

**The Relationship between Maternal Ratings of Internalizing and
Externalizing Symptoms and Observed Anger and Sadness Expressions of
Preschool Children**

by

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Abstract

Emotional development in preschool age is essential for concurrent and later social and academic adjustment (Cole, Michel, & Teti, 1994; Saarni, 1999; Denham, 1998). Emotional reactivity, in particular negative emotionality, and its relations to adjustment problems has been theoretically and empirically studied in the literature of developmental psychopathology (Crick & Zahn-Waxler, 2003; Nigg, 2006; Patrick & Bernat, 2006). However, literature provides limited information on the specific mechanisms that link negative emotionality, especially anger and sadness expressions, to internalizing and externalizing symptoms. In addition, our understanding on the basic normative aspects of anger and sadness expressions in response to different eliciting contexts during preschool age is limited. The present study has two major goals: First goal was to assess contextual variability in anger and sadness expressions of preschoolers as a function of age and gender. Anger and sadness expressions of 130 children were observed in two different laboratory contexts, interpersonal and non-interpersonal. The second goal of the study was to concurrently predict maternal reports of preschoolers' internalizing and externalizing symptoms using their observed anger and sadness expressions and contextual variability in emotional reactivity. Results showed that, anger and sadness expressions of children significantly differed across the two contexts. All children showed greater levels of anger and sadness expressions in the interpersonal contexts. Observed anger and sadness expressions failed to concurrently predict mother reports of internalizing and externalizing symptoms. Results of the study were discussed in relation to observed effects of contextual variability in emotion expressions on symptom elevations with moderating effects of age and gender. Further, limitations of the findings were discussed in terms of generalizability, and strengths of the study within the theme of measurement confound.

Keywords: Emotion Expression, Emotional Reactivity, Anger, Sadness, Adjustment Problems, Internalizing and Externalizing Symptoms.

Özet

Anaokulu çağında duygusal gelişim, kişinin güncel ve ileriki dönemlerde sosyal ve akademik becerileri ve uyumu için çok önemlidir (Cole, Michel, & Teti, 1994; Saarni, 1999; Denham, 1998). Teorik ve ampirik olarak gelişimsel psikopatoloji literatüründe, özellikle olumsuz duygusal tepkiselliğin, uyum problemleriyle ilişkisi araştırılmış olmasına rağmen (Crick & Zahn-Waxler, 2003; Nigg, 2006; Patrick & Bernat, 2006), literatür olumsuz duygusallık, özellikle kızgınlık ve üzüntü ifadeleri, ile içselleştirme ve dışsallaştırma davranım bozuklukları arasındaki ilişkinin özgün mekanizmalarıyla ilgili kısıtlı bilgi sunmaktadır. Ayrıca, anaokulu çağında farklı bağlamlarda uyaranlara tepki olarak gösterilen kızgınlık ve üzüntü ifadelerinin temel normatif özellikleri hakkındaki gözlemsel araştırmalar da sınırlı düzeydedir. Bu araştırmanın iki temel amacı bulunmaktadır: Birinci amaç, anaokulu çocuklarının kızgınlık ve üzüntü ifadelerindeki bağlamsal değişkenliği yaş ve cinsiyet farklılıklarına bağlı olarak ölçmektir. 130 çocuğun kızgınlık ve üzüntü ifadeleri, biri ilişkisel, diğeri ilişkisel olmamak üzere iki farklı laboratuvar koşulunda gözlemlenmiştir. Araştırmanın ikinci amacı, anaokulu çocuklarının kızgınlık ve üzüntü ifadeleri ile duygusal tepkiselliklerindeki bağlamsal değişkenliği kullanarak, annelerinin raporlarına dayanan içselleştirme ve dışsallaştırma belirtilerini güncel olarak yordamaktır. Bulgulara göre, çocukların hem kızgınlık hem de üzüntü ifadeleri iki bağlamda anlamlı olarak farklılık göstermiştir. Tüm çocuklar ilişkisel olmayan bağlama göre ilişkisel bağlamda daha fazla kızgınlık ve üzüntü göstermişlerdir. Gözlemlenmiş kızgınlık ve üzüntü ifadeleri, anne raporlarına dayanan içselleştirme ve dışsallaştırma belirtilerini anlamlı düzeyde yordamamıştır. Araştırma bulguları, duygu ifadelerindeki bağlamsal değişkenliğin belirtiler üzerindeki gözlemlenmiş etkileri; yaş ve cinsiyetin şartlı değişken etkileri ile birlikte değerlendirilerek tartışılmıştır. Ek

olarak, bulguların genellenebilirliđi, ölçüm yöntemleri ve metodolojik bağlamda araştırmanın güçlü ve zayıf yönleri tartışılmıştır.

Anahtar Kelimeler: Duygu İfadesi, Duygusal Tepkisellik, Kızgınlık, Üzüni, Uyum Problemleri, İçselleştirme ve Dışsallaştırma Belirtileri.

Introduction

Studying emotional development is crucial to an understanding of the development of empathy, prosocial behaviors, social competence, peer and family relations, and school adjustment (Campos, Barrett, Lamb, Goldsmith, & Stenberg, 1983; Denham, 1998; Eisenberg, Fabes, & Guthrie, 2000; Fox & Calkins, 2003; Paulussen-Hoogeboom, Stams, Hermanns, & Peetsma, 2007; Saarni, 1999). In addition, context and/or age inappropriate expressions of emotion are often regarded as symptoms of maladaptive functioning (Cole, Michel, & Teti, 1994; Jenkins & Oatley, 2000; Eisenberg et al., 2001a; Eisenberg, Spinrad, & Morris, 2002; Goldsmith & Davidson, 2004; Hill, Degnan, Calkins, & Keane, 2006). Hence, from a developmental psychopathology perspective, identifying normative and non-normative aspects of emotion expressions and their relations to adjustment problems are critical (Cole et al., 1994; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000; Eisenberg et al., 2000; Bell & Calkins, 2000; Jenkins & Oatley, 2000; Crick & Zahn-Waxler, 2003; Fox & Calkins, 2003; Bridges, Denham, & Ganiban, 2004; Patrick & Bernat, 2006; Nigg, 2006).

Despite its importance, our understanding of basic, normative differences in emotion expressions during development and the links between individual differences in emotional reactivity and pathology remain limited. Literature is largely silent on differences in emotion expressions across different eliciting contexts, i.e. contextual consistency in emotional reactions between interpersonal or non-interpersonal contexts, and/or variability in basic discrete emotion expressions in the same context, such as variability in anger or sadness reactions, either within or across individuals. For example, studies that examine age and gender differences in observed

emotional behavior, consistency in emotional reactivity from one context to another, coherence across various dimensions of emotional reactivity such as anger proneness or fearfulness either during infancy or preschool years are few and far in between (Hayden , Klein, & Durbin, 2005; Kochanska, 1998; Cole et al., 1994; Zahn-Waxler et al., 2000; Jenkins & Oatley, 2000; Crick & Zahn-Waxler, 2003; Bridges et al., 2004). Dearth of studies that address such basic questions relying on observational methodology can be explained partly by the expensive and labor-intensive nature of the methodology.

Studies which investigate emotional reactivity and pathology links show that negative affectivity in particular has been associated with the elevations in internalizing and externalizing symptoms from toddler age through adolescence (Zahn-Waxler et al., 2000; Crick & Zahn-Waxler, 2003; Nigg, 2006). However, our understanding of the links between specific aspects of emotionality and elevations in symptoms have only been recently addressed (e.g. Jenkins & Oatley, 2000; Crick & Zahn-Waxler, 2003; Van Tijen, Stegge, Terwogt, & Panhuis, 2004; Bridges et al., 2004; Hayden et al., 2005; Stifter, Putnam, & Jahromi, 2008; Hubbard, 2001).

Most of the studies that investigate emotion and psychopathology links often rely on parental assessment of both symptoms and emotionality (e.g. Eisenberg et al., 2001a; Eisenberg et al., 2005; Eisenberg, Ma, Chang, Zhou, West, & Aiken, 2007; Rydell, Berlin, & Bohlin, 2003; Olson, Sameroff, Kerr, Lopez, & Wellman, 2005; Smeekens, Riksen-Walraven, & Van Bakel, 2007). Because this methodology inflates the correlations between emotion and psychopathology due to both shared method and rater variance, those correlations continue to be discussed and examined in the framework of measurement confounding (Bates, 1990, as cited in Sanson, Prior, & Kyrios, 1990; Lemery et al., 2002; Lengua et al., 1998; Sanson et al., 1990). In addition, these assessment tools were debated to be insensitive to capture variability between the

two constructs due to high item and content overlap issue (Sanson et al., 1990). Furthermore, questionnaire based assessments often lack the sought-after specificity in measuring emotional reactivity (Zahn-Waxler et al., 2000; McDermott & Fox, 2007).

One way to deal with both shared method and rater variance is to rely on observational measurement of emotional reactivity. Limited evidence indicates that observer measures of emotionality predict symptom elevations (e.g. Kagan & Snidman, 1999; Kagan, Snidman, & Zentner, 1999; Jenkins & Oatley, 2000; Stifter et al., 2008). Such studies have concentrated on the relation of behavioral inhibition and related constructs with symptom elevations. However, literature is largely silent on the relation of observer measures of anger and sadness in relation to symptom elevations.

This study had two goals. The first goal was to use observer measures of emotional reactivity in anger and sadness in two different experimental contexts, characterized as interpersonal and non-interpersonal, and to examine age and gender differences across the preschool years, and extent of coherence in these reactions across contexts (i.e. higher or lower levels of anger and sadness expressions in two different contexts). The second goal of this study was to examine whether observer measure of anger and sadness helped predict elevations in symptoms as reported by mothers and whether cross-contextual consistency in emotional responses improved prediction of symptoms.

I. Literature Review and Focus of the Current Study

1. Perspective on Emotion

The contemporary view of emotions widely accepts the functionalist perspective. In this perspective, emotions are quick and dirty response profiles that evolved to promote species survival with two primary adaptive functions: self-regulation and communicative functions that serve to regulate interpersonal interactions (Campos et al., 1983; Bretherton, Fritz, Zahn-Waxler, & Ridgeway, 1986; Berkowitz, 1988; Campos, Campos, & Barrett, 1989; Cole et al., 1994; Saarni, Mumme, & Campos, 1998; Fox & Calkins, 2003; Izard & Ackerman, 2004; Lemerise & Dodge, 2004; Frijda, 2005). Basic discrete emotions such as anger, fear, joy etc. arise in response to appraisals of events in the external environment or internal cognitive events such as memories in terms of their aversive or incentive consequences for the individual's goals. Basic discrete emotions give rise to action tendencies which are in turn associated with physiological markers and behavioral responses (Goldsmith, & Stenberg, 1983; Lazarus, 1991; Izard, 1993; Cole et al., 1994; Rothbart & Bates, 1998; Frijda, 2005; Fox & Calkins, 2003; Bridges et al., 2004; Scherer & Ellgring, 2007).

For example, fear is typically elicited in response to appraisals of threat or novelty and associated uncertainty, joy is elicited in response to appraisals of goal attainment, sadness in response to goal unattainment and loss, and anger in response to goal blockage or perceptions of unfairness. Those appraisal-emotion families are followed by action tendencies that promote self-regulation. For example, joy is associated with the action tendency of approach, for fear with escape or freeze, for sadness with withdrawal and resignation, and for anger with fight or persistence to overcome obstacles (Jenkins & Oatley, 1996; Saarni et al., 1998; Lemerise &

Dodge, 2004; Frijda, 2005; Nigg, 2006; Carver & Harmon-Jones, 2009a; Carver & Harmon-Jones, 2009b). It is those action tendencies that promote self-regulation, because they motivate the self to act in adaptive ways to his/her environment and organize social interactions in the environment, which in turn helps the individual to reach his/her goals.

Emotions also serve to regulate the social interactions by serving communicative functions. For example, communicative functions of sadness include signaling the need for help and comfort from other individuals by creating empathic distress in them; whereas anger expression communicates an exhibition of power that signals conflict of self-interests, challenges the opponent to retreat and signals defense of protective boundaries against offenses. In this sense, emotion expressions increase the survival chance of the individual as well as the group. Prior to emergence of expressive language, emotion expressions serve as the chief medium of communication between infants and their caretakers (Bretherton et al., 1986; Frijda, 2005; Izard & Ackerman, 2004; Malatesta, Culver, Tesman, & Shepard, 1989).

1.a. The Role of Culture in Emotion

Culture is defined “as the set of attitudes, values, beliefs, and behaviors shared by a group of people, communicated from one generation to the next” (Matsumoto, 1997, p.5, as cited in Garrett-Peters & Fox, 2007). Culture is thought to influence the way individuals appraise emotion eliciting situations and express emotions relying on internalized display rules that reflect gender role stereotypes, such that girls show less anger and boys show less sadness from toddlerhood and childhood (e.g. Buss & Kiel, 2004; Camras et al., 1998; Dennis, Zahn-Waxler, & Mizuta, 2002; Chaplin et al., 2005; Cole, Bruschi, & Tamang, 2002) to adulthood (e.g. Brody, 1999, as cited in Brody and Hall, 2004; Brody and Hall, 2004; Garrett-Peters & Fox, 2007; Kağıtçıbaşı, 1996; Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998; Mesquita &

Frijda, 1992; Safdar et al., 2009). Cultures also vary with respect to emotion display rules (Ekman, 1999, as cited in Matsumoto, 2004; Matsumoto et al., 1998; Matsumoto et al., 2009). Display rules “are learned culture specific rules that convey what is socially appropriate or desirable in certain social contexts and underlie the management and regulation of emotional expression” (Ekman and Friesen, 1975, as cited in Garrett-Peters & Fox, 2007, p.161).

Parental socialization of emotions help children gain knowledge and understanding of the display rules, and shape and guide their children in the regulation of their emotion expressions consistent with display rules (Cole et al., 1994; Denham, 1998; Dennis et al., 2002; Brody & Hall, 2004; Chaplin et al., 2005; Garrett-Peters & Fox, 2007). However, effects of display rules on emotion expressions are not fully observed until primary school despite preschoolers’ increased understanding of display rules (Fox & Calkins, 2003; Lemerise & Dodge, 2004).

Cross-cultural studies mostly examine differences in display rules and dimensions of complex appraisal with respect to collectivism and individualism distinctions (Camras et al., 1998; Cole et al., 2002; Dennis et al., 2002; Eisenberg et al., 2007; Garrett-Peters & Fox, 2007). The current study is of special significance to the literature on emotion expression with regard to its sample, which consists of Turkish preschool children, from a relatively less studied culture in the literature on emotion expression compared to Western, mostly American and European, and Asian, mostly Chinese, Japanese and Indian, cultures. However, the current study does not focus on cross-cultural differences in emotion expressions.

1.b. Emotion Development

Initial studies that examined the facial expressions of emotions among infants showed that within the first year of life, infants show all basic emotions (i.e. interest, joy, anger, distress, sadness, fear, and surprise) (Campos et al., 1983; Izard, 1993). For example, joy in response to

social stimuli emerges as early as 3 weeks, anger and sadness expressions emerge by the third month of life but at first are not always meaningfully associated with stimulus incentive value, and fear emerges in the second half of the first year. Ability to mask emotions emerges by the second birthday (Cole, 1986) as socialization pressures to regulate conduct appropriate with expectations begin to increase during the second year (Kopp, 1982). During the preschool years, research focus shifts to children's emotion understanding, the links between physiological and emotional reactivity (e.g. Kagan et al., 1999; Fox & Calkins, 2003, Stifter et al., 2008), and self-conscious emotions (e.g. Tangney, 2001; Olthof, 2000; Ferguson, Stegge, Eyre, Vollmer, and Ashbaker, 2000). Hence, our understanding of the ways in which basic emotion expressions longitudinally or cross-sectionally differ throughout the preschool years remains poor with a few recent exceptions (e.g., Jenkins & Oatley, 2000; Chaplin et al., 2005; Durbin et al., 2007), findings of which studies are reviewed in the following sections in detail in relation to the variables of this study. One of the primary aims of this study was to fill this gap partially by focusing on cross-sectional differences in emotional reactions, in particular anger and sadness, as a function of age and gender during the preschool years.

In order to examine individual differences in anger and sadness reactions during the preschool years, we selected two tasks from a laboratory assessment battery of observed temperament (LAB-TAB, Goldsmith et al., 1993). Significant individual difference variability in emotion expressions or emotional reactivity, is studied under the rubric of temperament, the affective core of later personality (Campos et al., 1983; Rothbart & Ahadi, 1994). While the goal of this study was not to measure temperamental anger or sadness proneness, those assessment batteries are useful in studying emotional behavior under controlled and systematically varying appraisal conditions. For this study we selected two tasks, an

interpersonal and a non-interpersonal context. In the interpersonal context, the appraisal condition was one of being cheated out of one's fair share, (not sharing episode) and in the non-interpersonal context, the appraisal condition was one of goal-blocking (transparent box). Hence, a related goal of the study was to examine differences in the level of anger and sadness reactions across the two contexts, and examine the degree of cross-contextual consistency from one context to the other. Following a review of the literature with respect to age and gender differences and cross-contextual coherence in anger and sadness, the hypotheses of the current study will be presented.

1.b.1. Age Differences in Anger and Sadness Expressions

Literature on age differences in anger and sadness expressions is very limited to a few studies that used observer measures, and available studies largely focus on expressions of infants and toddlers rather than preschoolers. During the first two years of life, anger and sadness expressions of children were found to increase in frequency and become more goal directed. For example infants showed differentiated anger to painful injections as early as 8 weeks, and showed differentiated anger in arm restraint task as early as 16 weeks (Izard, 1993). A study found cross-sectional differences with regard to observed facial expressivity of anger in two different contexts, a blocked access to a desirable toy and the other a contradiction of expectancy (Kearney, 2004). In this study, older group (12-14 month olds) of infants showed anger expressions at a greater percentage of time and more goal directed aggressive response than the younger group (7-9 month olds) did. In addition, the younger group showed more non-purposeful aggression compared to the older group (Kearney, 2004). In a longitudinal study, anger expressions of infants in arm restraint task were found to increase between two times of

assessments, from 4 months to 12 months of age (Bennett, Bendersky, and Lewis, 2005).

Negative emotion expressions, specifically sadness expressions after painful inoculations, were observed to increase from 3 to 18 months of age (Axia & Bonichini, 1998, as cited in Buss & Kiel, 2004).

During the preschool years, findings regarding age differences in anger and sadness expressions are inconsistent, with some studies reporting change while others failing to find any age differences. For example, a cross-sectional study of 3 and 4 year olds failed to find any age differences in anger in three different contexts –transparent box, impossibly perfect green circles, and box empty paradigms- (Durbin, Klein, Hayden, & Olino, 2005). Jenkins and Oatley, (2000) also failed to find any age differences in naturalistically observed anger and sadness expressions among 4 to 8 year olds. A longitudinal study of 4 to 6 year olds failed to find any age differences in anger and sadness expressions of girls, and in anger expressions of boys in interactions with parents during a competitive game (Chaplin et al., 2005). However, in the same study sadness expressions of boys decreased with age. Another longitudinal study of 6 to 9 year-old children also failed to find any age differences in teacher reported anger and sadness expressions, yet they found that parent reported anger expressions decrease with age (Eisenberg et al., 2005).

It is possible that those inconsistencies with regard to age differences reflect the role of socialization factors that are also shaping emotional reactivity over age. For example, Kochanska (2001) found in a longitudinal study with infants from 9 to 33 months of age that securely attached children show less anger and insecurely attached children show more anger as they grow in response to car seat, arm restraint, and toy retraction tasks. In the current study age differences in anger and sadness expressions of preschoolers were investigated in two contexts.

Due to the limited evidence and inconsistencies in age differences in emotion expressions, in the current study age differences in anger and sadness expressions is an exploratory examination.

1. b.2. Gender Differences in Anger and Sadness Expressions

Most studies on emotion expressions of infants and toddlers failed to find gender differences in anger and sadness expressions. For example, a study of 8-10 months old infants failed to find any gender differences in anger expressions in three different contexts -car seat, arm restraint, and toy retraction- (Kochanska et al., 1998). A cross-sectional study of 7 to 9 month old and 12 to 14 month old infants examined anger expressions in two different goal frustration contexts - one with a blocked access to a desired toy and the other with a contradiction of expectancy- (Kearney, 2004). This study also failed to find any gender differences in anger expressions in the contradiction of expectancy context. However, in the blocked access to a desired toy context, boys in the older group showed anger expressions for a longer time than younger infants and girls (Kearney, 2004). In addition, a longitudinal study of 2½ to 22 months old infants failed to find any gender differences in anger expressions (Malatesta et al., 1989).

Findings of gender differences in anger and sadness in preschool period are mixed. Among the studies with positive findings, we find that Durbin et al. (2005) who reported that 3-4 year-old boys showed higher levels of anger than girls in three different contexts –transparent box, impossibly perfect green circles, and box empty paradigms. Similarly, in a longitudinal study with both questionnaire measures and daily, naturalistic observations during free play activities in fall and spring semesters, boys showed more anger compared to girls (Spinrad et al., 2004). 4 to 5 year old girls were observed to show less anger and sadness in two laboratory contexts characterized by interpersonal and non-interpersonal disappointment (Cole, Zahn-Waxler, and

Smith, 1994). In a longitudinal study of 4 to 6 year-olds, girls showed more observed sadness than boys during a competitive game with parents (Chaplin et al., 2005).

Other studies, however, have not supported gender differences in anger or sadness during preschool period. For example, Chaplin et al., 2005 did not find any gender differences in anger in interactions with parents during a competitive game from 4 to 6 years of age (Chaplin et al., 2005). Another study with 3-5 year old Nepali children also failed to find any gender differences in naturalistically observed anger expressions during family interactions (Cole, Tamang, and Shrestha, 2006). Gender differences in observed anger expressions in response to disappointing gift task was also not found in a cross-cultural study with 4-5 year old European Americans and Chinese Americans (Garrett-Peters and Fox, 2007). Another cross-cultural study with 4-6 year old American and Japanese children also failed to find gender differences in observed anger expressions in a waiting laboratory task with their mothers for both American and Japanese children (Dennis et al., 2002). Gender differences were not found in naturalistically observed anger and sadness expressions during recess time at school among 4 to 8 year olds (Jenkins & Oatley, 2000). The inconsistency of gender differences might stem because preschoolers may not act according to the gender specific display rules despite their knowledge (Fox & Calkins, 2003; Lemerise & Dodge, 2004).

Influences of cultural display rules and gender role socialization become more obvious during elementary school period compared to preschool years with gender differences in anger and sadness expressions more clearly. For example, in a longitudinal study with 6 to 9 years old children, girls were found to show more sadness based on parent reports and boys were found to show more anger based on teacher reports (Eisenberg et al., 2005). Another study with 8 years old Chinese children found that boys showed higher levels of anger compared to girls based on

teacher reports (Eisenberg et al., 2007). In addition, a study with second grade African-American children, boys showed more anger than girls in two experimental competitive game contexts, one with a fair and the other with a cheating confederate (Hubbard, 2001). However, no gender differences in sadness expressions were observed in the same study (Hubbard, 2001).

Generally studies that have focused on sadness are fewer in number compared to studies that examined anger. However, the available evidence suggest that when gender differences are found, the general tendency is that boys show more anger than girls, and girls show more sadness than boys (Brody & Hall, 2004; Safdar et al., 2009). Lack of consistent gender differences suggests that differences between the genders may be more evident in some contexts and not others. In the current study I examined gender differences in both anger and sadness in two contexts, an interpersonal and a non-interpersonal context. Turkey is a relatively collectivistic culture compared to European and American societies and in collectivist cultures girls are socialized to show less anger and to be more submissive than boys (Cole et al., 2002; Matsumoto et al., 1998). Accordingly, in the current study girls were expected to show less anger expressions compared to boys in both contexts. In the interpersonal context girls are expected to show more sadness than boys because they are suggested to be more interpersonally oriented (Zahn-Waxler et al., 2000).

1.b.3. Cross-contextual differences and cross-contextual variability

As noted earlier, anger and sadness reactions were observed in two different incentive conditions to address two questions: a) do both contexts give rise to similar levels of anger and similar levels of sadness b) what is the extent of cross-contextual coherence in anger and sadness reactions in the two contexts.

The interpersonal context (Not Sharing) was designed to elicit anger and sadness expressions due to perceptions of unfair treatment. In this context, the experimenter creates an expectation of fair sharing a bag of candies with the child. However, after three trials of fair sharing the experimenter begins to cheat until she finally takes all of the candies including those already given to the child. Next, the experimenter asks the child's opinion about the situation and avoids eye contact or any interaction for 30 seconds. The non interpersonal context (Transparent Box) was designed to elicit anger and sadness expressions due to perceptions of goal blockage. Here, the child is given a previously selected toy locked in a transparent box with a set of non matching keys. Then for 2 min the experimenter leaves the child by him/her self while appearing busy and unresponsive to the child's help requests. At the end of the 2 minutes, the experimenter comes and gives the child the matching key explaining that she mixed up the keys unintentionally.

Majority of studies that rely on observational measures of emotional reactivity rely on data reduction strategies that make it difficult to examine differences in the level of a given emotion from one context to another (e.g. Durbin et al., 2007; Hayden et al., 2005). Hence, it is difficult to inform predictions that one context will elicit more or less anger and sadness than the other. An examination of the few available studies that addressed this issue suggests the findings may be inconsistent. For example, anger and sadness expressions of 4 and 5 year old preschoolers were observed in two experimental contexts, an interpersonal and the other a non-interpersonal disappointment paradigm (Cole et al., 1994b). In that study, less negative emotions were observed in the interpersonal disappointment context compared to the non-interpersonal disappointment context. Hubbard (2001) observed anger and sadness expressions in second grade African-American children in two experimental competitive game contexts, one with a fair

and the other with a cheating confederate. In this study, all children showed more anger and more sadness in the cheating context.

In collectivist societies expressing anger in an interpersonal context may constitute a threat to interpersonal relationships and to harmony, as it will be against the cultural emphasis on relatedness and challenging socialization practices regarding obedience (Cole et al., 2002; Cole et al., 2007; Dennis et al., 2002; Garrett-Peters & Fox, 2007; Safdar et al., 2009; Matsumoto et al., 2008). Hence, expressing anger in a non-interpersonal context may be more appropriate to cultural and social norms in collectivist cultures. Since Turkey is a relatively collectivist society, all children in the current study might be expected to show less anger expressions in the interpersonal context compared to the non-interpersonal context. However, the interpersonal context may also constitute a greater violation of cultural norms to threaten interpersonal relationships and harmony and therefore evoke stronger emotional reactions.

Some recent studies show that differences in social and emotional outcomes of children that are predicted by parental socialization and cultural display rules can hardly be explained by only differences in individualism-collectivism dimension (e.g. Yagmurlu & Sanson, 2009; Yagmurlu et al, 2009). Accordingly Yagmurlu & Sanson (2009) examined parenting, temperament, and sociocultural context as predictors of observed prosocial behavior in Australian and Turkish Australian preschoolers' and found that cultural differences in temperament were not found when SES was controlled. In another study, comparisons of socialization goals among Turkish mothers from high SES and low SES backgrounds showed that high SES mothers value autonomy and self-enhancement in contrast to the low SES mothers, who value relatedness and obedience (Yagmurlu et al., 2009). These findings suggest that SES might play an important role shaping emotional display rules of Turkish children. As our sample of preschoolers are from high SES

families, where mothers are highly educated in comparison to the rest of the Turkish society, children may display more self assertive emotion expressions that might be more common in individualistic cultures. Hence, children in this study are expected to show more anger and more sadness in the interpersonal cheating paradigm, because it is more provocative.

Existing studies relying on observer measures of emotional reactivity suggest that cross-contextual coherence or consistency may vary for different aspects of emotionality (e.g., Buss & Kiel, 2004; Kochanska et al., 1998; Malatesta et al., 1989). For example, 8 to 10 month olds showed less coherence of anger expression across arm restraint, car seat, and toy retraction episodes than episodes used to observe joy or fear (Kochanska et al., 1998). Because two contexts used to elicit anger and sad reactions in this study were quite different from each other in terms incentive value (goal blocking and unfairness in an interpersonal context), a low level of cross-situational consistency in both angry and sad reactions were expected.

2. Emotion and Psychopathology

In the functionalist perspective, emotions are quick and dirty response profiles that promote self regulation (Campos et al., 1983). Failures in self-regulation lead to ineffectiveness in attaining personal goals and distress which are associated with various form psychopathologies (Bell & Calkins, 2000; Cole et al., 1994; Crick & Zahn-Waxler, 2003; Eisenberg et al., 2000; Rubin, Burges, Dwyer, and Hastings, 2003; Zahn-Waxler et al., 2000; Nigg, 2006). Further, affective states, in particular negative emotions, appear among the diagnostic criteria for various disorders explicitly (American Psychiatric Association, 2000). The second primary goal of this study was to examine the links between symptoms and reactivity in anger and sadness as observed in interpersonal and non-interpersonal contexts.

Research has shown that negative emotionality, as a temperamental construct referring to a general tendency to show angry, sad or fearful reactions, is associated with increases in both internalizing and externalizing symptoms (Cole et al., 1994; Campbell, 1995; Zahn-Waxler et al., 2000; Crick & Zahn-Waxler, 2003; Nigg, 2006; Patrick & Bernat, 2006). More recent studies have examined specific components of emotional reactivity in relation to symptom elevations. For example, findings suggest that anger proneness is associated with externalizing symptoms (Campbell, 1995; Eisenberg et al., 2007). Olson and colleagues found that maternal ratings of anger/frustration at age 3 were positively associated with maternal ratings of externalizing problems (Olson et al., 2005). Externalizing problems of 3rd and 6th grade children based on teacher and peer reports were positively associated with self-reported anger and negatively associated with self-reported sadness (Kim, Walden, Harris, Karras, & Katron, 2007). Longitudinal studies also support links between questionnaire reports of temperamental anger proneness during preschool years and externalizing symptoms in subsequent assessments (Eisenberg et al., 2001a; Smeekens et al., 2007). Those findings suggest that anger proneness is associated with externalizing symptoms in both the concurrent and longitudinal sense.

Some studies found that anger also predicts internalizing symptoms. For example, in a study of 4 to 8 year olds, children with higher levels of anger as rated by parents and teachers also showed more internalizing symptoms than the control group of children by teacher reports (Eisenberg et al., 2001a). In another study of 6 to 9 year olds, both parent and teacher rated anger concurrently and longitudinally predicted parent and teacher reports of both internalizing symptoms (Eisenberg et al., 2005).

Further, those patterns appear replicable in other cultural contexts. For example, in a study with 8 years old Chinese children, parent and teacher reported anger was positively associated

with parent and teacher reported externalizing symptoms when those were co-morbid with internalizing symptoms, and with externalizing behaviors without comorbidity in both genders (Eisenberg et al., 2007). In the same study, parent rated anger was positively associated with internalizing problems in both genders. However, the relationship between anger and internalizing symptoms are less consistent with some studies failing to find any associations or reporting negative associations between anger and internalizing symptoms in contrast to the just reviewed findings. For example, a study of 8th and 9th grade Asians (Chinese, Indian, Malay) failed to find any concurrent associations between self reported anger and internalizing symptoms (Wong, Ang, and Huan, 2007).

Sadness was also examined in relation to internalizing and externalizing symptoms. Studies show that sadness is consistently associated with internalizing symptoms (Zahn-Waxler et al., 2000; Nigg, 2006). Both parent and teacher rated sadness concurrently and longitudinally predicted parent and teacher reports of both internalizing and externalizing symptoms in 6 to 9 year olds (Eisenberg et al., 2005). In another study, 4 to 8 year olds who had elevations in both parent and teacher reports of internalizing, showed higher levels of teacher and parent rated sadness compared to control group and to group high in externalizing according to both teachers and parents (Eisenberg et al., 2001a). However, higher levels of sadness are less consistently related to externalizing symptoms than its association to internalizing symptoms. For example, in a study of 5th and 8th grade African-Americans lower levels of self-reported sadness concurrently predicted relational aggression (Sullivan, Helms, Kliewer, and Goodman, 2009).

The studies reviewed above tend to rely on questionnaire measures of both child's emotionality and symptoms. Such designs give rise to inflated correlations due to shared method and rater variance and this issue is often discussed as representing a measurement confounding

problem (Bates, 1990 as cited in Sanson et al., 1990; Lemery et al., 2002; Lengua et al., 1998; Sanson et al., 1990). Even when confounded rater variance is controlled by using different raters for predictors and outcomes, item content overlap is difficult to minimize, and specificity in relation to aspects of emotionality with symptom profiles is difficult to obtain.

Reliance on observational measures of emotional reactivity and informant ratings of symptoms, on the other hand, address the problem of measurement confounding in studies where emotional reactivity is predictor and symptoms are the outcomes. The few studies that have measured emotional reactivity with observer measures suggest that they can be as effective as parental reports in addition to providing greater specificity in linking emotional reactivity with symptoms (Hayden et al., 2005). For example, longitudinally studied laboratory observations of high emotional reactivity and fearful inhibition at 4 months, 4.5 years, and 7.5 years of age was shown to be a risk factor for developing anxiety symptoms at 7.5 years of age assessed by screening inventories and interviews with the mothers and teachers (Kagan & Snidman, 1999; Kagan et al., 1999). Similarly, parent rated externalizing problems but not internalizing problems of 4.5 year olds were concurrently predicted by observed high exuberance in novel contexts (Stifter et al., 2008). With the exception of a few studies (e.g. Chaplin et al., 2005; Jenkins & Oatley, 2000), however, most studies focus on the links between reactions to novelty or behavioral inhibition and symptoms rather than other aspects of discrete negative emotionality such as anger and sadness. Findings from those studies parallel questionnaire-based studies. For example, naturalistically observed anger expressions during recess time at school were associated with both teacher and mother rated externalizing symptoms of 4 to 8 year olds, whereas sadness expressions were associated only with teacher rated internalizing symptoms (Jenkins & Oatley, 2000). In contrast, anger and sadness expressions of 4-6 year olds during

interactions with parents in a competitive game failed to predict internalizing symptoms both concurrently at preschool age and longitudinally at early school age (Chaplin et al., 2005).

Besides, in the same study anger expressions predicted externalizing symptoms both at preschool age and at early school age, whereas sadness expressions did not (Chaplin et al., 2005).

In the current study I expect to replicate the relationship between anger and externalizing symptoms, and between sadness and internalizing symptoms. Accordingly, anger expressions in both contexts are expected to predict externalizing symptoms, whereas sadness expressions in both contexts are expected to predict internalizing symptoms. The relationship between anger expressions to internalizing symptoms, and between sadness to externalizing symptoms will be exploratory examinations.

2.1. Emotion Regulation and Dysregulation

The specific mechanisms that link emotion with poor self-regulation and risk for psychopathology are actively researched and debated (Cole et al., 1994; Zahn-Waxler et al., 2000; Crick & Zahn-Waxler, 2003; Patrick & Bernat, 2006; Nigg, 2006). Constructs of emotion regulation and dysregulation figure heavily into those discussions. Emotion regulation is defined as “the process of initiating, maintaining, modulating, or changing the occurrence, intensity, or duration of internal feeling states and emotion-related physiological processes, often in the service of accomplishing one’s goals” (Eisenberg et al., 2000, p. 137). Accordingly, emotion regulation, “involves successful management of emotional arousal to secure effective social functioning by processes at the physiological, cognitive, and behavioral levels” (Rydell et al., 2003, p.30). This definition of emotion regulation makes it difficult to separate regulation from the emotion process itself (Cole et al., 2004; Saarni et al., 1998; Eisenberg et al., 2000;

Goldsmith & Davidson, 2004). Emotion dysregulation is often suggested to provide the link between emotional reactivity and maladaptive patterns of emotional reactivity that help define and constitute the core of adjustment problems (Cole et al., 1994; Zahn-Waxler et al., 2000; Crick & Zahn-Waxler, 2003; Fox & Calkins, 2003; Patrick & Bernat, 2006; Nigg, 2006).

Although the construct of emotion dysregulation is also difficult to isolate from the emotion process itself, there is greater consensus on its measurement. For example, context inappropriate activation of emotion, e.g. laughing in a sad situation, inappropriately intense expressions of emotions that are debilitating for the context and age, e.g. throwing temper tantrums for minor infractions in older preschoolers, appear as items in questionnaires designed to tap emotion regulation and its dysregulation (Cicchetti & Shields, 1997). Context inappropriate activation of emotions (distress in contexts designed to elicit joy and joy in contexts designed to elicit distress) can be measured in observational paradigms and related to meaningfully to sub-optimal caregiver-child interactions (Kochanska, 2001) which are also associated with maladjustment (e.g. Lyons-Ruth, Easterbrooks, and Cibelli, 1997; Hoglund & Leadbeater, 2004).

One way to operationalize emotion dysregulation may have to do with diminished contextual variability in emotional reactions. Low coherence of emotion expressions, or large variability across contexts may be a normative response, whereas high coherence of anger and sadness expressions across contexts may be an indicator of dysfunction, especially when the incentive value of the contexts used to elicit emotions are quite different, such as a goal-blocking and an interpersonal fairness violation context. In other words, a high degree of contextual variability in emotional responses may be an indicator of flexibility and may reflect an adaptive and normative pattern of emotional reactivity. At the same time, a high degree of cross-contextual consistency in emotional responses may be an indicator of inflexibility and may reflect a maladaptive pattern,

a form of emotion dysregulation. Such patterns would be consistent with significant interactions of anger (or sadness) levels in the two contexts. Accordingly, children who show high coherence of anger and sadness expressions in both contexts might also be rated by their mothers as having greater symptoms of behavior problems, compared to other children that show low coherence across two contexts (higher levels of anger and sadness expressions in one context and lower levels of anger and sadness expressions in the other context).

In the present study, children who consistently show high levels of anger expressions in both contexts were expected to have higher levels of externalizing symptoms than other children, as children who consistently show high levels of sadness expressions in both contexts were expected to have higher levels of internalizing symptoms than other children, because these may be suggestive of generally poor regulation of emotions and behaviors. In addition, the relationship between contextual variability of anger expressions and internalizing symptoms, and the relationship between contextual variability of sadness expressions and externalizing symptoms, will be exploratory examinations due to the less consistent effects reported in the literature.

3. Summary of Hypotheses

Goal 1: Normative patterns in anger and sadness during the preschool years

All children are expected to show more anger and more sadness in the interpersonal cheating paradigm, because it is more provocative in terms of violation of cultural norms. Accordingly, girls were expected to show less anger expressions compared to boys in both contexts. Girls were expected to show more sadness than boys in the interpersonal context, because they are suggested to be more interpersonally oriented (Zahn-Waxler et al., 2000). In the current study,

age differences in anger and sadness expressions will be an exploratory examination due to the limited evidence and inconsistencies reported in the literature. In addition, because the two contexts are likely to give rise to very different appraisals, the degree of cross-contextual coherence is expected to be modest at best based on reviewed evidence in the literature sections.

Goal 2: Emotional reactivity in relation to symptoms

Anger expressions in both contexts are expected to predict externalizing symptoms, whereas sadness expressions in both contexts are expected to predict internalizing symptoms. In addition, a high degree of contextual variability in anger and sadness might indicate successful adaptation and adjustment of children, whereas a high degree of contextual consistency might be an indicator of concurrent dysfunctions in adjustment. Accordingly, children who show high coherence of anger and sadness expressions in both contexts might also be rated by their mothers as having greater symptoms of behavior problems (both internalizing and externalizing problems), compared to other children that show low coherence across two contexts (higher levels of anger and sadness expressions in one context and lower levels of anger and sadness expressions in the other context). Specifically, children who consistently show higher levels of sadness expressions in both contexts might be expected to have higher levels of internalizing symptoms than other children. Similarly, children who consistently show higher levels of anger expressions in both contexts might be expected to have higher levels of externalizing symptoms than other children, because these patterns may be suggestive of generally poor regulation of emotions and behaviors. In the current study, the relationship between contextual variability of anger expressions and internalizing symptoms, and the relationship between contextual variability of sadness expressions and externalizing symptoms, will be exploratory examinations due to the less consistent effects reported in the literature.

II. Method

1. Participants

Participants were recruited from private preschools located in different regions of Istanbul by convenience sampling. A total of 130 children (67 boys and 63 girls) aged between 3 and 6 years and their mothers, who are native speakers of Turkish and residing in Istanbul-Turkey, were recruited into the study. Boys constituted 52.8% of the sample and girls constituted 47.2% of the sample. The mean age of children in the total sample was 55.89 months with a standard deviation of 7.97 ($M = 4.66$ years, $SD = .66$), the median age was 54.87 months ($M = 4.57$ years).

Mothers' mean age was 35.42 years ($SD = 4.67$) and fathers' mean age was 39.2 ($SD = 6.06$). Parental education levels were distributed as follows: 11.5% of mothers and 11.6% of fathers completed graduate school; 38.5% of mothers, 43.4% of fathers were university graduates; 5.4% of mothers and 2.3% of fathers started but did not complete university; 13.8% of mothers and .8% of fathers completed 2-years-program-university; 17.7% of mothers and 12.4% of fathers were high school graduates; 3.8% of mothers and 11.6% of fathers were middle school graduates; 7.7% of mothers and 16.3% of fathers were primary school graduates; 1.5% of mothers and 1.6% of fathers did not complete primary school.

55% of children in the sample had no siblings; 41.1% of children had 1 sibling; 3.1% of children had 2 siblings, and .8% of children had 3 siblings at home. 3.9% of children had 1 adult living at home; 55.8% of children had 2 adults; 31% of children had 3 adults; 5.4% of children had 4 adults; 3.1% of children had 5 adults; and .8% of children had 6 or more adults living at home. Family income levels were distributed as follows: 59.4% of families in the sample had a monthly income above 3000 TL; 21.9% of families had a monthly income between 1500 TL and 3000 TL; 12.5% of families had a monthly income between 750 TL and 1000 TL; 5.5% of

families had a monthly income between 450 TL and 750 TL; and .8% of families had a monthly income between 250 TL and 450 TL.

All children were recruited from private preschools in Istanbul. The number of students in participants' classrooms ranged between 6 and 26 ($M = 16.53$, $SD = 5.81$). The educational attainment levels of the preschool teachers were as follows: 4.6% of teachers were high school graduates, 40.8% of teachers were vocational high school graduates, 48.5% of teachers were university graduates, and 6.2% of teachers had an undefined kind of educational training. The mean years of teaching experience of the teachers ranged between 3 and 29 years ($M = 16.45$, $SD = 8.09$).

2. Procedure

Contacting the Participants. Directors of 15 private preschools in Istanbul were contacted by phone calls and invited to participate in a research project jointly run by Koç University and Boğaziçi University. Nine preschool directors accepted participation with written consents. All mothers whose children were attending those nine preschools were sent information about the study, consent forms, and a questionnaire packet. A total of 308 children aged between 3 and 6 years and their mothers were contacted. Among them, 42.21% (130 mothers) of the mothers consented to fully participate in the study including collection of videotaped observational data of their children at preschools.

A total of 130 children, whose mothers voluntarily agreed to participate by filling the questionnaire and giving written consent for their child to participate, were recruited for the individual observational assessment in their preschools. Brief information letters about the

assessments conducted at preschools were sent to the mothers along with DVDs containing the video stream of each child's assessment as compensation.

Training of the Experimenters and Data Collection. Following maternal consent, children were visited at their preschools and observed in 40 min-long sessions, in which we administered the Effortful Control Battery (Kochanska, Murray, & Harlan, 2000), and selected episodes from the Preschool Laboratory Temperament Assessment Battery (Goldsmith et. al., 1993). The two experimenters took turns administering the assessments and operating the camera for all 130 cases. The observational assessments were administered by two female experimenters, both graduate students in Developmental Psychology. The training of the experimenters took 8 weeks and included workshops, role plays, and three pilots (not part of the analyses reported here as data were collected outside of preschools).

Training of the Coders. The videotaped assessments of anger and sadness used in this thesis were coded by graduate students of Developmental Psychology at the Koç University and at the Boğaziçi University. The coders were trained to adequate inter-rater reliability before commencing coding. The coders were blind to the hypotheses of the current thesis.

3. Measures

3.1. Child Behavior Checklist

The mothers were asked to fill out the questions of the externalizing and internalizing subscales of the adapted Turkish version of Child Behavior Checklist (1 ½ - 5 Yaş Çocukları İçin Davranış Değerlendirme Ölçeği; Dumenci, Erol, Achenbach, & Simsek, 2004). This instrument consists of 100 items rated with a 3 point (ranges between 0 and 2) rating scale and assesses social competence and behavioral/emotional problems of 1 ½ - 5 years old children (Dumenci et

al., 2004). Published information indicates acceptable internal consistency and excellent one week test-retest reliability estimates ranging between .86 and .94 (Erol & Simsek, 1997; as cited in Erol et al., 2005) for the Turkish version of this instrument.

3.1.1.Data Reduction of CBCL Scale Composites

Externalizing and Internalizing Subscale composites of the CBCL were formed by summing raw scores of the specific items on each subscale (Achenbach, Dumenci, & Rescorla, 2003). The Externalizing Subscale consisted of 24 items tapping aggressive behavior and attention problems. The min and max possible scores of the Externalizing Subscale were 0 and 39. The scores ranged from 0 to 34, with a mean of 11.47, and a standard deviation of 6.89. The internal consistency for the Externalizing Subscale was high, $\alpha = .88$. The Internalizing Subscale consisted of 36 items tapping emotional reactivity, anxiety/depression, somatic complaints and withdrawn behaviors. The min and max possible scores of the Internalizing Subscale composite were 0 and 57. The scores ranged from 0 to 34, $M = 11.11$, $SD = 6.25$. The internal consistency for this Internalizing Subscale was high, $\alpha = .82$.

3.2. Anger and Sadness Assessment

Anger and sadness expressions were observed in two contexts, an interpersonal and a non-interpersonal context. The interpersonal context, 'Not Sharing Episode', was designed to elicit anger and sadness due to perceptions of unfairness. The non-interpersonal context, 'Transparent Box Episode', was designed to elicit anger and sadness due to goal frustration. These contexts were adapted from the Preschool temperament assessment Battery (Goldsmith et. al., 1993).

Reliability information and detailed descriptions of the administration, coding, and data reduction of the two contexts are as follows:

3.2.1. Transparent Box

At the beginning of a 40 min play session, the child was asked to select a toy from a set of three toys to play with later. After playing some other games the selected toy was given to the child locked in a transparent box with a set of incorrect keys. The child was given two minutes to open the box without help.

3.2.1.1. Coding of Transparent Box Variables

The episode was divided into two mock-trials, each lasting 60 seconds, and each trial was further divided into 5-second epochs to code for the presence-absence of anger and sadness from any modality including verbal, and nonverbal including facial, vocal and motor behavior. In addition, each 60-second trial was coded for the peak intensity of anger and sadness expressions. Finally, latency to first expressions of anger and sadness were noted.

The inter-coder reliability for the Transparent Box variables was achieved by independent ratings of three coders by using 20 cases (15.38% of all cases) and 1 consensus case. Cohen's kappa (K) was calculated for inter-rater reliabilities of categorical variables and intraclass correlation coefficient (ICC) was calculated for reliabilities of continuous variables. The inter-rater reliability was $K = .72$ for sadness, $K = .77$ for anger, $K = .90$ for intensity of sadness, $K = .87$ for intensity of anger, $ICC = .99$ for latency to sadness, and $ICC = .97$ for latency to anger.

3.2.1.2. Data Reduction of Transparent Box Composites

Data Reduction of Transparent Box Anger Composite. For each of two trials, relative frequency of anger scores were computed. The intensity scores (0 to 3) for anger from each of two trials and latency to first anger expression were rescaled by linear transformations to range between 0 and 1. The latency to anger score was reversed (by multiplying it with -1), because it was negatively correlated with all the other variables. Then all five scores were summed to compute a composite score for anger ($M = .93$, $SD = .97$). The internal consistency of the composite was .88. The Transparent Box anger composite score ranged between -1 and 3.81.

Data Reduction of Transparent Box Sadness Composite. For each of two trials, relative frequency of sadness scores were computed. The intensity scores (0 to 3) for sadness from each of two trials and latency to sadness scores were rescaled by linear transformations to range between 0 and 1. The latency to sadness score was reversed (by multiplying it with -1), because it was negatively correlated with all the other variables. Then all five scores were summed to compute a composite score for sadness ($M = .62$, $SD = 1.06$). The internal consistency of the composite was .88. The Transparent Box sadness composite score ranged between -1 and 3.07. The inter-scale correlation between anger and sadness composite scales was .38.

3.2.2. Not Sharing

In the interpersonal context episode, the camera person gives a bag filled with candies to the experimenter and tells her to share them equally with the child. After 3 trials of fair distribution, the experimenter begins to cheat. On the fourth round, she takes two and gives one to the child, on the fifth round she takes three gives one to the child, then she takes the entire bag of candy to herself and finally she says that the child does not need the candy pile already apportioned to

him/her and takes all of the candy. After 2.5 minutes of fair and unfair sharing, a period of 30 seconds ensues to give the child additional time to react to the situation.

3.2.2.1. Coding of Not Sharing Variables

The episode was divided in two mock-trials, each lasting 30 seconds, and each trial was further divided into 5-second epochs to code for the presence-absence of anger and sadness from any modalities, verbal, nonverbal including facial, vocal and motor behavior. In addition, each 30-second trial was coded for the peak intensity of anger and sadness expressions. Finally, latency to first expressions of anger and sadness were noted.

The inter-coder reliability for the Not Sharing variables was achieved by independent ratings of three coders by using 20 cases (15.38% of all cases) and 1 consensus case. Cohen's kappa (K) was calculated for inter-rater reliabilities of categorical variables and intraclass correlation coefficient (ICC) was calculated for reliabilities of continuous variables. The inter-rater reliability was $K = .82$ for sadness, $K = .74$ for anger, $K = .75$ for intensity of sadness, $K = .64$ for intensity of anger, $ICC = .99$ for latency to sadness and latency to anger.

3.2.2.2. Data Reduction of Not Sharing Composites

Data Reduction of Not Sharing Anger Composite. For each of two trials relative frequency of anger scores were computed. The intensity of anger scores for each trial and latency to anger scores were rescaled by linear transformations to range between 0 and 1. The latency to anger score was reversed (by multiplying it with -1), because it was negatively correlated with all the other variables. The rescaled five scores were summed to compute a composite score for anger

($M = 2.44$ $SD = .87$). The internal consistency of the anger composite was .77. The Not Sharing anger composite score ranged between -.45 and 3.80.

Data Reduction of Not Sharing Sadness Composite. For each of two trials relative frequency of sadness scores were computed. The intensity of sadness scores for each trial and latency to sadness scores were rescaled by linear transformations to range between 0 and 1. The latency to sadness score was reversed (by multiplying it with -1), because it was negatively correlated with all the other variables. The rescaled five scores were summed to compute a composite score for sadness ($M = 2.45$, $SD = 1.01$). The internal consistency of the composite was .84. The Not Sharing sadness composite score ranged between -1 and 3.93. The inter-scale correlation between anger and sadness composite scales was .06.

III. Results

There were two primary goals in this study. The first was to examine contextual variability in anger and sadness expressions as a function of age and gender, and the second was to examine cross-contextual consistency in anger and sadness expressions in relation to symptoms elevations. Table 1 and Table 2 present the descriptive cell statistics from those analyses.

1. Results of the Repeated Measures ANOVA: Contextual Differences on Emotion Expressions as a Function of Age and Gender

In order to examine contextual differences in anger and sadness expressions repeated measures ANOVAs were conducted with dependent variables separately as sadness and anger composite scores from the Transparent Box and Not Sharing episodes and with age and gender serving as between-subject factors.

It was hypothesized that all children will show greater levels of anger and greater levels of sadness in the interpersonal context (not sharing episode) compared to the non-interpersonal context (transparent box episode). In addition, girls were hypothesized to show less anger expressions compared to boys in both contexts, and more sadness than boys in the interpersonal context. In addition, the degree of cross-contextual coherence was expected to be modest at best.

Table 1.

Age and Gender Effects on CBCL Symptoms

	Gender	
	Boys	Girls
	Mean (s.d.) (n=33)	Mean (s.d.) (n=33)
<i>Externalizing Symptoms (0-39)</i>		
Age		
Younger Group	12.27 (6.25)	10.9 (5.52)
Older Group	11.88 (9.24)	10.65 (6.07)
<i>Internalizing Symptoms (0-57)</i>		
Age		
Younger Group	11.24 (6.38)	10.68 (5.15)
Older Group	9.58 (6.26)	12.94 (6.97)

Note: None of the means significantly differ from each other at $\alpha < .05$.

Table 2.

Age and Gender Effects on Anger and Sadness Expressions

	Boys		Girls	
	Younger	Older	Younger	Older
	Mean (s.d.)	Mean (s.d.)	Mean (s.d.)	Mean (s.d.)
<i>Anger Expressions (0-4)</i>				
Transparent Box	1.07 (1.105) ^{a,b}	1.05 (1.04) ^{a,b}	.87 (.904) ^{a,b}	.73 (.78) ^{a,b}
Not Sharing	1.92 (.98)	2.59 (.69)	2.4 (.914)	2.79 (.61)
<i>Sadness Expressions (0-4)</i>				
Transparent Box	.60 (1.28) ^{a,b}	.56 (1.014) ^{a,b}	.70 (1.04) ^{a,b}	.63 (.93) ^{a,b}
Not Sharing	2.09 (1.43) ^c	2.69 (.66) ^d	2.50 (.93) ^c	2.69 (.74) ^d

Note: Means that do share a superscript (^{a,b} or ^{c,b}) do not significantly differ from each other at $\alpha < .05$. N equals to 33 for younger boys, 34 for older boys, and 31 for younger and older girls.

Two three-way ANOVAs were run to analyze age, gender and context effects once for sadness and once for anger raw composite scores. In all of these analyses, within-subject context factor had two levels with Transparent Box (TB) episode, a non interpersonal context, and the Not Sharing (NS) episode, an interpersonal context as its levels.

1.1. Contextual Variability in Anger Expressions as a Function of Age and Gender. The Box's test of equality of covariance matrices [$F(9, 1.1745)=1.68$, ns] was insignificant. The Levene's test of equality of error variances was also insignificant for TB anger composite [$F(3, 125)=.91$, ns]; but it was significant for NS anger composite [$F(3, 125)= 3.49$, $p<.05$].

There were no significant main effects of age or gender, no significant two-way interaction effect of age and gender, nor a significant three-way interaction effect of context, age and gender on anger expressions. However, the main effect of age was marginally non-significant [$F(1, 129)=3.09$, $p=.08$]. In addition, there was a significant main effect of context [$F(1, 129)=233.07$, $p<.001$] on anger expressions, a significant two-way interaction of context and age [$F(3, 129)=8.95$, $p<.005$] and a significant two-way interaction of context and gender [$F(3, 129)=9.66$, $p<.005$].

The significant main effect of context indicated that children expressed more anger in the interpersonal context (NS, $M = 2.43$, $SD = .87$) than they did in the non-interpersonal context (TB, $M = .93$, $SD = .97$). Follow-up analyses pertinent to the significant two-way interaction of age by context indicated that there were no discernable age differences in the transparent box context, $F(1,129) < 1$, ns, but that older kids ($M = 2.69$, $SD = .65$) got more angry in the not-sharing context than younger kids ($M = 2.17$, $SD = .98$), $F(1,129) = 13.02$, $p <.001$. Follow-up

analyses pertinent to the significant two-way interaction gender by context indicated that there were no discernable gender differences in the transparent box context, $F(1,129) = 2.3$, ns, but that girls ($M = 2.61$, $SD = .79$) got more angry in the not-sharing context than boys ($M = 2.26$, $SD = .91$), $F(1,129) = 6.11$, $p < .02$.

To sum up, all children expressed significantly more anger in the interpersonal context (NS) than they did in the non-interpersonal context (TB). Girls in general expressed significantly more anger at the interpersonal context (NS) than boys did. In addition, older children in general showed significantly more anger at the interpersonal context (NS) than younger children did.

1.2. Contextual Variability in Sadness Expressions as a Function of Age and Gender. The Box's test of equality of covariance matrices [$F(9, 1.745)=2.95$, $p<.005$] was significant. The Levene's test of equality of error variances was also significant for NS sadness composite [$F(3, 125)= 7.67$, $p<.001$]; but it was insignificant for TB sadness composite [$F(3, 125)= 1.33$, $p>.05$].

There were no significant main effects of age or gender, no significant two-way interaction effect of context and gender, nor a significant three-way interaction effect of context, age and gender on sadness expressions. However, there was a significant main effect of context [$F(1, 125)=266.43$, $p<.001$] on sadness expressions, and a marginally significant two way interaction effect of context and age [$F(3, 125)=3.85$, $p=.052$] on sadness expressions.

The significant main effect of context indicated that children expressed more sadness in the interpersonal context (NS $M = 2.49$, $SD = 1.01$), than they did in the non-interpersonal context (TB, $M = .62$, $SD = 1.06$). Follow-up analyses pertinent to the significant two-way interaction of age by context indicated that there were no discernable age differences in the transparent box

context, $F(1,126) < 1$, ns, but that older kids ($M = 2.69$, $SD = .7$) got more sad in the not-sharing context than younger kids ($M = 2.29$, $SD = 1.22$), $F(1,126) = 5.30$, $p < .05$.

To summarize, all children expressed significantly more sadness in the interpersonal context (NS) than they did in the non-interpersonal context (TB). Boys and girls did not significantly differ in their sadness expressions in any context. Younger and older children did not significantly differ in their expressions of sadness in the non-interpersonal context (TB). However, older children expressed significantly more sadness in the interpersonal context (NS) than younger children did.

2. Results of the Regression Analyses: Prediction of CBCL Symptoms using Emotion Expressions

Anger expressions in both contexts were hypothesized to predict externalizing symptoms, whereas sadness expressions in both contexts were hypothesized to predict internalizing symptoms. In addition, cross-contextual consistency in anger and sadness expressions was expected to predict higher levels of externalizing and internalizing symptoms respectively. Regression analyses were run to test these hypothesized effects of emotion expressions predicting CBCL symptoms. In preliminary analyses prior to regressions, intercorrelations were examined among the sadness and anger measures from both episodes and with CBCL scales. First, the correlations among study variables are presented. Subsequently, results of separate hierarchical multiple regression analyses are reported with externalizing and internalizing symptoms serving as the outcome measures respectively.

Table 3
Intercorrelations Among Age, CBCL Subscales and Emotion Composites Scales

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Child Age (in years)	1						
(2) CBCL Externalizing Subscale	-.02	1					
(3) CBCL Internalizing Subscale	.02	.50**	1				
(4) Transparent Box Anger Composite Subscale	-.04	.05	.04	1			
(5) Transparent Box Sadness Composite Subscale	-.03	.00	.04	.38**	1		
(6) Not Sharing Anger Composite Subscale	.30**	-.06	.03	.16 ⁺	.07	1	
(7) Not Sharing Sadness Composite Subscale	.20*	-.07	.07	-.03	.20*	.06	1

⁺ $p < .10$, * $p < .05$, ** $p < .01$ or better. N varies from 129 to 130.

2.1. Bivariate Correlations among CBCL Symptoms and the Predictors

Bivariate correlations among child gender, child age, externalizing and internalizing scales, and emotion scales are presented in Table 3. The correlations between the dependent variables and the predictors were insignificant. The externalizing and internalizing subscales were positively and significantly correlated ($r(129) = .50, p < .01$).

Child age significantly correlated with anger ($r(129) = .30, p = .01$), and sadness ($r(129) = .20, p < .05$) composite scales of the interpersonal context (Not Sharing). There was a significant positive correlation among anger and sadness composite scales of the interpersonal context (Transparent Box) ($r(130) = .38, p < .01$). The sadness composite scales of the Transparent Box and of the Not Sharing were significantly and positively correlated ($r(130) = .20, p < .05$), the corresponding correlation for the anger composite was marginally non-significant ($r(130) = .16, p = .07$). All other correlations were insignificant.

2.2. Hierarchical Multiple Regression Analyses for CBCL Symptoms

Two sets of hierarchical multiple regression analyses were conducted to predict externalizing and internalizing symptoms separately. All predictors were centered and sex was dummy coded.

In the first set of regressions, eight regression equations were evaluated for each outcome. Each of these regressions separately evaluated the prediction from context specific anger and sadness composites to the outcome of interest. Although neither sex nor age significantly predicted CBCL symptoms, both of these factors showed significant interactions with anger and sadness composites in the three-way ANOVAs. Hence, both age and sex were entered in the first step, followed by the main effect of context specific anger or sadness composite scores in the second step, followed by the two-way interactions of the context specific emotion composite

score with age and sex. Tables 4 and 5 present the results of these regressions for externalizing, and Tables 8 and 9 internalizing ratings respectively.

In the second set of regressions, four regression equations were evaluated for each outcome. The goal of these regressions was to evaluate whether cross-contextual consistency in anger or sadness expressions helped predict elevations in symptoms, by entering the two-way interaction of context specific anger and sadness composite scores. Effects of cross-contextual consistency were evaluated separately for anger and sadness expressions. Parallel to the first set of regressions, both age and sex were entered in the first step, followed by the main effect of anger or sadness composites from both contexts, followed by the two-way interactions of context specific composite scores with age and sex in the third step, followed by the two-way interaction of context specific composite scores in the fourth step. Tables 6 and 7 present the results of these two regressions for externalizing and Tables 10 and 11 internalizing ratings respectively.

2.2.1. Hierarchical Multiple Regressions: Predicting Externalizing Symptoms from Context Specific Emotion Expressions. The results of the two hierarchical multiple regressions are summarized in Table 4 for anger expressions in each context and sadness expressions in each context in Table 5.

In the first regression of Table 4, age and gender were entered in the first step, TB anger in the second step, two-way interactions of TB anger with age and gender in the third step. Results showed that the variables entered at each step did not add to the prediction of CBCL externalizing, for the first step $F(2, 125) = .60, ns$; second step $F_{change2}(3, 124) = .22, ns$; third step $F_{change3}(5, 122) = .05, ns$.

Table 4. Separate regressions predicting Externalizing Symptoms from anger expressions in the Non-interpersonal Context (TB) and in the Interpersonal Context (NS)

Outcome: Externalizing Symptoms										
		Step 1			Step 2			Step 3		
		β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}
Overall F										
Regression equation with Anger Expressions in the Non-interpersonal Context (TB)										
Step 1.	C sex	-1.30	1.23		-1.22	1.24		-1.20	1.25	
	C age	-.33	1.23	.01	-.31	1.23		-.30	1.24	
Step 2.	Anger (TB)				.30	.64	.002	-.30	2.07	
Step 3.	Anger (TB) X C age							.39	1.29	
	Anger (TB) X C sex							.12	1.34	.001
										.30
Regression equation with Anger Expressions in the Interpersonal Context (NS)										
Step 1.	C sex	-1.30	1.23		-1.19	1.26		-1.35	1.23	
	C age	-.33	1.23	.01	-.15	1.29		.32	1.28	
Step 2.	Anger (NS)				-.33	.76	.001	2.64	2.27	
Step 3.	Anger (NS) X C age							-3.18*	1.59	
	Anger (NS) X C sex							2.84 ⁺	1.45	.06*
										1.82

* $p < .05$; N = 128.

The overall regression was also not significant, $F(5, 122) = .30$, ns, explaining a total of %1.2 of the variance in maternally reported externalizing symptoms.

In the second regression, NS anger was entered in the second step following the control variables, and two-way interactions of NS anger with age and gender in the third step. Results revealed that the variables entered at the first and at the second steps did not add to the prediction of CBCL externalizing, for the first step $F(2, 125) = .60$, ns; and for the second step $F_{\text{change}2}(3, 124) = .19$, ns. However, variables entered in the third step significantly added to the prediction of CBCL externalizing, $F_{\text{change}3}(5, 122) = 3.84$, $p < .05$. Yet, the overall regression was not significant, $F(5, 122) = 1.82$, ns, explaining a total of %5.9 of the variance in maternally reported externalizing symptoms.

Although neither the overall regression nor the unique contribution of predictors in each step were significant, the interaction effect of age and Not Sharing anger composite was significant, $[B] = -3.18$, $t = -2.01$, $p < .05$, in addition to a marginally significant interaction effect of gender and NS anger composite, $[B] = 2.84$, $t = 1.96$, $p = .05$. Although strong inferences cannot be made given the non-significance of the overall regression, those interaction effects suggest that externalizing symptoms increase as younger children and girls express more anger in the interpersonal context.

Table 5 presents the corresponding regressions with context specific sadness composites predicting CBCL externalizing. In the first regression, age and gender were entered in the first step, TB sadness in the second step, and two-way interactions of TB sadness with age and gender in the third step. Results showed that the variables entered at each step did not add to the prediction of CBCL externalizing, for the first step $F(2, 125) = .60$, ns; second step $F_{\text{change}2}(3, 124) = .01$, ns; third step $F_{\text{change}3}(5, 122) = .53$, ns.

Table 5. Separate regressions predicting Externalizing Symptoms from sadness expressions in the Non-interpersonal Context (TB) and in the Interpersonal Context (NS)

Outcome: Externalizing Symptoms											
		Step 1			Step 2			Step 3			Overall F
		β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	
Regression equation with Sadness Expressions in the Non-interpersonal Context (TB)											
Step 1.	C sex	-1.30	1.23		-1.31	1.23		-1.32	1.24		
	C age	-.33	1.23	.01	-.32	1.23		-.31	1.24		
Step 2.	Sadness (TB)				.06	.59	.00	.29	1.82		
Step 3.	Sadness (TB) X C age							.20	1.21		
	Sadness (TB) X C sex							-1.24	1.20	.01	.81
Regression equation with Sadness Expressions in the Interpersonal Context (NS)											
Step 1.	C sex	-1.30	1.23		-1.22	1.24		-1.18	1.25		
	C age	-.33	1.23	.01	-.19	1.25		-.28	1.27		
Step 2.	Sadness (NS)				-.35	.63	.003	-1.20	1.93		
Step 3.	Sadness (NS) X C age							.75	1.51		
	Sadness (NS) X C sex							-.27	1.35	.002	.35

⁺ $p < .10$; * $p < .05$; ** $p < .01$. N = 128

The overall regression was also not significant, $F(5, 122) = .45$, ns, explaining a total of %1.8 of the variance in maternally reported externalizing symptoms.

In the second regression of Table 5, NS sadness was entered in the second step following the control variables, and two-way interactions of NS sadness with age and gender in the third step. Results revealed that the variables entered at entered at each step did not add to the prediction of CBCL externalizing, for the first step $F(2, 125) = .60$, ns; second step $F_{\text{change}2}(3, 124) = .32$, ns; third step $F_{\text{change}3}(5, 122) = .13$, ns. The overall regression was also not significant, $F(5, 122) = .35$, ns, explaining a total of %1.4 of the variance in maternally reported externalizing symptoms.

2.2.2. Hierarchical Multiple Regressions: Predicting Internalizing Symptoms from Context Specific Emotion Expressions. The results of the two hierarchical multiple regressions are summarized in Table 6 for anger expressions in each context and sadness expressions in each context in Table 7.

In the first regression of Table 6, age and gender were entered in the first step, TB anger in the second step, two-way interactions of TB anger with age and gender in the third step. Results showed that the variables entered at each step did not add to the prediction of CBCL internalizing, for the first step $F(2, 125) = .82$, ns; second step $F_{\text{change}2}(3, 124) = .41$, ns; third step $F_{\text{change}3}(5, 122) = .32$, ns. The overall regression was also not significant, $F(5, 122) = .53$, ns, explaining a total of %2.1 of the variance in maternally reported internalizing symptoms.

Table 6. Regression predicting Externalizing Symptoms from anger expressions in the Non-interpersonal (TB) and in the Interpersonal Context (NS)

Outcome: Externalizing Symptoms													
		Step 1			Step 2			Step 3			Step 4		
		β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch} Overall F
Step 1.	C sex	-1.30	1.23		-1.05	1.28		-1.25	1.27		-1.35	1.28	
	C age	-.33	1.23	.01	-.08	1.30		.35	1.30		.39	1.30	
Step 2.	Anger (TB)				.38	.66		-.61	2.08		.05	2.22	
	Anger (NS)				-.43	.79	.00	2.70	2.36		3.11	2.41	
Step 3.	Anger (TB) X C age							.65	1.28		.25	1.37	
	Anger (NS) X C age							-3.26*	1.63		-3.48*	1.65	
	Anger (TB) X C sex							-.19	1.36		-.43	1.39	
	Anger (NS) X C sex							2.85 ⁺	1.50	.06	3.02*	1.51	
Step 4.	Anger (TB) X Anger (NS)										.63	.74	.006 1.12

⁺ $p < .10$; * $p < .05$; ** $p < .01$. N = 128.

In the second regression of Table 6, NS anger was entered in the second step following the control variables, and two-way interactions of NS anger with age and gender in the third step. Results revealed that the variables entered at each step did not add to the prediction of CBCL internalizing, for the first step $F(2, 125) = .81$, ns; second step $F_{\text{change2}}(3, 124) = .00$, ns; third step $F_{\text{change3}}(5, 122) = .12$, ns. The overall regression was also not significant, $F(5, 122) = .37$, ns, explaining a total of %1.5 of the variance in maternally reported internalizing symptoms.

Table 7 presents the corresponding regressions with context specific sadness composites predicting CBCL internalizing. In the first regression, age and gender were entered in the first step, TB sadness in the second step, and two-way interactions of TB sadness with age and gender in the third step. Results showed that the variables entered at each step did not add to the prediction of CBCL internalizing, for the first step $F(2, 125) = .81$, ns; second step $F_{\text{change2}}(3, 124) = .13$, ns; third step $F_{\text{change3}}(5, 122) = 2.29$, ns. The overall regression was also not significant, $F(5, 122) = 1.27$, ns, explaining a total of %5 of the variance in maternally reported internalizing symptoms.

Although neither the overall regression nor the unique contribution of predictors in each step were significant, the interaction effect of gender and TB sadness composite was significant, $[B] = -2.27$, $t = -2.11$, $p < .05$. Although strong inferences cannot be made given the non-significance of the overall regression, this significant interaction effect suggested that internalizing symptoms increase as boys express more sadness in the non-interpersonal context.

In the second regression of Table 7, NS sadness was entered in the second step following the control variables of age and sex which were entered in the first step, and two-way interactions of Not Sharing sadness with age and gender in the third step.

Table 7. Regression predicting Externalizing Symptoms from sadness expressions in the Non-interpersonal (TB) and in the Interpersonal Context (NS)

		Outcome: Externalizing Symptoms											
		Step 1			Step 2			Step 3			Step 4		
		β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch} Overall F
Step 1.	C sex	-1.30	1.23		-1.23	1.24		-1.19	1.26		-1.24	1.27	
	C age	-.33	1.23	.01	-.17	1.26		-.23	1.29		-.29	1.30	
Step 2.	Sadness (TB)				.12	.60		.66	2.00		.57	1.91	
	Sadness (NS)				-.38	.64	.003	-1.44	2.00		-1.58	2.02	
Step 3.	Sadness (TB) X C age							.02	1.24		.07	1.25	
	Sadness (NS) X C age							.83	1.54		.85	1.54	
	Sadness (TB) X C sex							-1.32	1.23		-1.24	1.24	
	Sadness (NS) X C sex							-.05	1.38	.01	.12	1.42	
Step 4.	Sadness (TB) X Sadness (NS)										-.29	.56	.002 .35

⁺ $p < .10$; * $p < .05$; ** $p < .01$. N = 128.

Results revealed that the variables entered at entered at each step did not add to the prediction of CBCL internalizing, for the first step $F(2, 125) = .81$, ns; second step $F_{\text{change}2}(3, 124) = .43$, ns; third step $F_{\text{change}3}(5, 122) = .08$, ns. The overall regression was also not significant, $F(5, 122) = .44$, ns, explaining a total of %1.8 of the variance in maternally reported internalizing symptoms.

2.2.3. Hierarchical Multiple Regressions: Predicting Externalizing Symptoms From Cross-contextual Consistency in Emotion Expressions. Two separate hierarchical multiple regressions were run; first with TB and NS anger composites, and second with TB and NS sadness composites as predictors. The results are summarized in Table 8 for anger composites and in Table 9 for sadness composites.

As can be seen from Table 8, in the first regression equation, age and gender were entered in the first step as control variables, Transparent Box anger and Not Sharing anger in the second step. Two-way interactions of Transparent Box anger with age and gender and of Not Sharing anger with age and gender were entered in the third step. In the final step, two-way interaction of anger in both contexts was entered. Results showed that the variables entered at each step did not add to the prediction of CBCL externalizing, for the first step $F(2, 125) = .60$, ns; second step $F_{\text{change}2}(4, 123) = .26$, ns; third step $F_{\text{change}3}(8, 119) = 1.91$, ns; fourth step $F_{\text{change}4}(9, 118) = .73$, ns. The overall regression was also not significant, $F(5, 122) = 1.12$, ns, explaining a total of %7.9 of the variance in maternally reported externalizing symptoms. The only significant terms in this regression were the two way interactions of Not Sharing anger with sex and age, replicating the pattern already reported in Table 4.

Table 8. Separate regressions predicting Internalizing Symptoms with anger expressions in the Non-interpersonal Context (TB) and in the Interpersonal Context (NS)

		Outcome: Internalizing Symptoms									
		Step 1			Step 2			Step 3			Overall F
		β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	
Regression equation with Anger Expressions in the Non-interpersonal Context (TB)											
Step 1.	C sex	1.40	1.11		1.50	1.12		1.45	1.13		
	C age	.23	1.11	.013	.26	1.11		.23	1.12		
Step 2.	Anger (TB)				.37	.58	.003	1.42	1.87		
Step 3.	Anger (TB) X C age							-.51	1.16		
	Anger (TB) X C sex							-.83	1.22	.005	
										.53	
Regression equation with Anger Expressions in the Interpersonal Context (NS)											
Step 1.	C sex	1.40	1.11		1.40	1.14		1.38	1.15		
	C age	.23	1.11	.013	.24	1.17		.29	1.19		
Step 2.	Anger (NS)				-.01	.69	.00	-.10	2.12		
Step 3.	Anger (NS) X C age							-.15	1.48		
	Anger (NS) X C sex							.64	1.35	.002	
										.37	

⁺ $p < .10$; * $p < .05$; ** $p < .01$. N = 128

Table 9. Separate regressions predicting Internalizing Symptoms from sadness expressions in the Non-interpersonal Context (TB) and in the Interpersonal Context (NS)

		Outcome: Internalizing Symptoms									
		Step 1			Step 2			Step 3			Overall F
		β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	
Regression equation with Sadness Expressions in the Non-interpersonal Context (TB)											
Step 1.	C sex	1.40	1.11		1.37	1.12		1.37	1.11		
	C age	.23	1.11	.013	.25	1.12		.26	1.10		
Step 2.	Sadness (TB)				.19	.53	.001	1.40	1.63		
Step 3.	Sadness (TB) X C age							-.19	1.08		
	Sadness (TB) X C sex							-2.26	1.07*	.04	1.27
Regression equation with Sadness Expressions in the Interpersonal Context (NS)											
Step 1.	C sex	1.40	1.11		1.32	1.12		1.32	1.13		
	C age	.23	1.11	.013	.09	1.13		.11	1.15		
Step 2.	Sadness (NS)				.37	.57	.003	.85	1.75		
Step 3.	Sadness (NS) X C age							-.29	1.37		
	Sadness (NS) X C sex							-.33	1.23	.001	.44

⁺ $p < .10$; * $p < .05$; ** $p < .01$. N = 128.

As can be seen from Table 9, in the second regression, TB sadness and NS sadness were entered in the second step following the control variables. Two-way interactions of TB sadness with age and gender and of NS sadness with age and gender were entered in the third step. In the fourth step, a cross context sadness interaction composite of TB and NS sadness was entered. Results revealed that the variables entered at each step did not add to the prediction of CBCL externalizing, for the first step $F(2, 125) = .60$, ns; second step $F_{\text{change}}(4, 123) = .18$, ns; third step $F_{\text{change}}(8, 119) = .35$, ns; third step $F_{\text{change}}(9, 118) = .26$, ns. The overall regression was also not significant, $F(5, 122) = .35$, ns, explaining a total of %2.6 of the variance in maternally reported externalizing symptoms.

2.2.4. Hierarchical Multiple Regressions: Predicting Internalizing Symptoms From Cross-contextual Consistency in Emotion Expressions. Two separate hierarchical multiple regressions were run; first with TB and NS anger composites, and second with TB and NS sadness composites as predictors. The results are summarized in Table 10 for anger composites and in Table 11 for sadness composites.

As can be seen from Table 10, in the first regression equation, age and gender were entered in the first step as control variables, TB anger and NS anger in the second step. Two-way interactions of TB anger with age and gender and of NS anger with age and gender were entered in the third step. In the final step, two-way interaction of anger in both contexts was entered. Results showed that the variables entered at each step did not add to the prediction of CBCL

Table 10. Regression predicting Internalizing Symptoms from anger expressions in the Non-interpersonal (TB) and in the Interpersonal Context (NS)

		Outcome: Internalizing Symptoms											
		Step 1			Step 2			Step 3			Step 4		
		β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch} Overall F
Step 1.	C sex	1.40	1.11		1.54	1.16		1.45	1.18		1.38	1.19	
	C age	.23	1.11	.01	.33	1.18		.32	1.21		.34	1.21	
Step 2.	Anger (TB)				.40	.60		1.56	1.94		2.04	2.07	
	Anger (NS)				-.12	.71	.003	-.59	2.20	-.29	2.25		
Step 3.	Anger (TB) X C age							-.56	1.20		-.85	1.28	
	Anger (NS) X C age							.09	1.52		-.08	1.54	
	Anger (TB) X C sex							-.99	1.26		-1.17	1.29	
	Anger (NS) X C sex							.86	1.39	.008	.98	1.41	
Step 4.	Anger (TB) X Anger (NS)										.46	.69	.004
													.38

⁺ $p < .10$; * $p < .05$; ** $p < .01$. N = 128.

Table 11. Regression predicting Internalizing Symptoms from sadness expressions in the Non-interpersonal (TB) and in the Interpersonal Context (NS)

Outcome: Internalizing Symptoms													
		Step 1			Step 2			Step 3			Step 4		
		β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch}	β	S.E.(β)	R^2_{ch} Overall F
Step 1.	C sex	1.40	1.11		1.31	1.13		1.31	1.13		1.41	1.13	
	C age	.23	1.11	.01	.11	1.14		.17	1.15		.30	1.15	
Step 2.	Sadness (TB)				.13	.55		1.24	1.70		1.45	1.70	
	Sadness (NS)				.35	.58	.004	.43	1.79		.76	1.80	
Step 3.	Sadness (TB) X C age							-.12	1.11		-.22	1.11	
	Sadness (NS) X C age							-.15	1.38		-.19	1.37	
	Sadness (TB) X C sex							-2.24*	1.10		-2.41*	1.11	
	Sadness (NS) X C sex							-.06	1.24	.04	-.34	1.27	
Step 4.	Sadness (TB) X Sadness (NS)										.67	.50	.01 .92

⁺ $p < .10$; * $p < .05$; ** $p < .01$. N = 128.

internalizing, for the first step $F(2, 125) = .81$, ns; second step $F_{change2}(4, 123) = .22$, ns; third step $F_{change3}(8, 119) = .25$, ns; fourth step $F_{change4}(9, 118) = .44$, ns. The overall regression was also not significant, $F(5, 122) = .38$, ns, explaining a total of %2.8 of the variance in maternally reported internalizing symptoms.

As can be seen from Table 11, in the second regression, TB sadness and NS sadness were entered in the second step following the control variables. Two-way interactions of TB sadness with age and gender and of NS sadness with age and gender were entered in the third step. In the fourth step, a cross context sadness interaction composite of TB and NS sadness was entered. Results revealed that the variables entered at each step did not add to the prediction of CBCL internalizing, for the first step $F(2, 125) = .81$, ns; second step $F_{change2}(4, 123) = .24$, ns; third step $F_{change3}(8, 119) = 1.08$, ns; third step $F_{change4}(9, 118) = 1.83$, ns. The overall regression was also not significant, $F(5, 122) = .92$, ns, explaining a total of %6.6 of the variance in maternally reported internalizing symptoms. The only significant terms in this regression were the two way interactions of TB sadness with sex, , $[B] = -2.41$, $t = -2.18$, $p < .05$, replicating the pattern already reported in Table 7. This significant interaction effect suggests that internalizing symptoms increase as boys express more sadness in the non-interpersonal context.

3. Summary of the Results of the Predictive Analyses of CBCL Symptoms

Results of the separate regression analyses of context specific emotion composites revealed that anger and sadness expressions of preschool aged children in two different contexts failed to predict their externalizing and internalizing symptoms. Likewise, separate regression analyses results of across context emotion composites revealed that contextual variability in emotion

expressions did not add to predict externalizing and internalizing symptoms of preschool aged children.

Despite the insignificance and low explained variance by the regression equations, some significant interaction effects of emotion expressions with age and gender were observed. Accordingly, a significant interaction effect of age and NS anger composite, $[B] = -3.48$, $t = -2.11$, $p < .05$, and of gender and NS anger composite, $[B] = 3.02$, $t = 2.00$, $p < .05$ were found. These significant interaction effects suggest that externalizing symptoms increase as younger children and girls express more anger in the interpersonal context. These findings provide support for the hypothesis regarding the expectation of anger expressions in the interpersonal context to predict externalizing symptoms.

A significant interaction effect was also found in prediction analyses of internalizing symptoms. Accordingly, a significant interaction effect of gender and TB sadness composite, $[B] = -2.41$, $t = -2.18$, $p < .05$, was found. This significant interaction effect suggests that internalizing symptoms increase as boys express more sadness in the non-interpersonal context. This finding provides support for the hypothesis regarding the expectation of sadness expressions in both contexts to predict internalizing symptoms.

Together, these significant effects contribute partially to predict externalizing and internalizing symptoms by contextual variability in anger and sadness expressions as a function of age and gender.

IV. Discussion

The current study had two major goals: First, we aimed at examining normative individual differences in anger and sadness expressions of 3 to 6 year old preschoolers, in two different contexts –an interpersonal and a non-interpersonal context- in terms of age and gender differences and in terms of contextual variability. Second major goal of this study was to concurrently predict maternal reports of externalizing and internalizing symptoms of children, using their anger and sadness expressions in two different contexts. In addition, contextual consistency in anger and sadness expressions, which was hypothesized to be a non normative aspect of observed emotion expressions, was aimed at predicting symptom elevations. Possible potential moderators of those relations by children's age and gender were also tested.

Goal 1: Age, Gender and Context effects in Anger and Sadness

Literature on emotion expressions provides limited information on specific aspects of emotional reactivity especially during preschool years (Cole et al., 1994; Zahn-Waxler et al., 2000). To fill this gap in the literature, differences in anger and sadness expressions were examined in both interpersonal and non-interpersonal contexts as a function of age and gender. Despite the inconsistent findings on gender differences in anger and sadness expressions of preschool aged children, we hypothesized gender differences in both contexts. In the current study girls were expected to show less anger expressions in both contexts due to the socialization and culture effects (Cole et al., 2002; Matsumoto et al., 1998; Safdar et al., 2009), and they were expected to show more sadness expressions in the interpersonal context compared to boys because they were suggested to be more interpersonally orientated than boys (Zahn-Waxler et al., 2000).

However, those hypotheses were not supported by the results of the current study. The data did not support gender differences in anger or sadness expressions in the non-interpersonal (Transparent Box) context. A similar finding was also reported in a study with 2 year olds using the same paradigm, i.e. transparent box (Buss & Kiel, 2004). However, lack of gender differences in anger and sadness expressions of 2 year olds is not equivalent to our findings as our sample consisted of 3 to 6 year olds. Therefore it is unexpected and more difficult to explain the lack of gender differences in our study, because gender role socialization effects are expected to emerge in the preschool period. Similarly, contrary to our expectations, boys and girls did not significantly differ in their sadness expressions in the interpersonal context, and girls expressed significantly more anger at the interpersonal context than boys did. Jenkins & Oatley (2000) reported a similar finding; they also failed to find any gender differences in naturalistically observed anger and sadness expressions during recess time at school among 4 to 8 year olds.

One possible reason for the findings regarding gender differences in contrast to our expectations might be that expected culture and socialization effects may not be observed before school age because preschoolers' knowledge of display rules may not yet be sufficiently reflected in their affective behavior (Fox & Calkins, 2003; Lemerise & Dodge, 2004). However, Hubbard (2001) also failed to find any gender differences in sadness expressions of second grade African-American children in two experimental competitive game contexts, one with a fair and the other with a cheating confederate. Similarly, Yagmurlu & Sanson (2009) also failed to find any gender differences in child temperamental emotionality in Turkish Australian preschoolers. In addition, the experimenters in our study were two females, which might have affected the expressions of the children in the interpersonal context. Emotional reactions might have been different if they were observed by male and female experimenters in multiple interpersonal

contexts. Future studies should examine preschoolers' emotional reactions to both male and female experimenters in multiple contexts. The finding that girls showed more anger in the interpersonal context is again in contrast to our expectations, and also needs to be replicated in future studies.

With regard to contextual variability in anger and sadness expressions, all children in the current study were expected to show more anger and more sadness in the interpersonal context, because it was more provocative and because they were all from high SES backgrounds with high educated mothers, which may resulted in socialization goals for emotion displays that emphasize self assertion in interpersonal contexts. This hypothesis was supported in the current study. Results revealed that all children expressed significantly more anger and significantly more sadness in the interpersonal context (NS) than they did in the non-interpersonal context (TB).

Age differences in anger and sadness expressions were an exploratory examination, because the literature provided very limited and inconsistent evidence, especially when observer measures are used. In the current study, we failed to find any age differences in anger or sadness expressions in the non-interpersonal context. In addition no age differences were observed in anger expressions in the interpersonal context. However, older children showed significantly more sadness in the interpersonal context than younger children did. A possible explanation for this might be that younger group of children were slower to cognitively perceive that they were being treated unfairly in the cheating context. This might have caused coding of less sadness expressions in the same context due to the time limit of the episode.

Goal 2: Emotion and Psychopathology

Another goal of this study was to examine the interrelations of reactivity in anger and sadness in two contexts with symptom elevations. It was argued that lack of variability in anger and sadness expressions across the two contexts may be one way in which emotion dysregulation may manifest. In other words, when the incentive value of contexts differs from an interpersonal norm violation in the cheating context to goal-blocking in a non-interpersonal context, it may be normative for the level of reactivity in anger and sadness to also differ. In contrast, emotion dysregulation with respect to anger and sadness may manifest when levels of reactivity are consistent across contexts. Consistency in anger and sadness expressions across contexts can be captured with interactions of reactivity measures in those contexts. Specifically, children who consistently showed high reactivity in both contexts were hypothesized to be at greater risk for symptom elevations.

The results supported the first hypothesis. The intercorrelations between anger measures across the two contexts were positive but generally too weak in magnitude. The same was true for sadness measures. In other words, weak consistency in levels of reactivity in both sadness and anger across those contexts was the general pattern.

The results, however, did not support the second prediction. None of the interaction terms of anger in the two contexts or sadness in the two contexts predicted elevations in externalizing and internalizing symptoms. However, age and gender interacted with measures of reactivity to predict symptoms. For example, younger children and girls, who showed more anger in the interpersonal context, had also more externalizing symptoms. A possible explanation might be that girls may be more reactive to interpersonal contexts as suggested by Zahn-Waxler et al. (2000). In addition, boys, who expressed more sadness in the non-interpersonal context, had

more internalizing symptoms. This might be explained by boys' greater concern for success and their greater predisposition to use instrumental coping specified by a more active role to remove obstacles (Crick & Zahn-Waxler, 2003). Besides, in the non-interpersonal context boys' failure to successfully remove the block might have evoked a sense of inadequacy that resulted in greater sadness expressions as in the cases of learned helplessness.

The degree of support for emotion-pathology links was limited in two ways. First, both of the significant interaction effects occurred in the context of an overall insignificant regression. Second, the interaction of reactivity in anger in the two contexts or sadness in the contexts did not predict the outcome measures. While there was support for the contention that anger and sadness levels across the contexts would show low coherence, high coherence did not predict elevations in symptoms. For example, a competitive/cheating game with peers context, as it was suggested by Hubbard (2001), might be more sensitive to differentiate boys with externalizing problems from girls, similarly a disappointing gift task might be more sensitive to differentiate girls with externalizing problems.

With respect to the former limitation in findings, previous research has not reported interactions of reactivity in anger and sadness with age or gender on internalizing and externalizing symptoms in 4 to 8 year-olds (Jenkins & Oatley, 2000). In that study however, observations of anger and sadness were made during recess periods at school, a more naturalistic modality of observation. It is possible that age and gender moderate relations between emotional reactivity and symptoms when emotion eliciting events are classified. In other words, emotional reactivity in some contexts may be far more sensitive in detecting symptom elevations for boys and girls and at different age periods.

With respect to contextual variability in emotion reactivity in its relation to symptoms elevations, the findings did not support the predictions. In other words, there was no evidence that children high in anger or sadness in both contexts were more likely to have elevations in externalizing and internalizing symptoms. One reason for this might be the use of a normative sample. Although statistically we did not observe restriction of range in CBCL scores, the raw scores for both internalizing and externalizing, nevertheless, indicated that children were generally functioning well according to their mothers. It should be added that children in our sample had very low scores for both externalizing and internalizing symptoms. The scores ranged from 0 to 34 for externalizing scale with a mean of 11.47 with a standard deviation of 6.89, while the max possible score was 39. Similarly, scores ranged from 0 to 34, $M = 11.11$, $SD = 6.25$ for externalizing scale while the max possible score was 57. These scores were too weak and possibly caused a statistical limitation to observe a significant effect.

The homogeneity of the sample both in terms of SES background and symptoms, constitute the chief obstacle in generalizing from the null findings in this study. SES and parental education levels in our sample was high and difficult to generalize to the rest of Turkey. Sub-cultural differences and urban life style might have affected the findings, because our sample characteristics might be more similar to families from western individualist cultures rather than eastern collectivist culture. Studies that investigated gender role emotion socialization and sub-cultural differences in collectivist societies showed that families from urbanized areas are adapt a relatively more individualist life style compared to the families from rural areas of the same culture (e.g. Raval, Martini, & Raval, 2007; Kağıtçıbaşı, 1996; Yagmurlu et al., 2009). Future studies should investigate emotion expressions in a more heterogeneous sample from different areas of Turkey with comparable SES, family and ethnic backgrounds. In addition, observations

of emotion expressions were based on a single episode for each different context (i.e. TB for non-interpersonal and NS for interpersonal context). A single episode might have been insufficient to capture the relationship between contextual consistency in anger and sadness expressions and symptoms. Future studies should investigate the relationship between symptoms and contextual consistency in observed emotional reactions in multiple episodes.

The findings inform the discussion of measurement confounding between measures of emotional reactivity derived from temperament instruments and symptoms checklists as well (Lemery et al., 2002; Lengua et al., 1998; Lengua & Long, 2002; Sanson et al., 1990). As we discussed in the introduction and literature sections, studies that used questionnaire measures for both emotional reactions and symptoms might show inflated associations due to shared method and item overlap issues. In addition those measures generally fail to sensitively differentiate and provide specific links between symptoms and different dimensions of negative emotionality separately, like fear and anger or sadness. The results of this study suggest that in the absence of shared rater and method variance, it is possible the links between emotional reactivity in understudied components of negative affectivity, i.e. anger and sadness, and symptoms are quite small. Accordingly, previously reported high associations between symptoms and anger and sadness reactions in the studies, that used questionnaire measures for both constructs, might have been caused by shared method variance. Future studies need to replicate these findings with sensitive methodology.

Finally, how emotional reactivity is measured and summarized in observational paradigms such as the ones used in this study may also impact our ability to detect the links that do exist between emotional reactivity and symptoms. The data reduction methods used in the current study provided for a general summary of overall level of reactivity in anger and sadness

separately. It is possible that different methods of data reduction that characterize the emotional profile the child exhibits during these paradigms would be more sensitive to uncovering the relations between symptoms and observer emotional reactivity measures. For example, rates at which the child exhibits only sadness, only anger and rates of simultaneous anger and sadness expressions may carry different significance for symptom elevations.

Finally, lack of replication of gender differences in symptoms with previously reported findings in the literature (e.g. Campbell, 1994; Crick & Zahn-Waxler, 2003, Zahn-Waxler et al., 2000) is evidenced elsewhere in this study. For example, gender differences in symptoms emerge approximately by 4 years of age with boys showing more externalizing behaviors, whereas girls show more internalizing symptoms and this pattern becomes more obvious in adolescence (Keenan & Shaw, 1997; Crick & Zahn-Waxler, 2003; Zahn-Waxler et al., 2000). With the exception of a marginal effect on internalizing symptoms, with older girls having more internalizing symptoms than older boys, and younger girls having less internalizing than younger boys, the oft-reported age and gender differences in symptoms (Campbell, 1995, Zahn-Waxler et al., 2000; Crick & Zahn-Waxler, 2003), were generally not replicated in this study. It is possible that lack of significant gender differences might stem from the use of a normative sample during the preschool years. Lack of replication could also point to cultural differences that are poorly understood (Crick & Zahn-Waxler, 2003, Zahn-Waxler et al., 2000).

Limitations and Strengths

The limitations of this study have to do with cross-sectional design. Due to its cross-sectional design the study only examines concurrent relationships. Therefore, it fails to provide a developmental perspective on emotion expressions. It is possible the differences observed in anger and sadness expressions observed across two contexts are harbingers of externalizing and

internalizing problems that are not yet apparent in this age range. Emotional reactivity may show modest relations to behavior problems, but it may act as a moderator in the development of behavior disorders. For instance, negative reactivity of girls may elicit more negative parenting behavior, and their interaction may predict the development of specific behavior problems. Future studies should examine longitudinal relationships between anger and sadness expressions and the developmental pathways to specific symptoms in both normative and risk samples.

The strengths of the study lie in the methodology related to sensitive measurement of emotional reactivity in standard contexts. Given the use of such measures, the sample size can be considered large. This study is one of the very few studies in literature that used observer measures in emotion expressions and related those differences to maternally reported symptoms. Furthermore, the coding of the data from the videotapes was accomplished by independent teams of research assistants who were blind to the hypotheses of this study. None of the significant correlations were driven by shared method variance. Future studies should also use sensitive measures for assessing various emotional responses to avoid measurement confound, and should compare their distinct and specific contributions in the development or prevention of internalizing and externalizing symptoms.

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VI. Appendices

APPENDIX I



Koç Üniversitesi



Boğaziçi Üniversitesi

___ / ___ / 200__

Sayın Yönetici,

Okul öncesi dönemdeki çocukların duygusal ve sosyal gelişimini inceleyen bir araştırma yapıyoruz. Bu çalışma ile çocuğun sosyal davranışları ile duygusal becerileri arasındaki ilişkiyi daha iyi anlamayı amaçlıyoruz. Bu mektubu, sizden bu önemli çalışmaya katkınızı rica etmek için yazıyoruz.

Çalışmamıza yardımcı olmayı kabul ederseniz, yuvanızdaki 4-6 yaş gruplarındaki çocukların velilerine araştırmamızı anlatan bilgilendirme mektubunu (bkz. Ek) dağıtmanızı rica edeceğiz. İzin formunu doldurarak araştırmamızda yer almayı kabul eden annelerin ve çocuğun öğretmeninin birer anket kitapçığı doldurmalarını isteyeceğiz. Bu anket kitapçıkları çocuğun sosyal davranışları ile duygusal becerileri üzerine sorular içerecek. Ayrıca araştırma grubumuzdaki Psikoloji Bölümü asistanlarımızdan ikisi çocuğu, yuva programını aksatmayacak, sizin belirlediğiniz uygun bir zamanda görecektir ve çocukla oyun benzeri aktiviteler yapacak. Aktiviteler bu yaş grubundaki çocukların ne kadar girişken veya çekingen olduklarını, dikkatli dinleme, yönergeleri takip etme ve problem çözme becerilerini ne kadar kolaylıkla yaptıklarını tespit etmeyi amaçlamaktadır. Çocukların bu davranışlarını değerlendirebilmek için aktiviteleri (örn.: boyama, kukla oyunu, kilidi açan anahtar bulma oyunu) kameraya çekeceğiz. 40-45 dakikalık bir görüşmede yapılacak bu aktivitelerden çocukların büyük çoğunluğu çok hoşlanmaktadır. Araştırmadan elde edilen tüm bilgiler kesinlikle gizli tutulacak, kişilere ait veriler isimle değil, numarayla tanımlanacak ve kullanılacaktır. Video kayıtları araştırma sona erdiğinde silinecektir. Çalışma tamamlandıktan sonra, grup sonuçlarını içeren raporu sizlere göndereceğiz.

Araştırmamızda yer alacak olan çocukları sağlamada yuvanızdan yardım alabilirsek size müteşekkirdir kalacağız. Çalışmanın herhangi bir bölümüyle ilgili olarak sorularınız olursa, lütfen bizimle irtibata geçmekten çekinmeyiniz. Yardım ve katkılarınız için şimdiden teşekkürlerimizi sunarız.

Saygılarımızla,

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CEVAP KAĞIDI

Çocukların sosyal ve duygusal gelişimiyle ilgili olan bu çalışmaya katılmak istiyorum ☐ / istemiyorum ☐ .

Yuvanın ismi: _____

Adresi: _____

Telefon numarası: _____

Faks numarası: _____

Yuvadaki 4-6 yaş gruplarındaki çocuk sayısı: _____

Yöneticinin ismi: _____

İmza: _____

Teşekkür ederiz! ☺



__ / __ / 200__

Sayın Anne,

Okul öncesi dönemdeki çocukların sosyal ve duygusal gelişimlerini inceleyen bir araştırma yapıyoruz. Bu çalışmada 4-6 yaş grubundaki çocuklar ve anneleri ile yuvadaki öğretmenleri yer alacaktır. Bu mektubu, sizden çalışmamıza katılmanızı rica etmek için yazıyoruz. Katılmayı kabul ederseniz, lütfen ekteki anket kitapçığını cevaplayınız. Bu anketler çocuğunuzun davranışları ile ilgili sorular içermektedir. Yuvadaki öğretmen de, çocuğunuzun sosyal ve duygusal becerileriyle ilgili bir anket dolduracaktır. Bu anketlere ek olarak, araştırma grubumuzdaki Psikoloji Bölümü asistanlarımızdan ikisi çocuğunuzu, yuva programını aksatmayacak, sizin belirlediğiniz uygun bir zamanda görecektir ve onunla bazı oyun benzeri aktiviteler yapacaktır. Aktiviteler bu yaş grubundaki çocukların ne kadar girişken veya çekingen olduklarını, dikkatli dinleme, yönergeleri takip etme ve problem çözme becerilerini ne kadar kolaylıkla yaptıklarını tespit etmeyi amaçlamaktadır. Çocukların bu davranışlarını değerlendirebilmek için aktiviteleri (örn.: boyama, kukla oyunu, kilidi açan anahtar bulma oyunu) kameraya çekeceğiz. 40-45 dakikalık bir görüşmede yapılacak bu aktivitelerden çocukların büyük çoğunluğu çok hoşlanmaktadır. Bu çalışmadaki tüm bilgiler gizli tutulacak, kişilere ait veriler isimle değil, numarayla tanımlanacak ve kullanılacaktır. İsteyen velilere kendi çocuklarının video kaydı e-posta ile yollanacaktır. Elimizdeki video kayıtları ise araştırma sona erdiğinde hemen silinecektir. Çalışma tamamlandıktan sonra bilgilenmeniz için grup sonuçlarını içeren raporu çocuğunuzun kreşine/anaokuluna göndereceğiz.

Bu önemli çalışmada bize yardımcı olmak isterseniz, lütfen ekteki “İzin Formu”nu doldurunuz ve çocuğunuzun kreşine/anaokuluna geri veriniz. Çalışmaya katılmak istemiyorsanız, lütfen anketleri ve formu doldurmadan çocuğunuzun yuvadaki öğretmenine geri veriniz.

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VELİNİN İZİN FORMU

Çocukların sosyal gelişimiyle ilgili olan bu çalışmaya katılmak

☐ istiyorum / istemiyorum ☐.

Araştırma sona erdiğinde, çocuğuma ait video kaydının e-posta adresime yollanmasını

☐ istiyorum, e-posta adresim: _____

☐ istemiyorum.

(Birden çok çocuğunuz varsa, bu bölümü lütfen yuvanın 4-6 yaş gruplarına devam etmekte olan çocuğunuzu düşünerek doldurunuz. Bu gruplarda birden çok çocuğunuz varsa lütfen ikisi için ayrı ayrı bilgi yazınız):

Çocuğumun İsmi: _____ Cinsiyeti: _____

ve Doğum Tarihi: _____

Velinin İsmi: _____ Telefon numarası: _____

Ve İmzası: _____

Bu kağıdı doldurarak en kısa zamanda lütfen çocuğunuzun kreşine/anaokuluna geri gönderiniz.

Teşekkür ederiz! ☺

APPENDIX II

1 ½ - 5 YAŞ ÇOCUKLARI İÇİN DAVRANIŞ DEĞERLENDİRME ÖLÇEĞİ

KATILIMCI NO _____

Aşağıda çocukların özelliklerini tanımlayan bir dizi madde bulunmaktadır. Her bir madde **çocuğunuzun şu andaki ya da son 6 ay** içindeki durumunu belirtmektedir. Bir madde çocuğunuz için **çok ya da sıklıkla doğru ise 2, bazen ya da biraz doğru ise 1, hiç doğru değilse 0** sayılarını yuvarlak içine alınız. Lütfen tüm maddeleri işaretlemeye çalışınız.

0: Doğru Değil (Bildiğiniz kadarıyla)	1: Bazen ya da Biraz Doğru	2: Çok ya da Sıklıkla Doğru
0 1 2 1. Ağrı ve sızıları vardır (tıbbi nedeni olmayan)	0 1 2 27. Hatalı davranışından dolayı suçluluk duymaz	
0 1 2 2. Yaşından daha küçük gibi davranır	0 1 2 28. Evden dışarı çıkmak istemez	
0 1 2 3. Yeni şeyleri denemekten korkar	0 1 2 29. Güçlülükle karşılaştığında çabuk vazgeçer	
0 1 2 4. Başkalarıyla gözgöze gelmekten kaçınır	0 1 2 30. Kolay kıskanır	
0 1 2 5. Dikkatini uzun süre toplamakta ya da sürdürmekte güçlük çeker	0 1 2 31. Yenilip içilmeyecek şeyleri yer ya da içer-(kum, kil, kalem, silgi gibi)- (açıklayınız).....	
0 1 2 6. Yerinde rahat oturamaz, huzursuz ve çok hareketlidir	0 1 2 32. Bazı hayvanlardan, ortamlardan ya da yerlerden korkar (açıklayınız).....	
0 1 2 7. Eşyalarının yerinin değiştirilmesine katlanamaz	0 1 2 33. Duyguları kolayca incinir	
0 1 2 8. Beklemeye tahammülü yoktur, herşeyin anında olmasını ister.	0 1 2 34. Çok sık biryerlerini incitir, başı kazadan kurtulmaz	
0 1 2 9. Yenmeyecek şeyleri ağzına alıp çiğner	0 1 2 35. Çok kavga dövüş eder	
0 1 2 10. Yetişkinlerin dizinin dibinden ayrılmaz, onlara çok bağımlıdır	0 1 2 36. Herşeye burnunu sokar	
0 1 2 11. Sürekli yardım ister	0 1 2 37. Anne-babasından ayrıldığında çok tedirgin olur	
0 1 2 12. Kabızdır, kakasını kolay yapamaz (hasta değilken bile)	0 1 2 38. Uykuya dalmada güçlük çeker	
0 1 2 13. Çok ağlar	0 1 2 39. Baş ağrıları vardır (tıbbi nedeni olmayan)	
0 1 2 14. Hayvanlara eziyet eder	0 1 2 40. Başkalarına vurur	
0 1 2 15. Karşı gelir	0 1 2 41. Nefesini tutar	
0 1 2 16. İstekleri anında karşılanmalıdır	0 1 2 42. Düşünmeden, insanlara ya da hayvanlara zarar verir	
0 1 2 17. Eşyalarına zarar verir	0 1 2 43. Hiç bir neden yokken mutsuz görünür	
0 1 2 18. Ailesine ait eşyalara zarar verir	0 1 2 44. Öfkeli	
0 1 2 19. Hasta değilken bile ishal olur, kakası yumuşaktır	0 1 2 45. Midesi bulanır, kendini hasta hisseder (tıbbi nedeni olmayan)	
0 1 2 20. Söz dinlemez, kurallara uymaz	0 1 2 46. Bir yerleri seyirir, tikleri vardır (açıklayınız).....	
0 1 2 21. Yaşam düzenindeki en ufak bir değişiklikten rahatsız olur	0 1 2 47. Sinirli ve gergindir	
0 1 2 22. Tek başına uyumak istemez	0 1 2 48. Gece kabusları vardır, korkulu rüyalar görür	
0 1 2 23. Kendisiyle konuşulduğunda yanıt vermez	0 1 2 49. Aşırı yemek yer	
0 1 2 24. İştahsızdır (açıklayınız).....	0 1 2 50. Aşırı yorgundur	
0 1 2 25. Diğer çocuklarla anlaşamaz	0 1 2 51. Hiç bir neden yokken panik yaşar	
0 1 2 26. Nasıl eğleneceğini bilmez, büyümüş de küçülmüş gibi davranır	0 1 2 52. Kakasını yaparken ağrısı acısı olur	
	0 1 2 53. Fiziksel olarak insanlara saldırır, onlara vurur	

0: Doğru Değil (Bildiğiniz kadarıyla)	1: Bazen ya da Biraz Doğru	2: Çok ya da Sıklıkla Doğru
0 1 2 54. Burnunu karıştırır, cildini ya da vücudunun diğer taraflarını yolar (açıklayınız).....	0 1 2 77. Bir yere boş gözlerle uzun süre bakar ve dalgın görünür	0 1 2 78. Mide-karın ağrısı ve krampları vardır(tıbbi nedeni olmayan)
0 1 2 55. Cinsel organlarıyla çok fazla oynar	0 1 2 79. Üzgünken birden neşeli, neşeli iken birden üzgün olabilir	0 1 2 80. Yadırganan, tuhaf davranışları vardır (açıklayınız).....
0 1 2 56. Hareketlerinde tam kontrollü değildir, sakardır	0 1 2 81. İnatçı, somurtkan ve rahatsız edicidir	0 1 2 82. Duyguları değişkendir, bir anı bir anını tutmaz
0 1 2 57. Tıbbi nedeni olmayan, görme bozukluğu dışında göz ile ilgili sorunları vardır (açıklayınız).....	0 1 2 83. Çok sık küser, surat asar, somurtur	0 1 2 84. Uykusunda konuşur, ağlar, bağırır
0 1 2 58. Cezadan anlamaz, ceza, davranışını değiştirmez	0 1 2 85. Öfke nöbetleri vardır, çok çabuk öfkelenir	0 1 2 86. Temiz, titiz ve düzenlidir
0 1 2 59. Bir uğraş ya da faaliyetten diğerine çabuk geçer	0 1 2 87. Çok korkak ve kaygılıdır	0 1 2 88. İşbirliği yapmaz
0 1 2 60. Döküntüleri ya da başka cilt sorunları vardır (tıbbi nedeni olmayan)	0 1 2 89. Hareketsiz ve yavaştır, enerjik değildir	0 1 2 90. Mutsuz, üzgün, çökkün ve keyifsizdir
0 1 2 61. Yemek yemeyi reddeder	0 1 2 91. Çok gürültücüdür	0 1 2 92. Yeni tanıdığı insanlardan ve durumlardan çok tedirgin olur (açıklayınız).....
0 1 2 62. Hareketli, canlı oyunlar oynamayı reddeder	0 1 2 93. Kusmaları vardır (tıbbi nedeni olmayan)	0 1 2 94. Geceleri sık sık uyanır
0 1 2 63. Başını ve bedenini tekrar tekrar sallar	0 1 2 95. Alıp başını gider	0 1 2 96. Çok ilgi ve dikkat ister
0 1 2 64. Gece yatağına gitmemek için direnir	0 1 2 97. Sızlanır, mızırdanır	0 1 2 98. İçe kapanıktır, başkalarıyla birlikte olmak istemez
0 1 2 65. Tuvalet eğitimine karşı direnir (açıklayınız).....	0 1 2 99. Evhamlıdır	0 1 2 100. Çocuğunuzun burada değinilmeyen başka sorunu varsa lütfen yazınız
0 1 2 66. Çok bağırır, çağırır, çığlık atar	0 1 2	0 1 2
0 1 2 67. Sevgiye, şefkate tepkisiz görünür	0 1 2	0 1 2
0 1 2 68. Sıkılgan ve utangaçtır	0 1 2	0 1 2
0 1 2 69. Bencildir, paylaşmaz	0 1 2	0 1 2
0 1 2 70. İnsanlara karşı çok az sevgi, şefkat gösterir	0 1 2	0 1 2
0 1 2 71. Çevresindeki şeylere çok az ilgi gösterir	0 1 2	0 1 2
0 1 2 72. Canının yanmasından, incinmekten pek az korkar	0 1 2	0 1 2
0 1 2 73. Çekingen ve ürkektir	0 1 2	0 1 2
0 1 2 74. Gece ve gündüz çocukların çoğundan daha az uyur (açıklayınız).....	0 1 2	0 1 2
0 1 2 75. Kakasıyla oynar ve onu etrafa bulaştırır	0 1 2	0 1 2
0 1 2 76. Konuşma sorunu vardır (açıklayınız).....	0 1 2	0 1 2

LÜTFEN TÜM MADDELERİ YANITLAYINIZ

SİZİ KAYGILANDIRAN MADDELERİN ALTINI ÇİZİNİZ

Çocuğunuzun herhangi bir fiziksel hastalığı ya da zihinsel bir engeli var mıdır?

☐ Hayır

☐ Evet- Lütfen açıklayınız

Çocuğunuzun sizi en çok üzen, kaygılandıran özellikleri nelerdir?

Çocuğunuzun en beğendiğiniz özelliklerini lütfen belirtiniz:

APPENDIX III

The Original Versions and the Adapted Turkish Translation Versions of the Episode Scripts

Portions of eventual session script (Emotional reactivity episodes for 4 & 6 year-olds):

Abbrev. E (Experimenter, tester etc.) C is child

General translation & script note:

In the script below, you will find several references to E having left the room. When this is not feasible in preschool settings (e.g. no place to go or likely to elicit distress from C), the E needs to be psychologically absent for the C. Typically, this can be accomplished in two ways. One option is for E to leave the table and increase distance between self & C, and stay still with her back turned toward the C (e.g. reading). In this option, E gives the excuse that she needs to be busy getting ready for next game or needs to finish her work before the next game. The second option is to create or spot a physical space in the room where the E can go to be absent (e.g. behind shelves partly visible to C away from filming zone). In the second option the E can be physically more active.

Transparent box (anger episode): (3 minutes)

Position: Seated at table

Props: Transparent box with a padlock and a set of non-fitting keys (one correct key) and a choice of toys which fully fit into the box.

Procedure: Earlier in session, E asks C which set of toys s/he would like to play with later. At the time of the episode, E locks the toy C chose at session outset inside the box. Then E takes box w/ padlock, non-fitting keys to C and says: ‘Remember the _____ that you wanted to play, it’s right in this box. You can play with it for a while if you can open this lock. The keys are supposed to be in this chain here but I don’t know which one actually opens the box. Why don’t you help me find the keys so we can take it out of the box & play with it. I will be back in a few minutes. E is out of the room for 2.5 minutes. Upon return, E says: ‘Look what I found, the keys to the box! I totally forgot that I took the keys out of that chain and placed them into this chain. Open box and let C play until affect recovers to baseline (max 1 minute).

Contingencies:

If C interrupts or otherwise pleads for help, E does not establish eye contact or starts up idle conversation, avoids C for as long as possible (bury your head into a reading). When C is persistent for attention, E re-iterates that she will try and help in a few minutes, encourages C to work on it a few more minutes.

Şeffaf kutu (öfke yaratan faaliyet): (3 dak)

Pozisyon: masada oturarak

Malzemeler: Şeffaf bir kutu, kutunun asma kilidi, asma kilide uyan doğru 1 anahtar ile uymayan çok sayıda anahtar, ve kutunun içine sığacak büyüklükte iki oyuncak.

Prosedür: Seansın başında A Ç’a daha sonra hangi oyuncakla oynamak istediğini sorar. Epizod sırasında A, Ç’un seçtiği oyuncakı şeffaf kutunun içine kilitler. Daha sonra A asma kilitli kilitlenmiş olan kutuyu uymayan anahtarlarla birlikte Ç’a verir ve şöyle der:

‘Oynamak istediğin _____ bu kutunun içinde. Eğer kilidi açabilirsen onunla bir süre oynayabilirsin. Anahtar bunlardan biri (göster) olmalı ama hangisi olduğunu bilmiyorum.

Hadi sen bana anahtarı bulmam için yardım et ki istediğin oyuncakı kutudan çıkarıp oynayabilesin. Ben de birkaç dakikaya geliyorum.” A 2 dakika için odadan çıkar. Döndüğünde A şöyle der:

‘Bak ne buldum, kilidin anahtarı! Ben kilidin anahtarını o halkadan çıkarıp buna taktığımı tamamen unutmuşum.’ Kutuyu açın ve Ç’a duygusu normale dönene kadar oynaması için izin verin (en fazla 1 dakika).

Riskler:

Eğer Ç işinize mani olmaya çalışırsa veya yardım isterse, A Ç’la göz kontağı kurmaz veya boş bir konuşmaya girmez, Ç’u olabildiğince uzun süre görmezden gelmeye çalışır (kafanızı okuduğunuz kitaba gömün). Ç ilgi istemekte ısrar ediyorsa A Ç’a birkaç dakika içinde tekrar yardımcı olmaya çalışacağını tekrar söyleyerek Ç’u biraz daha kendi başına çalışması için cesaretlendirir.

Not sharing (Anger episode) (3 minutes)

Position: Seated

Props: 1- Two empty zip lock bags and 1 ziplock bag filled with hard candy

Procedure: Camera person brings out the candy & 2 empty zip lock bags and approaches C’s table. S/he says: ‘Look what I have, a whole bag of really yummy candy. You guys have been so good at these games, I think you deserve this candy. But I want you (to E) to share this candy so that you get half and ____ (C’s name) gets half. Make sure you share now. Do you promise to share (asking E)? E answers in the affirmative: ‘I always share.’

Camera returns to his/her station. E begins dividing the candy equally at the outset making sure C is noticing the fair division initially and then begins to cheat. E says: ‘I give you one candy (placing it on C’s zip lock bag) and I take one piece of candy for me. Do you think we have the same amount of candy? We do, right? See, we both have the same amount of candy just one piece. OK, I give you one more and I take one more for me. Do you think we have the same amount of candy? We do, right? See, we both have the same amount of candy just two pieces, one two... (pointing to C’s pile) one two... (pointing to E’s pile). I give you one more and I take one more for me. Do you think we have the same amount of candy? We do right? See, we both have the same amount of candy just three pieces, one two three... one two three...(pointing).’

E continues: ‘I am going to take two for me and give you one. Oh look, there’s a piece of chocolate. I love chocolate! I am going to take three pieces of chocolate and give you one. Oh, well actually I just love candy so much, I am going to take the rest of this myself (Dumps the contents of the bag into E’s pile)’. E looks at C’s pile of candy and says: ‘You know what, I don’t think you need all of that candy. I am going to take yours too (takes all of C’s candy & merges with own pile)’ and then asks: ‘So what do you have to say about that?’ Give C 30 seconds before delivering the following briefing: ‘You know what, I think this is very unfair of me (E looks the part of a very guilty person on her face). I am sorry. (Camera person)____ told us to share and I didn’t. Why don’t we both take 2 pieces of candy so our tummy doesn’t hurt later from too much candy. (Divide equally and give the remaining candy back to camera person in a bag).’

Contingencies & Notes: If C is too distressed, discontinue and switch to briefing statement. In general, do not have eye contact with C other than to play the part of a ‘spoiled brat.’

Paylaşmama (Öfke epizodu) (4-5 dakika)

Pozisyon: oturarak

Malzemeler: 1- İki tanesi boş ve bir tanesi katı şekerlemelerle dolu ağzı fermuarlı torba/çanta

Prosedür: Seansı kameraya çeken kişi şekerleme dolu ve 2 boş ağzı fermuarlı torbayı getirir ve Ç’un masasına yaklaşır. Şöyle der: ‘Bak bende ne var, çok lezzetli şekerlerle dolu bir torba. Siz ikiniz bu oyunlarda o kadar iyiydiniz ki bence bu şekerleri paylaşmayı hakettiniz. Ama ben bu şekeri (A’ya söyler) ____ (Ç’un adı)’la yarı yarıya paylaşmanı istiyorum. Şimdi eşit olarak paylaşacağınızdan emin olun, paylaşacağına söz veriyor musun (A’ya sorarak)?’

A onaylayarak cevap verir: ‘Ben her zaman paylaşıyorum.’

Seansı kameraya çeken kişi kendi yerine geri döner. A başlangıçta Ç’un fark ettiğinden emin olacak şekilde şekeri eşit olarak adilce paylaşır sonra da hile yapmaya başlar. A şöyle der:

- Ben sana bir şeker veriyorum (şeker Ç’un fermuarlı torbasına koyarak) ve kendime bir tane alıyorum. İkimizde de aynı sayıda/miktarda şeker var mı, ne dersin? Aynı, değil mi? Bak ikimizde de aynı sayıda şeker var, sende de bende de birer tane.
- Tamam sana bir tane daha veriyorum ve kendime de bir tane daha alıyorum. Aynı sayıda şekerimiz var mı, ne dersin? Aynı, değil mi? Bak ikimizde de aynı sayıda şeker var, sende de bende de ikişer tane, bir iki... (Ç’unkileri işaret ederek).
- Sana bir tane daha veriyorum ve kendime de bir tane daha alıyorum. Aynı sayıda şekerimiz var mı, ne dersin? Aynı, değil mi? Bak ikimizde de aynı sayıda şeker var, sende de bende de üçer tane, bir iki üç... bir iki üç... (işaret ederek).’

A devam eder:

- ‘Kendime iki tane alacağım ve sana bir tane vereceğim.
- Aaaa bak, burada çikolata da var. Ben çikolataya bayılıyorum! Kendime üç parka çikolata alacağım ve sana bir parça vereceğim.
- Ya, aslında ben şekerleri o kadar çok seviyorum ki geri kalanların hepsini kendime alacağım (kalanların hepsini A’nın torbasına döker).’
- A Ç’un şeker dolu torbasına bakar ve şöyle der: ‘Biliyor musun, bence senin bu şekerlere ihtiyacın yok, ben seninkileri de alacağım (Ç’un tüm şekerlerini alır ve kendininkilere katar)’ sonra da sorar:
- ‘Eee peki sen ne diyorsun bu duruma?’ Ç’a şu açıklamayı yapmadan önce 30 saniye verir:
- ‘Biliyor musun, sanırım haksızlık yaptım (A yüzünde çok suçlu hissettiğini belirten bir ifadeyle bakar). Özür dilerim. (Seansı kameraya çeken kişi)___ bize yarı yarıya paylaşmamızı söyledi ve ben onu dinlemedim. En iyisi ikimiz de karnımız ağrmasın diye sadece ikişer tane şeker alalım. (Eşit olarak bölüşür ve geri kalan şekerleri bir torbanın içinde seansı kameraya çeken kişiye verir).’

Riskler & Notlar: Eğer Ç aşırı rahatsız olursa, devam etmeyin ve açıklama cümlesine geçin. Genel olarak Ç’la ‘şımarık ve mızıkçı çocuk’ rolünü oynamak dışında bir göz kontağı kurmayın.

The original and Turkish Translation of the Coding Format Tables

Transparent box

ID _____ Date _____ Coder _____

Latency to Sadness _____ (if never 121) Latency to anger _____ (if never 121)
 Latency to distract _____ (if never 121)

<u>Minute 1:</u>	5	10	15	20	25	30	35	40	45	50	55	60
Sadness												
Anger/ frustration												
Engaged												

Peak intensity of Sadness (0-3): _____ Peak Intensity of Anger/frustration (0-3): _____
 Total # of: Sadness _____ Anger/frustration _____ Engaged _____

<u>Minute 2:</u>	5	10	15	20	25	30	35	40	45	50	55	60
Sadness-												
Anger/ frustration												
Engaged												

Peak intensity of Sadness (0-3): _____ Peak Intensity of Anger/frustration (0-3): _____
 Total # of: Sadness _____ Anger/frustration _____ Engaged _____

Total # of segments _____

Intensity definitions are on a separate sheet. All verbal and nonverbal expressions of the target affect are considered in judging the presence of the emotion in each epoch and for overall peak intensity expressions for each minute.

Not sharing

ID _____ Date _____ Coder _____

Latency to Sadness _____ (if never 121) Latency to anger _____ (if never 121)

Latency to refuse _____ (if never 121)

Minute 1:	5	10	15	20	25	30	35	40	45	50	55	60
Sadness-nonverbal (0-2)												
Sadness-verbal (0-1)												
Anger/contempt/frustration nonverbal (0-2)												
Anger/contempt/frustration verbal (0-1)												

Peak intensity of Sadness (0-3): _____ Peak Intensity of Anger/contempt/frustration (0-3): _____

Minute 2:	5	10	15	20	25	30	35	40	45	50	55	60
Sadness-nonverbal (0-2)												
Sadness-verbal (0-1)												
Anger/contempt/frustration nonverbal (0-2)												
Anger/contempt/frustration verbal (0-1)												

Peak intensity of Sadness (0-3): _____ Peak Intensity of Anger/contempt/frustration (0-3): _____

Total # of:

Nonverbal Sadness (1-noncommunicative/ expressive/experiential)

Nonverbal Sadness (2-communicative)

Verbal Sadness (1)

Nonverbal anger/frustration/contempt (1-noncommunicative/ expressive)

Nonverbal anger/frustration/contempt (2-communicative)

Verbal anger/frustration/contempt (1)

Total # of segments

Min#1 **Min#2**

Intensity Definitions for Anger/Sadness episodes

In both Transparent Box and Not Sharing episodes, note the presence of target emotional expression (sad/ angry-frustrated-contemptuous) using information from all modalities (facial, bodily and vocalizations-verbalizations). The peak intensity scales are used similarly in both episodes. However, in the Not Sharing episode, additional distinctions are made in noting emotional reactions.

Those additional distinctions which only apply to Not Sharing episode are as follows:

All sadness and anger/contempt/frustration expressions are coded for verbal and nonverbal modes of expression. If **verbal statements** indicate sad and/or angry/frustrated/contemptuous emotional response, assign a code of 1 otherwise assign a code of 0. When emotion expressions are **nonverbal** in nature, an important additional distinction is made concerning the function of emotional expression. Nonverbal emotional expressions can serve a predominantly **communicative** function (code of 2) or a **non-communicative/ expressive** (code of 1) function. The distinction between a score of 1 versus 2 reflects the direction of gaze at the time the target expression occurs. For example, if the C looks at E's direction with a sad expression assign a score of 2 (communicative); in contrast if sad expression occurs as the C is looking at his paper/drawing, assign a score of 1 (experiential-non-communicative). If C looks at E's direction with frustration/ anger assign a score of 2 (communicative); in contrast if angry expression occurs as the C is looking at his paper/drawing assign a score of 1 (experiential-non-communicative).

Bodily & facial cues to Sadness versus Anger/frustration/contemptuous expressions:

Sadness: Pouting lips, loss of tone in cheeks, jaw; slumped body, hunched shoulders; gaze down; resignation.

Frustration/ Anger/ contempt: square mouth/pursed lips; furrowed brows; focused-directed "threat" looks to E; protest vocalizations; asymmetrical expressions of contempt.

Intensity: 0 - the expression did not occur

1- only very brief and mild intensity expression (usually the emotion is apparent in a single region of the face and tends not apparent in the body and is certainly not apparent vocally or verbally)

2- mild but sustained expressions or brief but strong expressions (either multiple facial regions are active or two modalities (face & body) are active).

3- moderate and sustained expressions or sustained and strong expressions

Seffaf Kutu

ID _____ Tarih _____ Kodlayan _____

Üzüntü gözlemlenene kadar geçen süre _____ (hiç üzüntü gözlemlenmediyse 121)

Öfke gözlemlenene kadar geçen süre _____ (hiç öfke gözlemlenmediyse 121)

Dikkatini başka yöne verdiği gözlemlenene kadar geçen süre _____ (dikkatini başka yöne verdiği hiç gözlemlenmediyse 121)

<u>Dakika 1:</u>	5	10	15	20	25	30	35	40	45	50	55	60
Üzüntü												
Öfke/ Asabiyet (frustration)												
Katılım (Engaged)												

Üzüntünün en yoğun düzeyi (0-3): _____ Öfke/asabiyetin en yoğun düzeyi (0-3): _____

Toplam # : Üzüntü _____ Öfke/asabiyetin _____ Katılım _____

<u>Dakika 2:</u>	5	10	15	20	25	30	35	40	45	50	55	60
Üzüntü												
Öfke/ Asabiyet (frustration)												
Katılım (Engaged)												

Üzüntünün en yoğun düzeyi (0-3): _____ Öfke/asabiyetin en yoğun düzeyi (0-3): _____

Toplam # : Üzüntü _____ Öfke/asabiyetin _____ Katılım _____

Tüm kesimlerdeki toplam # _____

Duyguların yoğunluk tanımları ayrı bir sayfada bulunmaktadır. Hedef duygunun (affect) tüm sözel ve bedensel ifadeleri, duygunun her devirdeki varlığını ve her dakikanın genelinde gözlemlenen en yoğun ifadesini belirlemekte değerlendirilir. (All verbal and nonverbal expressions of the target affect are considered in judging the presence of the emotion in each epoch and for overall peak intensity expressions for each minute.)

Paylaşmama

ID _____ Tarih _____ Kodlayan _____

Üzüntü gözlemlenene kadar geçen süre _____ (hiç üzüntü gözlemlenmediyse 121)

Öfke gözlemlenene kadar geçen süre _____ (hiç öfke gözlemlenmediyse 121)

Reddettiği gözlemlenene kadar geçen süre _____ (hiç reddetmediyse 121)

<u>Dakika 1:</u>	5	10	15	20	25	30	35	40	45	50	55	60
Üzüntü- bedensel (0-2)												
Üzüntü- sözel (0-1)												
Öfke/ Kurallara uymama (contempt) / Asabiyet- bedensel (0-2)												
Öfke/ Kurallara uymama (contempt)/ Asabiyet- sözel (0-2)												

Üzüntünün en yoğun düzeyi (0-3): _____

Öfke/ kurallara uymama/ asabiyetin en yoğun düzeyi (0-3): _____

<u>Dakika 2:</u>	5	10	15	20	25	30	35	40	45	50	55	60
Üzüntü- bedensel (0-2)												
Üzüntü- sözel (0-1)												
Öfke/ Kurallara uymama (contempt) / Asabiyet- bedensel (0-2)												
Öfke/ Kurallara uymama (contempt)/ Asabiyet- sözel (0-2)												

Üzüntünün en yoğun düzeyi (0-3): _____

Öfke/ kurallara uymama/ asabiyetin en yoğun düzeyi (0-3): _____

Toplam # :

Bedensel Üzüntü (1-iletişimsiz (noncommunicative)/ ifade edici (expressive)/ deneyimleyici (experiential))

Bedensel Üzüntü (2-iletişimsel (communicative))

Sözel Üzüntü (1)

Bedensel Öfke/ asabiyetin / kurallara uymama

(1- iletışimsiz (noncommunicative)/ ifade edici (expressive))

Bedensel Öfke/ asabiyetin / kurallara uymama

(2- iletışimsel (communicative))

Sözel Öfke/ asabiyetin / kurallara uymama (1)

Tüm kesimlerdeki toplam #

Dakika#1 Dakika#2

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Öfke/Üzüntü Epizodları için Yoğunluk Tanımları

Hem şeffaf kutu hem de paylaşmama epizodlarında hedef duygunun (üzgün/öfkeli-asabi-kurallara uymayan) ifadesinin varlığını tüm öğelerden (yüz, bedensel, ve sesli-sözel ifadeler) elde edilecek bilgileri kullanarak belirleyin. (In both Transparent Box and Not Sharing episodes, note the presence of target emotional expression (sad/ angry-frustrated-contemptuous) using information from all modalities (facial, bodily and vocalizations-verbalizations).) Duyguların en yoğun ifadesi skalaları her iki epizodda da benzer şekilde kullanılır. Buna rağmen, paylaşmama epizodunda duygusal tepkileri kodlanmasına bazı değişiklikler eklenmiştir.

Sadece paylaşmama epizodunda uygulanan bu ek değişiklikler aşağıdaki gibidir:

Tüm üzüntü ve öfke/asabiyet/kurallara uymama ifadeleri hem sözel hem de bedensel ifadeler şeklinde kodlanırlar. **Sözel ifadeleri** üzgün veya öfkeli-asabi-kurallara uymayan bir duygusal tepki gösteriyorlarsa 1 şeklinde kodlayın, yoksa 0 şeklinde kodlayın. Eğer duygu ifadeleri **bedensel ifadelerse**, kodlamaya duygu ifadesinin işlevine dayanan önemli bir değişiklik eklenir. Bedensel ifadelerin ağırlıklı olarak iletışimsel işlevleri vardır (2 şeklinde kodlanır), veya iletışimsiz/ ifade edici (**non-communicative/ expressive**) işlevleri vardır (1 şeklinde kodlanır). 1 ve 2 kodları arasındaki fark çocuğun hedef ifadesi belirlediği andaki bakışlarının yönünü yansıtır. Örneğin, eğer Ç üzüntülü bir ifadeyle A'nın olduğu yöne doğru bakıyorsa ifadeyi 2 şeklinde kodlayın (iletışimsel); tersine eğer üzüntü ifadesi Ç kendi kağıdına/çizimine bakarken belirirse ifadeyi 1 şeklinde kodlayın (iletışimsiz/ ifade edici). Eğer Ç asabi/öfkeli bir ifadeyle A'nın olduğu yöne doğru bakıyorsa ifadeyi 2 şeklinde kodlayın (iletışimsel); tersine eğer asabiyet/öfke ifadesi Ç kendi kağıdına/çizimine bakarken belirirse ifadeyi 1 şeklinde kodlayın (iletışimsiz/ ifade edici).

Üzüntüye karşı öfke/asabiyet/kurallara uymamanın bedensel & yüz ifadeleri:

Üzüntü: Bükülmüş dudaklar, yanaklarda rengin solması, gevezelik (jaw); çökmüş/yıgılmış vücut, kambur/düşük omuzlar; öne eğilmiş bakış; teslim olmak/geri çekilmek (resignation).

Asabiyet/ öfke/ kurallara uymama: Kasılmış ağız/büzülmüş dudaklar; çatık kaşlar; A'ya odaklanmış-hedef almış "tehtid" bakışları; karşı çıkan/protesto eden sesleri çıkarma; kurallara uymamamanın simetrik olmayan ifadeleri (asymmetrical expressions of contempt).

Yoğunluk: 0 - ifade hiç belirmediyse

1- sadece kısa ve hafif yoğunluktaki ifadeler (genellikle duygu yüzün tek bir bölgesinde belirgindir ve vücutta görünmez, sesli ve sözel olarak kesinlikle görünmez)

2- hafif fakat sürekli veya kısa fakat güçlü ifadeler (ya birden fazla yüz bölgesinde aktif olarak belirir ya da iki öğede (yüz & vücut) aktif olarak belirgindir)

3- Orta ve sürekli veya sürekli ve güçlü ifadeler