	Physical Comfort	Mother comfort child physically *mother hugging, kissing, or picking up the child to give comfort or stroking child's hair…* The action "*mother puts child onto her lap*" is coded as physical comfort. This code continues as long as the child remains in mother's lap until the mother does not pay attention anymore even if the child is still on her lap.
5	Removing cookie out of child's sight or reach	Mother removes the cookie out of child's sight
6	Distraction - Game like	Mother actively plays with the child or engages in alternative game-like activities to direct child to other kinds of activities *"making music by clapping on the table"* *"mom tickles child"* *engages the child in answering the survey questions*
7	Distraction - Verbally	Mother distracts child by holding a conversation about a non-task related topic *pointing out objects in the room, making suggestions for activities* ***"****Are you getting sleepy?" (when the child yawns)* *Mother reads the question from the survey verbatim: "what do I do when my child misbehaves?"*
8	Reassurance	Mother reassures the child that he/she would soon get the desired cookie (verbal comforting) *"The experimenter will be right back"* *"It's all right"* *"of course, the cookie is yours"* *"Only a few seconds left"* *"the second page is also done, only one more page to go"* *"3 more questions left for your cookie"* *"we will eat the cookie together" (see the difference below in bargaining)*

9	Bargaining	Attempts to negotiate with the child based on the child's needs and wants; Bargaining should have more a kind of you can do this if/when you also do this or this/that thing happen… *"You can eat the cookie later"* *"You can eat it when the bell rings"* *"You can have it when the experimenter comes back"* *"we'll eat the cookie when the tea comes"*
10	Reasoning	Explanations for compliance based on norms, values, or consequences. Mother states experimenter authority *"The lady said not to touch it"* *"I still have to answer these questions"* *"this is an important paper"* (when child tries to grab the survey from mother's hand) *"Look, I still have not finished my work"*
11	Following/Joint attention	Child points to the food, mom says: I know you want the cookie Child points to the food, and both are looking at the cookie
12	Positive Verbal Statements	Mother praises the child or encourages the child "*Good job waiting for the cookie";* *"hang in there"*
13	Direct Commands Negative	Explicit verbal statements that specify the child's desired actions in negative terms *"Don't touch that";* *"No, you shouldn't eat the cookie"* *"stop touching the cookie"* *"Now you stop"* *"Don't scream now"* *Mom says "time is not up yet"*
14	Direct Commands Positive	Explicit verbal statements that specify the child's desired actions in positive terms *"Now we wait"* *"Let's answer the questions together" (see Bargaining)* *"Now, you do it* *"let's do it together"* (Example: child wants to hold the pencil and scribble on the paper but mother wants to make sure to answer the questions on the form).
15	Suggestive Commands	Statements in the form of suggestions, polite statements or questions *"You really shouldn't touch the cookie"* *"Will you stop touching the cookie?"* *"It will be nice if you could stay away from the cookie"* *"one second" (rather than saying sit down)* *"shhttt"* (when toddler cries, mom just says shht to quiet child) *"What did the lady tell you?* *"Have I finished my questions?"*
16	Cognitive Reframing	The situation is appraised or interpreted differently by reframing the situation so that the task is no longer negative
17	Minimizing	Mother minimizes child's emotional response Mother makes fun of child's emotion; Mother teases child
18	Physically Refraining task-related	Mother stops the child's action towards the cookie *by holding back child's arms,* *holding child firmly in the lap,* *asking the child sit on the chair to control child's access to cookie* Do <u>not</u> code refraining, if mother hold child's hands to prevent child from tearing the paper
19	Physically Refraining Non-task-related	Mother stops the child's action unrelated to the cookie (other kinds of controlling, restrictive behaviors) *Mom holds child's hands to prevent child from tearing the survey paper.*
20	Returning child's attention	Mother talks about the cookie (e.g., how it tastes…) and points to the cookie

	to cookie	*Mother says: "Look at the cookie."* *"How does the cookie taste like?"* *"This looks like a very nice cookie"* *"The cookie has your favorite colors"* *"Are you getting really hungry?"* *Mom holds up the cookie and asks: "What is this shape on the cookie?"* *Mother points to the face painted on the cookie and asks "Where are the teeth of this character?"*
21	Giving in to child's desire to hold cookie	Mother lets child to hold cookie
22	Giving in to child's desire to eat cookie	Mother lets child to take a bite from the cookie
23	Punitive Reactions	Mother scolds child or threatens child about consequences if he/she is not obedient *"No, we don't do it this way"* *"but you are not listening to me" (Mother says in a disappointing tone of voice rather than in an angry tone of voice)* *"the lady will be upset when she comes back"*
24	Ignore child's bid	Mother does not respond to child's bid verbally or non-verbally within 3 sec. *Child cries and mom is just answering the survey, does not look at child*

APPENDIX I

D.O.T.S. Emotion Coding System
Pamela M. Cole, Crystal N. Wiggins, Anna M. Radzioch, & Amanda M. Pearl

A. Emotion Codes

Sad (SAD) -disappointed, regretful, specific kind of unhappy, hopeless, dejected

Vocal Cues: Voice is lowered from previous volume without intention to whisper or drops off at end of utterance; if child is whining, these sad vocal cues must still be present for some part of the whining to give any sadness.

Facial Cues: Lip corners may begin to pull down, bottom lip may appear loose as in a pout (*note: pouts may also contain cues of anger*), eyes may droop, brow may form an oblique shape (^).

Posture/Gesture: Child's head may drop down and to the side, shoulders and/or body may slump or be slack, eye rubbing may be effort to catch or hide tears.

Angry (ANG) – frustrated, hostile, annoyed, irritated, mad

Vocal Cues: Voice becomes harsh, conveys protest, irritation, frustration, hostility, pitch is often louder and deeper, utterances have a plosive quality (as in the sound [p] in *pit*). Can include a contemptuous tone of voice. If whining HAS protest quality, code ANG.

Facial Cues: Brow may be furrowed (but there must be additional cues to code as anger), eyes can be narrowed as in a "hard stare", jaw clenched or set, mouth squared off if open, lips pressed or tightened if mouth closed.

Posture/Gesture: Arms akimbo (fists placed on each hip), finger wagging or jabbing. *Aggressive behaviors (e.g., punching) are* **NOT** *codable without additional anger cues*.

Neutral (0)
No signs of vocal, facial, or postural cues of any emotion. Voice sounds "matter of fact".

Non-codable (9)
Use this code when during the 15 second epoch either: 1. Emotion is present but not one included in the coding system (e.g., Surprise without Happiness or Disgust) or 2. You are unable to rate the child's emotions because you cannot see child's face or hear tone of voice.

B. Emotion Intensity Coding

Intensity of each emotion is coded on a 0 – 3 scale. Level of intensity is determined by the number and quality of emotion cues that are present in an episode.

Intensity Levels (note that there is a range of intensity in levels 1 – 3)
0- *No sign* of any cue for this emotion.

1- *Slight intensity* ranges from slightest perception of emotion cue to extended but mild level of intensity. Cues may be very brief, fleeting, or slight. If extended in duration, the cues must be faint or minimal. There may be only one cue present but if more than one present, must be slight, faint, minimal.

2- *Clear but moderate intensity* ranges from a brief but clear expression to an enduring but moderate level of intensity (in other words, expression could definitely be fuller but is not). More than one cue is likely to be present.

3- *Strong intensity* ranges from brief but full expression to full and more enduring expression of emotion. Typically there are multiple cues; body/gestures are likely but not necessary. Cues should be clear, unambiguous.

REFERENCES

Ayduk, O., Mendoza-Denton, R., Mischel, W., Downey, G., Peake, P.K., & Rodriguez, M. (2000). Regulating the interpersonal self: Strategic self-regulation for coping with rejection sensitivity. *Journal of Personality and Social Psychology, 79*, 776–792.

Brownell, C. A., & Kopp, C. B. (2007). Transitions in Toddler Socioemotional Development: Behavior, Understanding, Relationships. In C. A. Brownell, C. B. Kopp (Eds.), *Socioemotional development in the toddler years* (pp. 19-65). New York: The Guilford Press.

Berkowitz, L., & Harmon-Jones, E. (2004). Toward an understanding of the determinants of anger. *Emotion, 4*, 107–130.

Calkins, S. D. (1994). Origins and outcomes of individual differences in emotion regulation. *Monographs of the Society for Research in Child Development, 59(2/3)*, 53-72.

Calkins, S. D., & Dedmon, S. E. (2000). Physiological and behavioral regulation in two-year-old children with aggressive/destructive behavior problems. *Journal of Abnormal Child Psychology, 28(2),* 103-118.

Calkins, S. D., & Fox, N. A. (2002). Self-regulatory processes in early personality development: A multilevel approach to the study of childhood social withdrawal and aggression. *Development and Psychopathology, 14(3*), 477-498.

Calkins, S. D., Gill, K. L., Johnson, M. C., & Smith, C. L. (1999). Emotional reactivity and emotional regulation strategies as predictors of social behavior with peers during toddlerhood. *Social Development, 8(3),* 310-334.

Calkins, S. D., & Johnson, M. C. (1998). Toddler regulation of distress to frustrating events: Temperamental and maternal correlates. *Infant Behavior & Development, 21(3),* 370-395.

Campos, J.J. Campos, R.G. & Barrett, K.C. (1989). Emergent Themes in the Study of Emotional Development and Emotion Regulation, *Developmental Psychology*, *25*, 394-402.

Chan, S. M., Bowes, J., & Wyver, S. (2009). Parenting style as a context for emotion socialization. *Early Education and Development, 20,* 631–656.

Cole, P. M., Dennis, T. A. (2009). Variations on a theme: Culture and the meaning of socialization practices and child competence. *Psychological Inquiry: An International Journal for the Advancement of Psychological Theory, 9(4),* 276-278.

Cole, P. M., Martin, S. E., & Dennis, T. A. (2004). Emotion regulation as a scientific construct: Methodological challenges and directions for child development research. *Child Development, 75(2),* 317 – 333.

Cole, P.M., Tamang, B.L., & Shrestha, S. (2006). Cultural variations in the socialization of young children's anger and shame. *Child Development, 77,* 1237-1251.

Cole, P. M., Wiggins, C. N., Radzioch, A. M., & Pearl, A. M. (2007). D.O.T.S. Emotion Coding System. Department of Psychology, Pennsylvania State University.

Çorapçı, F. (2012). Ailede duygu sosyalleştirme süreci ve çocuğun sosyo-duygusal gelişimi. In M. Sayıl & B. Yağmurlu (Eds.), *Ebeveynlik El Kitabı: Kuram ve Araştırma.* Istanbul: Koç University Press.

Çorapcı, F., Aksan, N., & Yağmurlu B. (2012). Socialization of Turkish children's emotions: Do different emotions elicit different responses? *Global Study of Childhood, 2,* 106-117.

Diener, M. L., & Mangelsdorf, S. C. (1999). Behavioral strategies for emotion regulation in toddlers: Associations with maternal involvement and emotional expressions. *Infant Behavior and Development, 22(4),* 569-583.

Eisenberg, N., Fabes, R. A., & Murphy, B. C. (1996). Parents' reactions to children's negative emotions: Relations to children's social competence and comforting behavior. *Child Development, 67,* 2227–2247.

Eisenber, N., & Spinrad, T. L. (2004). Emotion-related regulation: Sharpening the definition. *Child Development, 75: 2,* 334 – 339.

Fabes, R. A., Leonard, S. A., Kupanoff, K., & Martin, C. L. (2001). Parental coping with children's negative emotions: Relations with children's emotional and social responding. *Child Development, 72,* 907-920.

Fabes, R. A., Poulin, R., Eisenberg, N., & Madden-Derdich, D. (2002). Psychometric properties of the coping with children's negative emotions scale. *Marriage and Family Review, 34(3/4),* 285-310.

Fagot, B. I. (1978). The influence of sex of child on parental reactions to toddler children. *Child Development, 49 (2),* 459-465.

Fişek, G. O., & Sunar, D. (2005). Contemporary Turkish Families. In J. L. Rooparine, & U. P. Gielen (Eds.), *Families in Global Perspective,* 169-183. Allyn and Bacon.

Fox, N. A., & Calkins, S. D. (2003). The development of self-control of emotion: Intrinsic and extrinsic influences. *Motivation and emotion, 27(1),* 7-26.

Friedlmeier, W., & Trommsdorff, G. (1999). Emotion regulation in early childhood. *Journal of Cross-Cultural Psychology, 30,* 684–711.

Friedlmeier, W., Corapci, F., Cole, P. M. (2011). Emotion socialization in cross-cultural perspective. *Social and Personality Psychology Compass 5(7),* 410–427.

Gilliom, M., Shaw, D. S., Beck, J. E., Schonberg, M. A., & Lukon, J. E. L. (2002). Anger regulation in disadvantaged preschool boys: Strategies, antecedents, and the development of self-control. *Developmental Psychology, 38(2),* 222-235.

Grolnick, W. S., Bridges, L. J., & Connell, J. P. (1996). Emotion regulation in two year olds: Strategies and emotional expression in four contexts. *Child Development, 67(3),* 928-941.

Grolnick, W. S., Kurowski, C. O., Mcmenamy, J. M., Rivkin, I., & Bridges, L. J. (1998). Mothers' strategies for regulating their toddlers' distress. *Infant Behavior & Development, 21(3),* 437-450.

Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology, 39(3),* 281-291.

Gross, J. J., & Thompson, R.A. (2007). Emotion regulation: Conceptual foundations. In J.J. Gross (Ed.), *Handbook of emotion regulation.* New York: Guilford Press.

Holden, G. W. & Edwards L. A. (1989). Parental attitudes toward child rearing: Instruments, issues, and implications. *American Psychology Association, Psychological Bulletin, 106(1),* 29-58.

Izard, C. E, Woodburn, E. M., & Finlon, K. J. (2010). Expending emotions science to the study of discrete emotions in infants. *Emotion Review, 2(134),* 134-138.

Jahromi, L. B., Putnam, S. P., & Stifter C. A. (2004). Maternal regulation of infant reactivity from 2 to 6 months. *Developmental Psychology, 40(4),* 77–487.

Kağıtçıbaşı, Ç. & Ataca, B. (2005). Value of children and family change: a 3-decade portrait from Turkey. *Applied Psychology: An International Review, 54,* 317-137.

Keller, H., Yovsi, R., Borke, J., Kärtner, J., Jensen, H., & Papaligoura, Z. (2004). Developmental consequences of early parenting experiences: Self-recognition and self-regulation in three cultural communities. *Child Development,* 1745-1760.

Kochanska, G., & Aksan, N. (1995). Mother-Child Mutually Positive Affect, the Quality of Child Compliance to Requests and Prohibitions, and Maternal Control as Correlates of Early Internalization. *Child Development, 66(1),* 236–254.

Kochanska, G., & Aksan, N. (2006). Children's conscience and self-regulation. *Journal of Personality, 74(6),* 1587-1617.

Kochanska, G., Murray, K. T., Harlan, E. T. (2000). Effortful control in early childhood continuity and change, antecedents, and implications for social development. *Developmental Psychology, 36(2),* 220-232.

Kochanska, G., Coy, K. C., & Murray, K. T. (2001). The development of self regulation in the first four years of life. *Child Development, 72(4),* 1091-1111.

Kochanska, G., Philibert, R. A., & Barry, R. A. (2009). Interplay of genes and early mother–child relationship in the development of self-regulation from toddler to preschool age. *Journal of Child Psychology and Psychiatry, 50(11),* 1331–1338.

Kopp, C. B. (1982). Antecedents of self-regulation: A developmental perspective. *Developmental Psychology, 18,* 199–214.

Kopp, C. B. (1989). Regulation of distress and negative emotions: A developmental view. *Developmental Psychology, 25(3),* 343.

Lecuyer, E., & Houck, G. M. (2006). Maternal limit-setting in toddlerhood: Socialization strategies for the development of self-regulation. *Infant Mental Health Journal, 27(4),* 344-370.

Metcalfe, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review, 106(1),* 3-19.

Mirabile, S. P., Scaramella, L. V., Sohr-Preston, S. L., & Robison, S. D. (2009). Mothers' socialization of emotion regulation: The moderating role of children's negative emotional reactivity. *Child Youth Care Forum, 38,* 19–37.

Mischel, W., Shoda, Y., & Peake, P. K. (1988). The nature of adolescent competencies predicted by preschool delay of gratification. *Journal of Personality and Social Psychology, 54,* 687–696.

Mischel, W., Shoda, Y., & Rodriguez, M. L. (1989). Delay of gratification. *Science, 244,* 933- 938.

Morris, A. S., Silk, J. S., Morris, M. D. S., Steinberg, L., Aucoin K. J., & Keyes, A. W., (2011). The influence of mother–child emotion regulation strategies on children's expression of anger and sadness. *Developmental Psychology, 47,* 213-225.

Nacak, M., Yağmurlu, B., Durgel, E., & Van de Vijyer. F. (2011). Metropol ve Anadolu'da Ebeveynlik: Biliş ve Davranışlarda Şehrin ve Eğitim Düezyinin Rolü. *Türk Psikoloji Dergisi, 26 (67),* 85-100.

Putnam S. P., Gartstein M. A., & Rothbart, M. K. (2006). Measurement of fine-grained aspects of toddler temperament: The Early Childhood Behavior Questionnaire. *Infant Behavior & Development, 29,* 386–401.

Putnam S. P., & Rothbart, M. K. (2006). Development of short and very short forms of the children's behavior questionnaire. *Journal of Personality Assessment, 87(1),* 103–113.

Putnam, S. P., Spritz, B., & Stifter, C. (2002). Mother-child co-regulation during delay of gratification at 30 months. *Infancy, 3,* 209-225.

Raikes, H. A., Robinson, J. A. L., Bradley, R. H., Raikes, H. H., & Ayoub, C. C. (2007). Developmental trends in self-regulation among low-income toddlers. *Social Development, 16(1),* 128-149.

Rawal, V. V. & Martini, T. S. (2009). Maternal socialization of children's anger, sadness, and physical pain in two communities in Gujarat, India. International Journal of Behavioral Development, 33 (3), 215-229.

Rha, J. (2000). Delay of gratification in infancy: Effects of infants' temperament and parenting. *Journal of Korean Home Economics Association English Edition, 1(1),* 59-77.

Rodriguez, M. L., Ayduk, O., Aber, J. L., Mischel, W., Sethi, A., & Shoda, Y. (2005). A contextual approach to the development of self regulatory competencies: The role of maternal unresponsivity and toddlers' negative affect in stressful situations. *Social Development, 14(1),* 136-157.

Rothbart, M. K. (1989). Temperament in childhood: A framework. In G. A. Kohnstamm, J. Bates, & M. K. Rorthbart (Eds.), *Temperament in Childhood* (pp. 59-70). *England:* Wiley.

Rothbart, M. K., & Jones, L. B. (1998). Temperament, self-regulation, and education. *Social Psychology Review, 27 (4),* 479-491.

Rortbart, M. K., Ahadi, S. A., & Evans, D. E. (2000). Temperament and personality: Origins and outcomes. *Journal of Personality and Social Psychology, 78(1),* 122-135.

Rubin, K. H., Coplan, R. J., Fox, N. A., & Calkins, S. D. (1995). Emotionality, emotion regulation, and preschoolers' social adaptation. *Development and Psychopathology, 7,* 49-49.

Sethi, A., Mischel, W., Aber, J. L., Shoda, Y., & Rodriguez, M. L. (2000). The role of strategic attention deployment in development of self-regulation: Predicting preschoolers' delay of gratification from mother–toddler interactions. *Developmental Psychology, 36(6),* 767.

Shields, A., Dickstein, S., Seifer, R., Giusti, L., Magee, K., & Spritz, B. (2001). Emotional competence and early school adjustment:Astudy of preschoolers at risk. *Early Education and Development, 12,* 73–96.

Shoda, Y., Mischel, W., & Peake, P. K. (1990). Predicting adolescent cognitive and self-regulatory competencies from preschool delay of gratification: Identifying diagnostic conditions. *Developmental Psychology, 26(6),* 978-986.

Silverman, I. W. (2003). Gender differences in delay of gratification: A meta-analysis. *Sex Roles, 49 (9/10),* 451-463.

Spinrad, T. L., & Stifter, C. A. (2006). Toddlers' empathy related responding to distress: Predictions from negative emotionality and maternal behavior in infancy. *Infancy, 10(2),* 97-121.

Spinrad, T. L., Stifter, C. A., Donelan-McCall, N., & Turner, L. (2004). Mothers' regulation strategies in response to toddlers' affect: Links to later emotion self-regulation. *Social Development, 13(1),* 40-55.

Sunar, D. (2002). Change and continuity in the Turkish middle class family. In E. Özdalga & R. Liljestrom (Eds.), *Autonomy and dependence in family: Turkey and Sweden in critical perspective* (pp. 217-237). İstanbul: Swedish Research Institute.

Supplee, L. H., Skuban, E. M., Shaw, D. S., & Prout, J. (2009). Emotion regulation strategies and later externalizing behavior among European American and African American children. *Development and Psychopathology, 21(02),* 393-415.

Thompson, R. A. (1994). The development of emotion regulation: Biological and behavioral considerations. *Monograpshs of the Society for Research in Child Development, 59(2/3),* 25-52

Thompson, R. A & Goodvin, R. (2007). *Taming the Tempest in the Teapot: Emotion Regulation in Toddlers.* In C. A. Brownell, C. B. Kopp (Ed.), Socioemotional Development in the Toddler Years (pp. 320-341). New York: The Guilford Press.

Thompson, R. A & Meyer, S. (2007*).* Socialization of emotion regulation in the family. In Gross, J. (Eds.), *Handbook of Emotion Regulation* (pp. 249-268). New York: Guilford Press.

Vaughn, B. E., Kopp, C. B., & Krakow, J. B. (1984). The emergence and consolidation of self-control from eighteen to thirty months of age: Normative trends and individual differences. *Child Development*, 990-1004.

Walter, M., Shoda, Y., & Rodriguez, M. L. (1989). Delay of gratification in children. *Science*, *244*, 933–938.

Wang, Q. (2006). Relations of maternal style and child self-concept to autobiographical memories in Chinese, Chinese Immigrant, and European American 3-year-olds. *Child Development, 77,* 1794–1809.

Yagmurlu, B. & Altan, O. (2010). Maternal Socialization and Child Temperament as Predictors of Emotion Regulation in Turkish Preschoolers, *Infant and Child Development*, 19, 275-296.