The Association between Maternal Emotion Socialization, Child Temperament, and Emotion Understanding

by

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Abstract

Emotion understanding is an important part of social development in children. Research has shown that parent emotion socialization behaviours can affect the development of child emotion understanding. The goal of this study was to examine the interplay between behaviourally inhibited temperament (BI), and parent socialization behaviours in predicting emotion understanding in preschoolers. Ninety-one children were assessed for BI and emotion understanding using parent report and behavioural tasks. Observations of mother-child discussions were coded for parental emotion coaching and use of emotion words. Hierarchical regression analyses revealed that both BI and use of negative emotion words predicted child emotion understanding; however, an interaction between these predictor variables was not significant. BI and negative emotion words were uniquely predictive of social understanding for non-stereotypical but not stereotypical emotions. Finally, bivariate analyses revealed some notable gender differences in the associations amongst these variables. These results and their implications for future research are discussed.

Keywords: Behavioural Inhibition; Emotion Socialization; Emotion Coaching; Preschoolers; Emotion Understanding

For my family and friends

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Chapter 1.

Introduction

Emotion Socialization

Emotion socialization has been identified as an important experience in a child's development. Parents play a large role in teaching their children about emotions and their approach to emotion socialization may have implications for their child's socio-emotional competence, coping strategies, school behaviour and performance, and peer relations (Garner & Estep, 2001; Eisenberg, Cumberland, & Spinrad, 1998). Opportunities for emotion socialization can occur when a child witnesses another's emotions, when a child's own emotions are responded to, and when a child is taught about emotions (Denham, 2007; Root & Denham, 2010). According to Gottman, Katz, and Hooven (1996), there are two types of strategies that parents may use when socializing their children about emotions: coaching and dismissing. These two approaches reflect a meta-emotion philosophy (Gottman et al., 1996). In other words, coaching and dismissing describe how parents feel about their child's negative emotions and these two strategies, in turn, will influence the parent's behaviour. According to these researchers, when a parent is aware of the emotions their child displays, believes this display of emotion is an occasion for teaching, validates the emotion, helps their child label the emotion, and discusses coping strategies with their child, then the parent is using an emotion coaching strategy. On the other hand, a parent uses an emotion dismissing strategy when he or she sees negative emotions as harmful to their child, ignores or denies their child's negative emotions, and often sees these emotions as something to "get over" (Gottman et al., 1996).

Greater emotion coaching by parents has been found to be associated with greater child prosocial behaviour and social competence (Baker, Fenning, & Crnic, 2011; Hooven, Gottman, & Katz, 1995), less behavioural problems in preschoolers (Wilson,

Havighurst, & Harley, 2012), less emotionally driven externalizing behaviours in children with Autism Spectrum Disorder (Wilson, Berg, Zurawski, & King, 2013), and greater emotional competence (Denham & Kochanoff, 2002; Ramsden & Hubbard, 2002; Shortt, Stoolmiller, Smith-Shine, Eddy, & Sheeber, 2010). In contrast, emotion dismissing has been associated with an increase in behavioural problems (Lunkenheimer, Shields, & Cortina, 2007). Furthermore, when families exhibited both coaching and dismissing behaviours, the coaching of negative emotions was associated with a decrease in child internalizing problems, and less child emotional lability (Lunkenheimer et al., 2007). (For a full review on meta-emotion philosophy, coaching, and dismissing, please see Katz, Maliken, & Stettler, 2012). These studies demonstrate that negative emotion socialization is related to child adjustment and social outcomes. Although Gottman and colleagues originally studied emotion coaching and dismissing as a meta-emotion philosophy (i.e., thinking about emotions), these two strategies have also been studied as observable behaviours in a variety of studies, including the present study.

Emotion socialization has also been associated with children's emotion understanding. Emotion understanding is the child's ability to recognize and understand their own emotions as well as the emotions of others (Root & Denham, 2010). This skill is an aspect of emotional competence which describes a child's ability to not only understand emotions, but also a child's ability to regulate and express their own emotions proficiently (Root & Denham, 2010). In a study of preschool age children, researchers found that parental emotion socialization during semi-naturalistic tasks predicted emotion understanding (Denham, Zoller, & Couchoud, 1994). Specifically, maternal explanations of emotions (coaching), and responsiveness were significant predictors of emotion understanding. Furthermore, child age and cognitive ability also predicted emotion understanding. Older and more cognitively developed children performed better on emotion understanding tasks compared to both younger and less cognitively developed children. This pattern of results has also been replicated in other studies (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Denham & Kochanoff, 2002). In general, greater levels of teaching about emotions are associated with higher levels of emotion understanding.

Missing from the literature is consideration of the roles that individual differences such as child temperament might play in these relationships. When temperament is

included, researchers have tended to focus on more difficult temperaments and characteristics (e.g., aggression; Katz & Windecker-Nelson, 2004), or aspects of "normal" temperament (e.g., extroversion; Laible, 2004). Less attention has been paid to the temperamental quality of behavioural inhibition. Behavioural inhibition is an identified dimensions of temperament that influences children's experiences of distress in the presence of unfamiliar or novel stimuli. Parents who notice these behaviours in their children may take a different approach to socializing them, and as a result they may teach their children about emotions using alternative techniques. Behavioural inhibition has previously been linked to both parental socialization (Root & Stifter, 2010) and emotion understanding (Bernstein, 2009) separately, but to date, researchers have not examined the interplay among these important factors that may influence development. The present study addresses this gap by examining whether emotion coaching strategies interact with child temperament to predict emotion understanding. To begin, the key characteristics of behavioural inhibition are briefly described below.

Behavioural Inhibition

Behavioural inhibition is a temperamental style characterized by initial discomfort or avoidance in reaction to new situations, people, or objects (Degnan, Almas, & Fox, 2010; Kagan, Reznick, Clarke, Snidman, & Garcia-Coll, 1984). In his pioneering research, Kagan and colleagues (Kagan, Reznick, Snidman, Gibbons, & Johnson, 1988) categorized a sample of toddlers as inhibited or uninhibited. When re-assessed at five and a half years, the majority of the toddlers classified as inhibited remained withdrawn in novel social situations. The majority of toddlers initially classified as uninhibited presented as talkative and outgoing in social situations on follow up. These results demonstrate that although there is continuity in behavioural inhibition, not all inhibited toddlers remain inhibited in later years.

It is also possible that there is variability within children who are inhibited. One recent study reported individual differences in trajectories of social problem solving development in shy toddlers over time (Walker, Degnan, Fox, & Henderson, 2013). These results imply that not all shy or inhibited children will follow the same developmental pathways, and that there may be room for other influences. Other studies have found evidence for a link between behavioural inhibition and anxiety

disorders, where behavioural inhibition is seen as a vulnerability factor for the presence of future anxiety (Hirshfeld-Becker, Biederman, Henin, Faraone, Davis, Harrington et al., 2007; Rosenbaum, Biederman, Bolduc-Murphy, Faraone, Chaloff, Hirshfeld et al., 1993). In one sample, 28% of inhibited children were diagnosed with social phobia compared to 14% of uninhibited children (Hirshfeld-Becker et al., 2007). Taken together, the above findings suggest that behavioural inhibition is relatively stable, but the association between behavioural inhibition and future social problems is not absolute. This may be due to environmental influences such as child rearing or socialization practices. The interplay between behavioural inhibition and other factors may be associated with a variety of outcomes for children.

Parental overprotection and control are two examples of parenting practices that have been associated with poorer outcomes for behaviourally inhibited children. For example, researchers found that the relationship between shyness and maladjustment in kindergarten was moderated by over protective parenting (Coplan, Arbeau, & Armer, 2008). Specifically, shyness had a weaker association with maladjustment when mothers used more supportive parenting techniques compared to overprotective parenting techniques. Similarly, Rubin, Burgess, and Hastings (2002) found that maternal derision and intrusive control moderated the relationship between toddler inhibition and social reticence. In particular, toddler inhibition was associated with preschool social withdrawal only when mothers were high in derision and intrusive control. The results of these studies and others (Williams, Degnan, Perez-Edgar, Henderson, Rubin, Pine et al., 2009; Rubin, Hastings, Stewart, Henderson, & Chen, 1997; Hastings, Rubin, & DeRose, 2005) suggest that parenting interacts with behavioural inhibition in a manner that has implications for child outcomes. Recent research examining the role of psychological control and behavioural inhibition in emerging adulthood reveals similar findings (Abaied & Emond, 2013). Using a cross sectional design with college students, researchers found that maternal psychological control and temperament predicted poorer coping responses to stress. This finding implies that relationships between parenting style and temperament may persist into adulthood.

What has not been adequately studied is the association between behavioural inhibition and emotion socialization (coaching or dismissing) by parents. One recent

study examined the relationship between self reported parent emotion socialization strategies, social outcomes, and behavioural inhibition (Root & Stifter, 2010). These researchers found that for uninhibited children, higher supportive parenting led to increased cooperative group play at school, whereas lower levels of supportive parenting led to a decrease in cooperative group play. These results suggest that self-reported emotion socialization practices may influence the link between child temperament and social outcome. Another recent study found similar results and connected these findings with physiological reactions as well (Davis & Buss, 2012).

One possible reason that supportive parenting moderated the link between temperament and group play might be that supportive parenting leads to greater child socio-emotional understanding, which may then be related to cooperative group play (i.e., children may be better able to understand peer emotions). Only one study to date has examined the link between preschool behavioural inhibition and emotion understanding (Bernstein, 2009). In this study of 96 preschool age children, Bernstein (2009) found that children high in behavioural inhibition performed more poorly than non-inhibited children on tasks assessing emotion understanding when the children were asked to guess emotions that were different than their own reactions. The study utilized the methodology described by Denham (1986; described in detail below) in which researchers acted out situations with puppets. When the puppet responded to a situation differently than the child would in a similar situation, inhibited children were more likely to incorrectly guess the puppet's emotion. There were no differences found between inhibited and uninhibited children when the children were asked to guess emotions that would be the same as their own reactions. Since children often learn about emotions from their parents, Bernstein suggests that it is possible that these children are being socialized in a different manner, which may in turn lead to a different rate of understanding others' emotions.

Although no research has examined this relationship experimentally, studies in the anxiety literature may lend support to these proposed associations. Studies have found that parents of children with an anxiety disorder tend to use fewer emotion words with their children, and employ less explanatory or problem solving approaches when discussing emotional topics compared to parents of children without an anxiety disorder (Suveg, Zeman, Flannery-Schroeder, & Cassano, 2005; Suveg, Sood, Barmish, Tiwari,

Hudson, & Kendall, 2008). One interpretation of these findings is that a child diagnosis of anxiety may influence parental socialization of emotions (or vice versa). As behavioural inhibition is seen as a vulnerability factor in the development of anxiety, it is possible that parents of inhibited children may display similar behaviours. Based on previous research it may be inferred that the interaction between emotion socialization and behavioural inhibition may have implications for child emotion understanding. Child emotion understanding in turn has been associated with school behaviour and academic performance (Izard, Fine, Schultz, Mostow, Ackerman, & Youngstrom, 2001; Trentacosta & Izard, 2007). Thus, exploring the link between parent emotion socialization practices and behaviourally inhibited temperament in relation to emotion understanding may help researchers identify factors underlying the association between behavioural inhibition and later behavioural and academic issues in children. The present study utilized the same data as Bernstein (2009), and sought to examine whether parental emotion socialization practices were associated with both behavioural inhibition and emotion understanding.

Gender

Gender and Emotion Socialization

While some evidence for gender differences in emotion socialization for both children and parents exists in the literature, findings on this topic have been mixed. For example, one recent study found that parents of young preschoolers and toddlers used more internal state language with boys rather than girls (Roger, Rinaldi, & Howe, 2012); while previous research has found that parents used more emotion words with their preschool aged girls compared to boys (for example Fivush, Brotman, Buckner, & Goodman, 2000). Other research finds different patterns when differentiating between types of emotion socialization. Girls have been found to demonstrate more "submissive emotions" than boys, and that at the preschool age, fathers respond to this emotion type more so in girls than in boys (Chaplin, Cole, & Zahn-Waxler, 2005; see Root & Denham, 2010 for a review). Taken together it appears that gender does affect the manner in which parents socialize emotions in their children. The current study will expand on the existent literature by examining the role of temperament, specifically behavioural inhibition, in these relationships.

Gender and Behavioural Inhibition

Some research suggests that behavioural inhibition and temperamental shyness are also related to gender. For example, a meta analysis of over 200 studies from 1960 to 2002 found that in the dimension of surgency (in which approach behaviour and shyness were included), boys aged three months to thirteen years scored half of a standard deviation above girls. Although a small effect, these results demonstrate that boys tend to be rated as more extroverted or less inhibited than girls (Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006). Another study examined the factor structure of temperament in boys and girls and found no differences (Martin, Wisenbaker, Baker, & Huttenen, 1997). The mean differences in several temperamental dimensions, however, were different between the two genders. Specifically, these researchers found that girls scored higher on measures of distress to novelty than did boys (boys were again reported to be more extroverted). Taken together, it appears that temperamental qualities of behavioural inhibition and shyness may be more likely to be reported in girls compared to boys. Gender will therefore be included in the current study to determine its relationship with behavioural inhibition, emotion understanding, and emotion socialization.

The Current Study

The current study was designed to examine the relationship between behavioural inhibition and parental emotion socialization practices, and to determine whether the interaction between these two variables is associated with child emotion understanding.

Based on previous research, I predict that:

1. Emotion socialization will have a positive association with child emotion understanding;
2. Behavioural inhibition will have a negative association with child emotion understanding;
3. The association between behavioural inhibition and emotion understanding will be moderated by maternal emotion socialization
4. The impact of behavioural inhibition and emotion socialization on child emotion understanding may vary depending on child gender.

Chapter 2.

Method

Participants

This study is based on data previously collected for a doctoral thesis research study by Dagmar Bernstein (2009). Thus, the participant recruitment and study procedures reflect those used in the original research study. Participants were recruited through newspaper advertisements and brochures (see Appendix A). These advertisements specifically targeted parents of both shy and socially uninhibited preschool children. To be included in the study, both mother and child needed to be fluent in English, and the child needed to be between 40 to 54 months of age at the point of initial contact with the family. If mothers were not the child's biological parent, they must have lived with the child for at least two years. A total of 114 participant pairs (mother and child) were initially recruited. Of these, eleven cases were deleted due to English issues on the part of the parent or child, sibling interference during the laboratory visit, or had more than 30% of their discussion task unintelligible and as a result could not be coded or transcribed reliably. Five recruited families did not complete the experiment, three videos were not recorded correctly, and one half of two sets of twins were removed from the analyses to preserve the independence of the data. A further two cases were deleted from analysis as they were outliers and influenced the results of the study. (Explained below).

Ninety-one preschool age children and their mothers were included in the present analyses (*M* = 48.07 months, *SD* = 5.12 months, Range = 41-59 months). Forty-seven percent of the children were female (n = 43) and 53% were male (n = 48). Sixty-two percent of the mothers were Caucasian, 24% East Asian, and 14% identified with another or mixed ethnicity. The majority of the mothers had at least 2 years of post-secondary education (80%). Thirty-nine percent of mothers reported that they had a

Bachelor's degree, 33% reported a college diploma, 17% reported a high school diploma or less, 8% reported a graduate degree, and 3% did not select any of the above categories.

Procedure

All interested families were invited to a university laboratory to participate in this study. Upon their arrival, written consent was received from all mothers, and verbal assent was given by each child. Mothers completed questionnaires while their child played with toys and interacted with a researcher. After a short period of free play, the researcher led the child through a series of tasks designed to measure the child's level of behavioural inhibition (Behavioural Inhibition Observation Battery, described below). The child's receptive vocabulary was measured and the child and researcher participated in a task designed to assess the child's level of emotion understanding. Finally, the mother and child completed a task together where they discussed a series of three pictures depicting characters in an emotionally charged situation (Negative Emotion Discussion Task, described below). The entire one hour session was video recorded, and recordings were used by coders to rate both child and parent behaviour.

Materials/Measures

Behavioural Inhibition

Behavioural Inhibition Questionnaire

The Behavioural Inhibition Questionnaire (BIQ; Bishop, Spence, & Mcdonald, 2003) is a 30 item questionnaire completed by parents to assess their child's behaviour in three domains: social novelty; situational novelty; and activities with a risk of injury. Within these three domains, there are six factors: unfamiliar adults (e.g., "is very quiet aroud new (adult) guests to our home"); peers (e.g., "is shy when first meeting new children"); performing in front of others (e.g., is happy to perform in front of others"); separation and preschool (e.g., "gets upset being let in new situations for the first time"); unfamiliar situations in general (e.g., "seems nervous or uncomfortable in new situations"); and novel physical activities with minor risk of injury (e.g., "is hesitant to explore new play situations"). Parents rate their child's behaviour on a scale from 1

(hardly ever) to 7 (almost always). Thus, scores may range from 0 to 210. This measure has been shown to have good internal consistency (.72 ≤ α ≤ .95), and adequate test- retest reliability over one year (r = .74-.78; Bishop et al., 2003). Furthermore, the responses to the BIQ strongly converge (r = .86-.87) with the Behavioural Inhibition Subscale of the Temperament Assessment Battery for Children—Revised (Presley & Martin, 1994) which provides support for criterion related validity of the BIQ as a measure of behavioural inhibition.

Behavioural Inhibition Observation Battery

This observational battery included six activities that the children completed with the researcher. The child was asked to imitate the researcher, wear a blood pressure cuff, stand with his or her eyes closed, put objects in a stuffed pig, fill a glass with water and carry it, and paint whiskers on the researcher. The imitation, blood pressure, and closed eyes tasks have been used in other studies to measure behavioural inhibition (Biederman, Hirshfeld-Becker, Rosenbaum, Herot, Friedman, Snidman et al., 2001). The remaining tasks were created by Bernstein (2009) for her doctoral dissertation. The observation battery was pilot tested. Depending on the task, children were given scores by independent raters from 0 to 2 or 0 to 4 for each activity. Zero indicated no fear, whereas scores of two or four indicated extremely inhibited behaviour. The children were also given an overall rating of behavioural inhibition ranging from zero to four (0 = no fear 4 = greatly inhibited). Scores on this battery may range from 0 to 29. A description of the specific tasks and associated scoring systems is included in Appendix B.

Receptive Language

Peabody Picture Vocabulary Test-III

The Peabody Picture Vocabulary Test-III (PPVT-III; Dunn & Dunn, 1997) is a measure of receptive vocabulary that has been validated for use with individuals age 2.5 to 90. Verbal IQ scores are calculated for each individual. Responses demonstrate good internal consistency (α = .94) and good temporal consistency (r = .92) for the preschool age group (Dunn & Dunn, 1997). Responses to the PPVT-III are known to be

a valid measure of verbal IQ, and are correlated with other measures of verbal ability, such as the Wechsler Intelligence Scale for Children-III (Wechsler, 1991).

Emotion Understanding

Affective Perspective Taking Measure

The Affective Perspective Taking Measure (Denham, 1986) is a puppet task where the experimenter acts out a series of 18 scenarios with puppets and a child is asked how the puppet would feel in each scenario. If the child is correct, they are given two points, if they are incorrect, they receive zero points. If the child guesses an emotion of the same valence as the correct answer, but does not correctly identify the emotion (i.e. positive or negative), then they are given one point. Thus, the range of possible scores for this task is 0 – 36. The puppets are matched to the child's gender (Johnny for boys, and Nancy for girls) and child's hair colour.

This task consists of two different types of vignettes: stereotypical and non-stereotypical. Stereotypical vignettes are situations in which the responses of children are almost always the same. For example, the puppet may be given ice cream in the vignette; the common emotional response to ice cream is "happiness". Non-stereotypical vignettes, on the other hand, consist of situations where the responses are designed to be different from the child's own typical response. In this study, mothers were asked in a telephone interview before the lab session how their child would typically react in each vignette situation. For the non-stereotypical vignettes, the puppet in the lab task displayed an emotion that differed from the parent's report of the child's typical response in the same situation. For example, a puppet may be portrayed to encounter a dog. Since not all children like dogs, there are different reactions associated with this situation. If a mother reported that her child is happy when he or she sees a dog, then the puppet is shown to be afraid. The acceptable answer would be for the child to correctly identify the puppet's response even if it is inconsistent with their own reaction to a similar situation. Hence, this task was designed to measure the child's ability to identify emotions in others even when these are different than the child's own reaction.

Emotion Socialization

Negative Emotion Discussion Task

Five pictures used as stimuli in the Roberts Apperception Test for Children (Roberts & McArthur, 1982), were used in this study for the Negative Emotion Discussion task. This test is a clinical tool used to assess how children understand interpersonal and emotional situations. Pictures from this test were chosen specifically for their negative emotion content. During the task, the dyad discussed three pictures for two minutes each. Each picture consisted of a black and white line drawing. Two pictures were matched to child gender. The first showed a child sitting up in bed with a frightened look on his/her face, and the second picture showed a mother kneeling to comfort an upset child. One picture was not gender matched and this was a picture of a child holding her arms out in front of her as if to protect herself. Parent-child discussions about all the pictures were coded using the coding system described below.

The Family Communication Coding System

The Family Emotion Communication Coding System (Shields, Lunkenheimer, & Reed-Twiss, 2002) is an observational coding scheme that was used to code parent behaviour during the Negative Emotion Discussion Task. Specifically, the coding system recorded instances of parental coaching, dismissing, elaboration, confirmation, and use of emotion words and themes. Child displays of emotion about the task and attempts of a child to discontinue the task were also recorded. All discussions were transcribed, and the coding was done from a transcription.

Shields et al.'s (2009) coding system was adapted for the Negative Emotion Discussion Task described above. The adapted system described coaching as statements that may include teaching or guiding the child through problem solving or coping with an emotion, as well as understanding and validating the emotion (e.g., "how did you feel when we went on our vacation", "What emotion is this?"). Dismissing occurred when parents described someone's emotions as unimportant or wrong (e.g., "there is nothing to be worried about"). Elaborative questions or statements were defined as questions or statements that helped the child work through emotions but focused more on the event rather than the child or the emotion itself (e.g., "what was scary about the slide?"). Confirmation was defined as parent validation of a child's

emotions (e.g., “you are right, that was a sad time”). Emotion words spoken by both the child and parent were divided into positive emotion words and negative emotion words (e.g., scared and excited). Positive and negative emotion themes were coded when emotions were discussed without the use of a specific emotion word in that utterance. Lab task related emotions were defined as any feelings about the task (e.g., “this is boring”), and child discontinuation was a child’s attempt to disengage with the task (e.g., running off camera). Each time a parent displayed an instance of any of the above categories, it was noted along with the speaker and referent. Final scores were calculated by dividing the total instances of each variable by the total number of parental utterances in the conversation. Previous studies using this coding system have found high inter-rater reliability in scoring. For example, Lunkenheimer et al. (2007) reported intra-class correlation coefficients (ICCs) ranging from .86 to .94. The full coding system is available in Appendix C.

In the current study, reliability was achieved first by using participant data that needed to be excluded from the data set for a variety of reasons including incomplete data, sibling interference, and parent or child ESL status. Three coders and the experimenter coded the transcriptions separately and then reviewed their codes together until adequate reliability using Shrout and Fleiss’s (1979) guidelines was achieved (ICC (3,1; 2 way mixed effects model) > .8). The three trained coders then coded the data for subjects retained in the study and 20% of the transcriptions were double coded to test for overall reliability using ICC (2,1; two ways random effects model). ICC’s ranged from .67- .99 (Shrout & Fleiss, 1979).

Chapter 3.

Results

Preliminary Data Analysis and Diagnostics

Initial Inspection and Assumption Checking

Descriptive data for each of the variables were examined before analyses were conducted (mean, standard deviation, range, skewness, kurtosis, bivariate correlations). Normality was assessed for each predictor (IV) and outcome (DV) using q-q plots and skewness and kurtosis values. The Behavioural Inhibition total score, the Emotional Understanding score, and the Emotion Socialization scores were not normally distributed. The Behavioural Inhibition and Emotion Socialization variables were positively skewed and were corrected with a square root transformation. The Emotion Understanding scores were negatively skewed and were corrected with an inverse square root transformation. After the transformations of all the variables, the q-q plots showed straight or nearly straight lines and the skewness and kurtosis values fell in between plus or minus two times the standard error, implying normality. Analyses were run using both untransformed and transformed data. The results were found to differ and therefore transformed variables are reported for these analyses below.

Dependant and independent variables were also examined for outliers and multicollinearity. The Mahalanobis Distance cut off value of 25 (p = .01) and DFFITS (standardized difference in fit) cut off value of the absolute value of one were used to determine if any participant's scores in each of the independent and dependent variables were potential outliers (Stevens, 1984; Cohen, Cohen, West, & Aiken, 2003). Two cases were deleted due to large Mahalanobis distances (>30) coupled with DFFITS values greater than one. These values implied significant influence over the regression coefficients and were therefore deleted from the data set. Multicollinearity was assessed

through Variance Inflation Factor (VIF) and tolerance values. Multicollinearity was only deemed a problem if VIF values were greater than 10 and tolerance values were less than .1 (Cohen et al., 2003). Furthermore, to decrease the chance of non essential multicollinearity, all variables were centred before creating interaction variables. In the current study, no multicollinearity was observed.

The correct form of the relationship (i.e., that the IVs and DVs were linearly related) was assessed by creating a series of scatter plots of all the IVs and DVs. All scatter plots presented as cloudlike structures and loess fit lines did not indicate non linearity. Measurement errors were kept to a minimum by only using those variables with ICCs and alphas that were adequate for research. Homoscedasticity of the residuals was assessed for all IVs and the Levene's Test was used. All Levene's Test comparisons were significant implying heteroscedasticity. Guidelines by Cohen et al. (2003) were used to determine if this was problematic. Independent variable responses were first sorted from lowest to highest and divided into several splices based on this grouping. Variance was then calculated for each splice and the highest variance was divided by the lowest variance. If this ratio was greater than 10, the heteroscedasticity was deemed problematic. For all comparisons and ratios, this ratio was greater than 10. Transformed variables were then checked for heteroscedasticity. Levene's Tests were non-significant and scatter plots were cloudlike implying homoscedasticity. Given that the transformed variables were normal and homoscedastistic, they were used in all analyses and are reported below. Finally, when checking the normality of the residuals, q-q plots were constructed and these demonstrated straight or almost straight lines implying that the residuals were normal.

Determining Control Variables and Confounds

To determine whether age, gender, and language ability needed to be entered as covariates, correlations between these and all other variables were examined. Each gender was examined separately to determine if there were any significant differences. Age was significantly and positively correlated with the Affective Perspective Taking Measure and Negative Emotion Words. Language ability (PPVT-III) was positively and significantly associated with Coaching and the Affective Perspective Taking Measure. When the sample was split by gender and correlations were examined, there were some

differences between girls and boys (described below). Therefore, gender, age, and language were controlled for in the regression analyses to follow.

Missing Data

Twelve cases were missing one item on the questionnaires. Because this was a relatively low number, mean individual scores for those scales were used so that these cases could be used in the analysis.

Primary Analyses

Both correlation and regression analyses were used to answer the primary research questions. Correlation analyses were used to examine relationships between variables, and regression analyses provided a predictive model where it was possible to determine whether behavioural inhibition and emotion socialization predicted emotion understanding above and beyond the control variables. Correlations were examined for the full data set and separately for each gender. Variables included in the analyses were all independent variables, dependant variables, age, and language abilities.

The hierarchical regression model was as follows: age, gender, and receptive language abilities were entered at the first step as control variables. Coaching was entered at the second step, Behavioural Inhibition was entered at the third step, and the interaction between Coaching and Behavioural Inhibition was entered at the final step. Three regression equations were created with Total Emotion Understanding score, Stereotypical Emotion Understanding score and Non-Stereotypical Understanding score as dependant variables. To explore whether emotion words also predicted Emotion Understanding variables, the above regression analyses were replicated while replacing Coaching with either Positive Emotion Words or Negative Emotion Words. In total, nine regression models were analyzed.

Descriptive Results

Behavioural Inhibition

The two behavioural inhibition measures were combined to create one score. The mean of the BIQ was 94.34 (SD = 33.96; range = 35-172). The alpha of all items was .959. The mean of the Observation Battery was 7.72 (SD = 4.68; range = 0-20). The internal consistency was adequate (alpha = .74). Together, the combined internal consistency of these two measures was .84 and therefore the two measures were combined to create one score of behavioural inhibition. Each score on the BIQ was divided by seven so that it would have equal weight with the Observation Battery when combined. This variable was positively skewed therefore a square root transformation was applied to the combined score. The transformation was used in subsequent analyses. The mean of the transformed combined Behavioural Inhibition Score was 4.49 (SD = .84; range = 2.88 - 6.43).

Emotion Socialization

Five scores from the Adapted Family Emotion Coding System were reliably coded: coaching, elaborative statements, elaborative questions, positive emotion words, and negative emotion words. There were no instances of task related emotional reactions, negative emotion themes, positive emotion themes, and almost no instances of parental dismissing; therefore, these variables were not included in analyses. Child discontinuation during the task was not coded reliably, possibly due to high variability in how this might have presented and not enough coverage of these possibilities in training. Each coded score included for analysis was divided by the total number of parental utterances in the parent-child interaction to create a proportion score. The mean, standard deviation, and range of each is provided in Table 1.

Elaborative questions and statements were included initially to assess whether they contributed to and were associated with coaching. In the current sample, these two variables did not correlate with coaching or each other. Given that they were not a primary or necessary focus of the investigation, they were consequently dropped from the analysis. The remaining three scores were correlated and had an alpha of .58.

Given that this does not meet a pre-determined threshold of alpha = .60, the scores were not combined. All of these scores will be examined separately in subsequent analyses.

All socialization variables were positively skewed therefore a square root transformation was applied to the variables to create a normally distributed variable. These scores are reported in Table 1.

Table 1. Descriptive Data for the Emotion Socialization Variables

Variable	Mean	Standard Deviation	Range
Coaching	.28	.16	0 - .59
Positive Emotion Words	.38	.14	0 - .82
Negative Emotion Words	.43	.17	0 - .88

Receptive Language

The PPVT-III was used as a measure of receptive language ability (M = 108.19, SD = 13.16; range = 76 – 140).

Emotion Understanding

Two scores measured emotion understanding: Stereotypical Affective Perspective Taking, and Non-Stereotypical Affective Perspective Taking. The means, standard deviations, and ranges of these variables are presented in Table 2. Given the goals of the study, these scores were entered into regression analyses separately and combined as one score reflecting Emotion Understanding (alpha = .78). All three variables were initially negatively skewed and therefore negative square root transformations were applied to normalize the variables. It is the descriptive statistics of the transformed variables that are reported in Table 2.

Table 2. Descriptive Statistics for Emotion Understanding

Variable	Mean	Standard Deviation	Range
Stereotypical	2.63	.64	1.00 – 3.32
Non-Stereotypical	2.81	.58	1.29 – 3.61
Total	3.22	.86	1.11 – 4.47

Correlation Analyses

Full Sample

Bivariate correlations were conducted to examine relationships between all variables. Please see Table 3 for all correlations. Age was positively correlated with Stereotypical Affective Perspective Taking ($r = .460$, $p < .01$), Non-Stereotypical Affective Perspective Taking ($r = .427$, $p < .01$), Total Affective Perspective Taking ($r = .494$, $p < .01$) and Negative Emotion Words ($r = .314$, $p < .01$). The PPVT-III was positively associated with Stereotypical Affective Perspective Taking ($r = .248$, $p = .02$), Non-Stereotypical Affective Perspective Taking ($r = .217$, $p = .04$), Total Affective Perspective Taking ($r = .245$, $p = .02$), and Coaching ($r = .207$, $p = .05$). These results imply that as age and PPVT-III scores increase, so does parental Coaching, and child Affective Perspective Taking.

Behavioural Inhibition showed a negative correlation with Total Affective Perspective Taking ($r = -.221$, $p = .04$), and Non-Stereotypical Affective Perspective Taking ($r = -.228$, $p = .03$). In addition, Behavioural Inhibition was negatively correlated with Stereotypical Affective Perspective Taking, but did not reach significance ($r = -.182$, $p = .08$). These results suggest that in general, as children become less inhibited they display higher levels of Affective Perspective Taking.

In addition to being associated with PPVT-III scores, Coaching was also positively correlated with Positive Emotion Words ($r = .309$, $p <.01$) and Negative Emotion Words ($r = .348$, $p < .01$). This means that the more a parent coached, the more they were likely to use emotion words.

Negative Emotion Words were also positively correlated with Stereotypical Affective Perspective Taking ($r = .292$, $p < .01$), Non-Stereotypical Affective Perspective Taking ($r = .311$, $p < .01$), Total Affective Perspective Taking ($r = .337$, $p < .01$), and Positive Emotion Words ($r = .257$, $p =.01$). These positive associations indicate a link between Affective Perspective Taking and parental Emotion Socialization.

Finally, all three Affective Perspective Taking Measures were strongly and positively correlated with one another. Total Affective Perspective Taking was correlated

with both Stereotypical (r = .903, p < .01) and Non-Stereotypical (r = .902, p < .01) variables. Stereotypical and Non-Stereotypical scores, however, were correlated to a lesser extent (r = .635, p < .01). These scores provide evidence that they are similar; however, the Non-Stereotypical and Stereotypical response patterns may not be as closely related.

Table 3. Bivariate Correlations of the Full Sample

	AGE	PPVT	BI	ST	NST	TOT	COACH	PEW	NEW
Age	1.00								
PPVT	.091	1.00							
BI	-.008	-.137	1.00						
ST	.460**	.248*	-.182†	1.00					
NST	.427**	.217*	-.228*	.635**	1.00				
TOT	.494**	.245*	-.221*	.903**	.902**	1.00			
COACH	.096	.207*	-.016	.118	.008	.076	1.00		
PEW	-.001	.128	.114	.111	-.109	.005	.309**	1.00	
NEW	.314**	.070	.050	.292**	.311**	.337**	.348**	.257*	1.00

Note. n = 91 † p<.1; * p<.05; ** p <.01; PPVT = Peabody Picture Vocabulary Test – IV; BI = Behavioural Inhibition; ST = Stereotypical Affective Perspective Taking; NST = Non Stereotypical Affective Perspective Taking; TOT = Total Affective Perspective Taking; COACH = Coaching; PEW = Positive Emotion Words; NEW = Negative Emotion Words

Correlations by Gender

All measures were also examined by gender to detect any differences in relationships between the genders.

Boys

For boys, age was positively associated with Stereotypical Affective Perspective Taking (r = .361, p = .01), Non-Stereotypical Affective Perspective Taking (r = .445, p < .01) and Total Affective Perspective Taking (r = .446, p < .01). Age was also positively associated for Negative Emotion Words but did not reach significance (r = .243, p < .1). PPVT-III scores were associated with Coaching at a non significant level (r = .261, p = .07). These correlations imply that both increasing age and language abilities are associated with greater Affective Perspective Taking and Emotion Socialization.

Behavioural Inhibition did not correlate with any variables; however, there were marginal negative associations with both Non-Stereotypical ($r = -.241$, $p < .1$) and Total Affective Perspective taking ($r = -.243$, $p < .1$). The results suggest that if boys in the current sample were more inhibited they were more likely to have lower Affective Perspective Taking scores

Negative Emotion Words were positively correlated with Non-Stereotypical Affective Perspective Taking ($r = .376$, $p < .01$), and Total Affective Perspective Taking ($r = .319$, $p = .02$). There were also positive associations with both Coaching ($r = .276$) and Positive Emotion Words ($r = .270$) that did not reach significance ($p < .1$). These correlations suggest that Emotion Socialization is associated with Affective Perspective Taking.

All three Affective Perspective Taking Scores were positively associated with one another. Total Affective Perspective Taking had a large and positive association with both Stereotypical Affective Perspective Taking ($r = .897$, $p < .01$), and Non-Stereotypical Affective Perspective Taking ($r = .912$, $p < .01$). The magnitude of the positive correlation between Stereotypical and Non-Stereotypical sores was not as large ($r = .643$, $p < .01$). Please see Table 4 for the full correlations.

Girls

For girls, age was positively associated with Stereotypical Affective Perspective Taking ($r = .567$, $p < .01$), Non-Stereotypical Affective Perspective Taking ($r = .392$,$p < .01$), Total Affective Perspective Taking ($r = .538$, $p < .01$), and Negative Emotion Words ($r = .418$, $p < .01$). PPVT-III scores were also positively associated with Stereotypical Affective Perspective Taking ($r = .300$), Total Affective Perspective Taking ($r = .259$) and Negative Emotion Words ($r = .286$), but these correlations did not reach significance ($p < .1$). As with boys, these correlations suggest an increase in age and language is associated with increases in Emotion Socialization and Affective Perspective Taking.

Coaching was associated with both Stereotypical Affective Perspective Taking ($r = .366$, $p = .02$) and Total Affective Perspective Taking ($r = .317$, $p = .04$). It was also associated with Positive Emotion Words ($r = .430$, $p < .01$) and Negative Emotion Words ($r = .466$, $p < .01$). Negative Emotion Words was also associated with both Stereotypical

(r = .419, p < .01) and Total Affective Perspective Taking (r = .366, p = .02). These results suggest that there may be an association between Emotion Socialization and Emotion Understanding.

All three Affective Perspective Taking Tasks were again, correlated with one another. Total Scores correlated positively and strongly with Stereotypical (r = .910, p < .01) and Non-Stereotypical (r = .892, p < .01) scores. The correlation between Stereotypical and Non-Stereotypical scores was also positive (r = .629, p < .01). Please see Table 4 for a full list of correlations.

Table 4. Bivariate Correlations Split by Gender

	AGE	PPVT	BI	ST	NST	TOT	COACH	PEW	NEW
Age		**.112**	.004	**.567****	**.392****	**.538****	**.190**	**-.055**	**.418****
PPVT	.057		-.094	**.300†**	**.195**	**.259†**	**.155**	**.230**	**.286†**
BI	-.020	-.191		**-.143**	**-.218**	**-.200**	**-.049**	**.185**	**.109**
ST	.361*	.183	-.223		**.629****	**.910****	**.366***	**.025**	**.419****
NST	.445**	.236	-.241†	.643**		**.892****	**.174**	**-.229**	**.235**
TOT	.446**	.225	-.243†	.897**	.912**		**.317***	**-.094**	**.366***
COACH	.011	.261†	.008	-.081	-.137	-.124		**.430****	**.466****
PEW	.041	.007	.105	.195	.000	.100	.220		**.243**
NEW	.243	-.137	.004	.192	.376**	.319*	.276†	.270†	

Note. Correlations for girls are bolded on top, correlations for boys are on bottom; boys n = 48; girls n = 43; † p<.1; * p<.05; ** p <.01; PPVT = Receptive Language; BI = Behavioural Inhibition; ST = Stereotypical Affective Perspective Taking; NS = Non Stereotypical Affective Perspective Taking; TOT = Total Affective Perspective Taking; COACH = Coaching; PEW = Positive Emotion Words; NEW = Negative Emotion Words

Regression Analyses

Hierarchical multiple regression analyses were used for the primary analyses. At the first step, age, gender, and PPVT-III scores were added into the regression equation. At step two, Coaching was entered into the regression equation. Behavioural Inhibition was entered into the regression equation at step three, and the interaction between Behavioural Inhibition and Coaching was added at step four. This model was analyzed three times with three outcome variables: Total Emotion Understanding, Stereotypical Emotion Understanding, and Non-Stereotypical Emotion Understanding as measured by the Affective Perspective Taking Measure. Because Negative Emotion Words and

Positive Emotion Words scores were not combined with Coaching scores, the regression analyses were repeated with each of these variables in the place of Coaching for a combined total of nine regression models.

Predicting Total Emotion Understanding

Coaching and Behavioural Inhibition

In predicting Total Emotion Understanding, all regression steps were significant (see Table 5 for full results). At step 1, age, gender, and PPVT-III score accounted for 28.4% of Total Emotion Understanding (R^2 change = .284, F change = 11.552, $p < .001$). The addition of Coaching at step 2 did not account for any additional variance. At step 3, Behavioural Inhibition was added to the regression model and this addition significantly accounted for an additional 3.7% of the variance (R^2 change = .037, F change = 4.573, $p = .035$). The addition of the interaction between Coaching and Behavioural inhibition at step 4, however, did not account for any additional variance in Total Emotion Understanding.

Table 5. Hierarchical Multiple Regression Using Coaching and Behavioural Inhibition to Predict Total Emotion Understanding

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 1		.260	.284	<.001
Constant				
Age	.475			
Gender	.001			
PPVT-III	.202			
Step 2		.251	.000	.894
Constant				
Age	.476			
Gender	.001			
PPVT-III	.205			
Coaching	-.013			

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 3		.281	.037	.035
Constant				
Age	.477			
Gender	.003			
PPVT-III	.178			
Coaching	-.010			
BI	-.193			
Step 4		.277	.004	.456
Constant				
Age	.471			
Gender	.002			
PPVT-III	.170			
Coaching	-.012			
BI	-.199			
Interaction	-.068			

Note: BI = Behavioural Inhibition; Interaction = BI x Coaching; PPVT-III = receptive vocabulary

Negative Emotion Words and Behavioural Inhibition

Again, all steps were significant and Table 6 contains the full results. At step 1 age, gender, and PPVT-III scores accounted for 28.4% of the variance (R^2 change = .284, F change = 11.552, p <.001). The addition of Negative Emotion Words at step 2 resulted in an additional 3.4% explained (R^2 change = .034, F change = 4.237, p = .043). At step 3, the addition of Behavioural Inhibition into the regression equation predicted Total Emotion Understanding above and beyond age, gender, language and Negative Emotion Words (R^2 change = .041, F change = 5.470, p = .022). Negative Emotion Words was also still significant. This step of the regression equation accounted for an additional 4.1% of the variance. The addition of an interaction between Coaching and Behavioural Inhibition did not account for any additional variance in the regression equation.

Table 6. ***Hierarchical Multiple Regression Using Negative Emotion Words and Behavioural Inhibition to Predict Total Emotion Understanding***

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 1		.260	.284	<.001
Constant				
Age	.475			
Gender	.001			
PPVT-III	.202			
Step 2		.286	.034	.043
Constant				
Age	.414			
Gender	.007			
PPVT-III	.194			
NEW	.193			
Step 3		.321	.041	.022
Constant				
Age	.411			
Gender	.009			
PPVT-III	.165			
NEW	.207			
BI	-.205			
Step 4		.316	.003	.546
Constant				
Age	.411			
Gender	.005			
PPVT-III	.173			
NEW	.204			
BI	-.214			
Interaction	.055			

Note: NEW = Negative Emotion Words; BI = Behavioural Inhibition; Interaction = BI x NEW, PPVT-III = receptive vocabulary

Positive Emotion Words and Behavioural Inhibition

When using Positive Emotion Words to predict Total Emotion Understanding, all regression steps were significant; however the addition of Positive Emotion Words into

the regression model did not account for any additional variance. At step 1, age, gender, and PPVT-III significantly predicted Total Emotion Understanding. Together, the variables entered first accounted for 28.4% of the variance in Total Emotion Understanding. (R^2 change = .284, F change = 11.522, p <.001). At step 2, Positive Emotion Words were added to the model and it did not predict Total Understanding above and beyond the initial variables. At step 3, the addition of Behavioural Inhibition predicted Total Emotion Understanding above and beyond the first two steps (R^2 change = .035, F change = 4.441, p = .038). Together, the variables at this step accounted for an additional 3.5% of the variance. At step 4, the addition of an interaction variable between Positive Emotion Words and Behavioural Inhibition did not predict Total Emotion Understanding above and beyond the previous step. Table 7 contains the full regression results.

Table 7. Hierarchical Multiple Regression Using Positive Emotion Words and Behavioural Inhibition to Predict Total Emotion Understanding

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 1		.260	.284	<.001
Constant				
Age	.475			
Gender	.001			
PPVT-III	.202			
Step 2		.251	.000	.825
Constant				
Age	.475			
Gender	.001			
PPVT-III	.205			
PEW	-.020			
Step 3		.281	.036	.036
Constant				
Age	.476			
Gender	.002			
PPVT-III	.174			
PEW	.012			
BI	-.195			

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 4		.274	.002	.637
Constant				
Age	.475			
Gender	.000			
PPVT-III	.176			
PEW	.008			
BI	-.202			
Interaction	.044			

Note: PEW = Positive Emotion Words; BI = Behavioural Inhibition; Interaction = BI x PEW; PPVT-III = Receptive Vocabulary

Summary

In predicting Total Emotion Understanding, age, gender, and PPVT-III scores accounted for 28% of the variance. In addition, Negative Emotion Words explained an additional 3% of the variance. Behavioural Inhibition explained an additional 3-4% of variance in Total Emotion Understanding above and beyond the three control variables and the three socialization variables. Coaching and Positive Emotion Words did not contribute to the prediction of Total Emotion Understanding. Furthermore, the addition of an interaction between socialization variables and Behavioural Inhibition did not account for any additional variance. In total, these models accounted for 35% of the variance in Total Emotion Understanding.

Predicting Stereotypical Emotion Understanding

Coaching and Behavioural Inhibition

In predicting Stereotypical Emotion Understanding, all regression steps were significant. At step 1, age, gender, and PPVT-III score accounted for 25.6% of Stereotypical Emotion Understanding (R^2 change = .256, F change = 9.985, $p < .001$). The addition of Coaching into the regression model did not account for any additional variance above and beyond step 1 (R^2 change = .001, F change = .152, $p = .698$). At step 3, Behavioural Inhibition was added to the regression model and this addition did not significantly account for any variance (R^2 change = .023, F change = 2.727, $p = .102$). The addition of the interaction between Coaching and Behavioural Inhibition at

step 4, also did not account for any additional variance in Stereotypical Emotion Understanding. Table 8 contains the full regression results.

Table 8. Hierarchical Multiple Regression Using Coaching and Behavioural Inhibition to Predict Stereotypical Emotion Understanding

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 1		.230	.256	<.001
Constant				
Age	.446			
Gender	-.040			
PPVT-III	.210			
Step 2		.223	.001	.698
Constant				
Age	.444			
Gender	-.042			
PPVT-III	.202			
Coaching	.037			
Step 3		.238	.023	.102
Constant				
Age	.444			
Gender	-.041			
PPVT-III	.181			
Coaching	.039			
BI	-.153			
Step 4		.234	.004	.477
Constant				
Age	.438			
Gender	-.042			
PPVT-III	.174			
Coaching	.037			
BI	-.159			
Interaction	-.067			

Note: BI = Behavioural Inhibition; Interaction = BI x Coaching; PPVT-III = Receptive Vocabulary

Negative Emotion Words and Behavioural Inhibition

In predicting Stereotypical Emotion Understanding, all steps were significant. At step 1, age, gender, and PPVT-III scores accounted for 25.6% of the variance (R^2

change = .256, F change = 9.985, p <.001). At step 2, the addition of Negative Emotion Words did not account for any additional variance in the regression equation. At step 3, however, the addition of Behavioural Inhibition into the regression model accounted for an additional 2.6% of the variance that was trending toward significance (R^2 change = .026, F change = 3.154, p = .079). Both Negative Emotion Words and Behavioural Inhibition were now trending significance. This finding implies a suppression effect; only after removing the variance associated with Behavioural Inhibition was a potential effect of Negative Emotion Words evident given it's small effect size. Please see Table 9 for the complete results of this regression analysis.

Table 9. ***Hierarchical Multiple Regression Using Negative Emotion Words and Behavioural Inhibition to Predict Stereotypical Emotion Understanding***

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 1		.230	.256	<.001
Constant				
Age	.446			
Gender	-.040			
PPVT-III	.210			
Step 2		.243	.021	.118
Constant				
Age	.398			
Gender	-.035			
PPVT-III	.203			
NEW	.153			
Step 3		.262	.026	.079
Constant				
Age	.395			
Gender	-.033			
PPVT-III	.180			
NEW	.163			
BI	-.163			

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 4		.253	.000	.929
Constant				
Age	.395			
Gender	-.033			
PPVT-III	.181			
NEW	.163			
BI	-.164			
Interaction	.008			

Note: NEW = Negative Emotion Words; BI = Behavioural Inhibition; Interaction = BI x NEW, PPVT-III = Receptive Vocabulary

Positive Emotion Words and Behavioural Inhibition

In predicting Stereotypical Emotion Understanding, all steps were significant (see Table 10 for full results). At step one 1, age, gender, and PPVT-III scores accounted for 25.6% of the variance (R^2 change = .256, F change = 9.985, p <.001). Although all remaining models were significant on their own, there was no increase in R^2 change, implying that the addition of Positive Emotion Words or Behavioural Understanding did not add to the prediction of Stereotypical Emotion Understanding. At step 3, Behavioural Inhibition did marginally predict Stereotypical Emotion Understanding above and beyond the previous steps (R change = .028, p change = .069). The addition of the interaction between Positive Emotion Words and Behavioural Inhibition at step 4 did not account for any significant variance in Stereotypical Emotion Understanding.

Table 10. Hierarchical Multiple Regression Using Positive Emotion Words and Behavioural Inhibition to Predict Stereotypical Emotion Understanding

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 1		.230	.256	<.001
Constant				
Age	.446			
Gender	-.040			
PPVT-III	.210			

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 2		.229	.007	.356
Constant				
Age	.447			
Gender	-.041			
PPVT-III	.198			
PEW	.087			
Step 3		.250	.028	.069
Constant				
Age	.448			
Gender	-.040			
PPVT-III	.171			
PEW	.115			
BI	-.172			
Step 4		.242	.001	.801
Constant				
Age	.448			
Gender	-.041			
PPVT-III	.173			
PEW	.113			
BI	-.175			
Interaction	.024			

Note: NEW = Negative Emotion Words; BI = Behavioural Inhibition; Interaction = BI x NEW, PPVT-III = receptive vocabulary

Summary

Age, gender, and PPVT-III scores accounted for 25.6% of the variance in Stereotypical Emotion Understanding. Negative Emotion Words and Behavioural Inhibition were associated with Stereotypical Emotion Understanding, but these associations did not reach significance. Coaching and Positive Emotion Words did not account for any variance above and beyond the control variables in Stereotypical Emotion Understanding, and neither did the interaction between Behavioural Inhibition and any of the socialization variables.

Predicting Non Stereotypical Emotion Understanding

Coaching and Behavioural Inhibition

In predicting Non-Stereotypical Emotion Understanding, all regression steps were significant. At step 1, age, gender, and PPVT-III score accounted for 21.6% of Non-Stereotypical Emotion Understanding (R^2 change = .216, F change = 7.996, $p < .001$). The addition of Coaching, at step 2, did not account for any additional variance above and beyond step 1. At step 3, Behavioural Inhibition was added to the regression model and this addition significantly accounted for an additional 4.1% of the variance (R^2 change = .041, $p = .033$). The addition of the interaction between Coaching and Behavioural Inhibition at step 4, however, did not account for any additional variance in Non-Stereotypical Emotion Understanding. The full results of this regression analysis are presented in Table 11.

Table 11. Hierarchical Multiple Regression Using Coaching and Behavioural Inhibition to Predict Non-Stereotypical Emotion Understanding

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 1		.189	.216	<.001
Constant				
Age	.405			
Gender	.043			
PPVT-III	.177			
Step 2		.185	.005	.441
Constant				
Age	.411			
Gender	.048			
PPVT-III	.192			
Coaching	-.076			
Step 3		.219	.041	.033
Constant				
Age	.411			
Gender	.050			
PPVT-III	.164			
Coaching	-.073			
BI	-.204			

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 4		.212	.003	.586
Constant				
Age	.406			
Gender	.050			
PPVT-III	.159			
Coaching	-.075			
BI	-.208			
Interaction	-.052			

Note: BI = Behavioural Inhibition; Interaction = BI x Coaching; PPVT-III = receptive vocabulary

Negative Emotion Words and Behavioural Inhibition

In predicting Non-Stereotypical Emotion Understanding, all steps were significant. The full results are presented in Table 12. At step 1, age, gender, and PPVT-III scores accounted for 21.6% of the variance (R^2 change = .216, F change = 7.996, p <.001). The addition of Negative Emotion Words at step 2 accounted for another 3.2% of the variance, although this did not reach significance (R^2 change = .032, F change = 3.694, p = .058). At step 3, the addition of Behavioural Inhibition resulted in a significant change in R^2 (R^2 change = .046, F change = 5.520, p = .021). This step of the regression equation accounted for an additional 4.6% of the variance. The addition of an interaction between Negative Emotion Words and Behavioural Inhibition at step 4 did not account for any additional variance of Non-Stereotypical Emotion Understanding.

Table 12. Hierarchical Multiple Regression Using Negative Emotion Words and Behavioural Inhibition to Predict Non-Stereotypical Emotion Understanding

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 1		.189	.216	<.001
Constant				
Age	.405			
Gender	.043			
PPVT-III	.177			

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 2		.213	.032	.058
Constant				
Age	.346			
Gender	.049			
PPVT-III	.169			
NEW	.190			
Step 3		.253	.046	.021
Constant				
Age	.342			
Gender	.052			
PPVT-III	.139			
NEW	.204			
BI	-.217			
Step 4		.251	.007	.365
Constant				
Age	.342			
Gender	.046			
PPVT-III	.152			
NEW	.199			
BI	-.231			
Interaction	.086			

Note: NEW = Negative Emotion Words; BI = Behavioural Inhibition; Interaction = BI x NEW, PPVT-III = receptive vocabulary

Positive Emotion Words and Behavioural Inhibition

Again, all regression models were significant; however, the addition of Positive Emotion Words into the regression model did not account for any additional variance. At step 1, age and PPVT-III significantly predicted Non-Stereotypical Emotion Understanding. The variables entered first accounted for 21.6% of the variance in Non-Stereotypical Emotion Understanding. (R^2 change = .216, F change = 7.996, p <.001). At step 2, Positive Emotion Words were added to the model but it did not predict Emotion Understanding above and beyond the initial variables. (R^2 change = .018, F change = 2.004, p = .161). At step 3, the addition of Behavioural Inhibition predicted Non-Stereotypical Emotion Understanding marginally above and beyond the first two steps (R^2 change = .035, F change = 4.441, p = .052). At step 4, the addition of an

interaction variable between Positive Emotion Words and Behavioural Inhibition did not predict Non-Stereotypical Emotion Understanding above and beyond the previous step. The full results of this regression analysis are presented in Table 13.

Table 13. Hierarchical Multiple Regression Using Positive Emotion Words and Behavioural Inhibition to Predict Non-Stereotypical Emotion Understanding

	Beta	Adjusted R^2	R^2 change	Change p-value
Step 1		.189	.216	<.001
Constant				
Age	.405			
Gender	.043			
PPVT-III	.177			
Step 2		.198	.018	.161
Constant				
Age	.403			
Gender	.045			
PPVT-III	.195			
PEW	-.135			
Step 3		.224	.033	.052
Constant				
Age	.404			
Gender	.047			
PPVT-III	.165			
PEW	-.104			
BI	-.187			
Step 4		.219	.004	.515
Constant				
Age	.402			
Gender	.043			
PPVT-III	.169			
PEW	-.110			
BI	-.197			
Interaction	.062			

Note: PEW = Positive Emotion Words; BI = Behavioural Inhibition; Interaction = BI x PEW, PPVT-III = receptive vocabulary

Summary

Age, gender, and PPVT-III scores accounted for 21.6% of the variance in Non-Stereotypical Emotion Understanding. Negative Emotion Words accounted for another 3% of variance in Non-Stereotypical Emotion Understanding (marginally, $p = .052$). Behavioural Inhibition explained 3-4% of the variance in Non-Stereotypical Understanding above. This was above and beyond the three control variables, and the three socialization variables. The interaction between Behavioural Inhibition and the socialization variables, however, was not significant.

Chapter 4.

Discussion

The current study found that the use of negative emotion words by parents, and child behavioural inhibition both separately predicted emotion understanding after controlling for age, gender, and language. These findings were consistent with predictions. When mothers used more negative emotion words, their children tended to be more successful on the emotion understanding task. When children were more behaviourally inhibited, they tended to be less successful on the emotion understanding task. Specifically, these two variables were consistently significant in predicting performance on the non-stereotypical emotion understanding tasks. Behavioural inhibition also predicted emotion understanding above and beyond negative emotion words. Contrary to expectations, the predicted interactions between behavioural inhibition and the three emotion socialization variables were not significant in any model. Coaching and positive emotion words did not strongly predict any form of emotion understanding. This lack of association was inconsistent with predictions for coaching. Bivariate correlations also gave some evidence of different relationships between boys and girls, suggesting that there was a greater association between coaching and emotion understanding for girls compared to boys. This was also consistent with predictions. The implications of these results are explained below.

Emotion Words

In this study, relationships between parents' use of emotion words and child emotion understanding were demonstrated through bivariate correlations and regression analyses. Positive emotion words were not correlated with emotion understanding, nor did they explain any variance in the regression models. For the full sample, negative emotion words were positively associated with total, non-stereotypical, and stereotypical emotion understanding. Regression models revealed that maternal use of negative

emotion words predicted emotion understanding above and beyond age and language abilities. When predicting stereotypical emotion understanding, however, this result was only of trending significance. It is important to note that for every model, when behavioural inhibition was added at the next step, negative emotion words remained significant. Negative emotion words continued to predict emotion understanding even in the presence of behavioural inhibition, suggesting that emotion understanding may be influenced by a variety of variables—both socialization and child factors.

These findings are consistent with other findings about emotion socialization in the literature. Previous findings indicate that socialization about negative emotions might be more important than positive emotions in the development of socio-emotional competence (Laible, 2010). It is noted that speaking about negative emotions results in a different quality of emotional conversation than when discussing positive emotions. In negative emotion talk, more open questions, more emotion words, and more talk of other people tend to be used compared to positive emotion talk (Lagattuta & Wellman, 2002). Although the stimuli used during discussions in this study were negative in content, mothers used positive language in greater than 10% of utterances, and this use of positive words did not contribute to emotion understanding task performance. Negative emotion words during a discussion task about negative emotions still predicted emotion understanding in a task that included questions about both positive and negative emotions. It seems that parental socialization of negative emotions not only contributes to the understanding to negative emotions, but may also contribute to the understanding of positive emotions.

Coaching

Contrary to predictions and previous research, maternal coaching did not account for any unique variance in emotion understanding; previous studies have found such a relationship. For example, Denham and Kochanoff (2002) found that maternal coaching was related to preschool emotion knowledge. Other studies found that maternal explanations of emotions are related to emotion understanding (Denham, Zoller, & Couchoud, 1994; LaBounty et al., 2008; Raikes & Thompson, 2008). Given that coaching also includes explanations of emotions, it was predicted that a similar result would be found in the current study.

There are a variety of possible reasons why the current study found a different pattern of results. First, the coaching variable used here may not have captured the entire coaching concept. Given their low occurrence, positive and negative emotion themes were not included in the current study. Confirmation of emotions was deleted from the study because it was not coded reliably. Elaboration was coded reliably but the questions and statements did not correlate with each other or with other coaching variables; therefore they were deleted from the study. Coaching, negative emotion words, and positive emotion words were split up into three separate variables because the internal consistency (alpha) was not high enough to warrant combining these three variables. It is possible that it is the combination of these separate components of coaching that are influencing the development of emotion understanding. It is not clear whether similar relationships between these variables were found in other studies using this coding system. For example, Lunkenheimer et al. (2007) summed all coaching aspects of the system together (coaching, elaboration, confirmation) and then checked correlations with other variables. Although they did find a positive and significant correlation between coaching and total emotion words, it is not clear if correlations between elaboration variables and the coaching variable were also examined beforehand. Another study also did not explain the nature of the correlations between different parts of the coding system (Ellis, Alisic, Reiss, Dishion, & Fisher, 2013). Because this information is not provided, it cannot be known if the coding system variables were not associated with one another in the current study in a manner inconsistent with previous research.

Although the children in Lunkenheimer et al.'s study were aged 8 to 11, this coding system has also been used with preschoolers (Ellis et al., 2013). Age, then, may also not be the reason for these discrepant findings within the coding system. This is, however, the first time that this coding system has been used to predict emotion understanding. Previous studies using this coding system have examined emotion regulation, and behaviour (Lunkenheimer et al., 2007; Ellis et al., 2013).

Although an effect of coaching was not found in the current study, it is important to note that the parent-child interaction task used in the current study differed from that used in most previous research examining coaching. In particular, the majority of studies examining parental emotion socialization in preschoolers have assessed coaching in the

context of a reminiscing task (Denham et al., 1997; Denham & Kochanoff, 2002; Laible, 2011), or through parent self-report (Root & Stifter, 2010; Gottman et al., 1996). Other studies used yet another method to examine maternal explanations of behaviour: storybook tasks (Garner, Dunsmore, & Southam-Gerrow, 2008; Laible, 2004). In the latter studies, it is not clear whether parental emotion explanations were in the context of the storybook characters, or in the context of the child's own emotions. Coaching puts a greater emphasis on the child's own emotions, thoughts, and feelings. The current study found evidence of coaching and other emotion socialization variables in a discussion task about pictures. Although the pictures were matched for gender, these were generic pictures, and mothers still brought the conversation to their own children and talked them through their own emotions. The present study provides another method for evaluating Gottman et al.'s (1996) parent coaching, elaboration, and emotional word content.

Behavioural Inhibition

The present study also found that behavioural inhibition was a significant predictor of emotion understanding. Bivariate correlations revealed that behavioural inhibition and emotion understanding were negatively correlated. This means that as behavioural inhibition increased, emotion understanding decreased. The relationship was significant for total and non-stereotypical emotion understanding and marginally significant for stereotypical emotion understanding.

In the regression models, behavioural inhibition significantly predicted both total and non-stereotypical emotion understanding above and beyond negative emotion words, age, and language abilities. Again, this relationship was negative indicating that an increase in behavioural inhibition was associated with a decrease in emotion understanding. There was some indication of behavioural inhibition trending toward significance for the prediction of stereotypical emotion understanding as well. The limitations in interpreting this finding as well as other trends in the results are discussed below. This pattern of results was also found by Bernstein (2009) using the same data set, and her study was the first to examine such a relationship. It is not clear why an association exists; however, Bernstein speculated that the pathway between behavioural inhibition and emotion understanding may be related to poor emotion regulation. This study sought to clarify that relationship by examining whether parent emotion

socialization also contributed to this association. The current study found that behavioural inhibition and negative emotion words separately contributed to emotion understanding. This result gives partial support to Bernstein's speculation. It is through emotion socialization that parents teach their children emotion regulation, and both emotion socialization and regulation are related to emotion understanding (Eisenberg, Spinrad, & Cumberland, 1998). Behavioural inhibition is also associated with emotion regulation and understanding (Bernstein, 2009; Rubin et al., 2001). All of these constructs are related to one another and may interact to predict child outcomes. Given that this is the first study to have examined temperament, emotion socialization, and emotion understanding together in one study, further research is needed to further clarify these relationships and their implications.

Interaction

Contrary to expectations, behavioural inhibition did not interact with emotion socialization variables to predict emotion understanding. Several research studies have found interactions between behavioural inhibition and/or shyness and parenting variables to predict a variety of child outcomes (e.g., Lewis-Morrarty, Degnan, Chronis-Tuscano, Rubin, Cheah, Pine et al., 2012; Kertes, Donzella, Talge, Garvin, Ryzin, & Gunnar, 2009; Degnan, Henderson, Fox, & Rubin, 2008).

In the domain of emotion competence, emotion regulation has often been studied in relation to parenting (e.g. Rubin, Cheah, & Fox, 2001; Feng, Shaw, & Moilanen, 2011); however, only two studies to date have examined parental emotion socialization in shy or inhibited populations (Davis & Buss, 2012; Root & Stifter, 2010). These studies both used parent self report questionnaires about coping with children's emotions and found that supportive parenting moderated the association between temperament and peer play. These studies both assessed school aged children. The current study used a behavioural measure of emotion socialization, specifically assessed for aspects of parent coaching in the discussion tasks, and found a link between negative emotion words used and emotion understanding. Coaching (which is similar to supportive parenting) had no association with emotion understanding. Given the difference in methods and difference in results, it is possible that a different outcome variable, age, and/or gender may have contributed to the divergence in findings. For example, it is

known that the ability to understand emotions increases with age (Pons, Lawson, Harris, & Rosnay, 2003) and that emotion socialization contributes to emotion understanding. It is possible that at the preschool age, either a) emotion socialization does not interact with temperament, or b) these two variables do interact, but they do not have implications for emotion understanding. Another explanation is that gender might interact with both behavioural inhibition and emotion socialization, and that the effect of this interaction was suppressed in the current study due to lack of power in the gender groups (described below).

Gender

Gender differences were found when examining the association between emotion understanding variables and negative emotion words, coaching, and behavioural inhibition.

In boys, negative emotion word use was related to non-stereotypical emotion understanding, whereas in girls, this variable was related to stereotypical emotion understanding. This result demonstrates that there may be different associations between emotion understanding and negative emotion words for each gender. It is not clear, however, if this different pattern is due to gender or a lack of power in the sample. Further research is needed to disentangle these results.

It is also possible that a relationship between coaching and emotion understanding was not found because a lack of power and gender effects could be suppressing the relationship. Bivariate correlations suggested that coaching was significantly related to emotion understanding for girls and not for boys. In fact, this relationship was positive for girls but was in a negative direction for boys. Unfortunately, given the large amount of variables in the regression equations and small girls' sample (n = 43), differential gender relationships were not assessed. Some previous research, however, does make a case for coaching to differ by gender and has found that parents speak more about negative emotions with their daughters compared to their sons (Adams et al., 1995; Fivush et al., 2000). Given the emphasis on negative emotions in this study, it is quite possible that this association between coaching and emotion

understanding found for girls and not for boys is a product of a gendered socialization of emotions. Future studies may help answer this lingering question.

When examining the correlation between behavioural inhibition and emotion understanding, bivariate correlations were significant for boys. For girls, all correlations between behavioural inhibition and emotion understanding were in the same direction, but did not reach significance. Given that the sample had fewer girls than boys, it is likely that this difference is due to a lack of power rather than lack of relationship. Again, future research will help clarify this result

Implications

The findings of the current study give further evidence for four major findings in the current literature: 1) emotion understanding, like other child outcomes, is multi-determined; 2) both parent and child variables contribute to emotion understanding; 3) it is important to examine gender differences in developmental research; and 4) emotion coaching and dismissing may be studied behaviourally in a parent-child discussion task.

A large variety of variables contribute to child outcomes; it is not just the variables used in this study that may influence emotion understanding. The variables used to predict emotion understanding in the current study explained less than forty percent of the variance in emotion understanding. One implication of this finding is that there are more variables that may also contribute to the approximately sixty percent of unexplained variance. The present study also found that both child and parent characteristics may contribute to child emotion understanding. This finding also suggests that parent and child characteristics may be independent from one another and still have implications for the same outcome. Negative emotion words and behavioural inhibition both explained variance in emotion understanding; however, these two variables were not correlated with one another.

There was a gender difference in the association between coaching and emotion understanding. Specifically, a positive association between these two variables existed for girls and did not exist for boys. Many studies have identified different results when studying boys and girls and emotions (described above). This study gives further

evidence that these differential associations might exist and that they should be considered in analyses. Although there was not enough statistical power to explore this finding further, it remains a hypothesis for future research.

The above findings also have implications for intervention programs targeted at young children. The current results suggest that temperament and socialization are both important in emotional competence. One group applied the emotion socialization approach to a parenting intervention for disruptive children with successful results (Wilson et al., 2012). A parenting intervention teaching emotion socialization techniques was associated with a decrease in teacher rated behaviour problems. This intervention, however, did not consider children with an inhibited temperament. It was designed for externalizing issues. Although an interaction between behavioural inhibition and emotion socialization was not found currently, the results of the present study and Bernstein (2009) suggest that children with an inhibited temperament may also benefit from some kind of intervention to enhance emotion understanding, as emotion understanding may lead to better socio-emotional competence in future situations. Because the current findings suggest that both socialization and temperament contribute to emotion understanding, it is possible that both are important in interventions designed specifically for preschool children; however this is a question that needs to be examined further.

This study also demonstrates the usefulness in examining Gottman et al.'s conceptualization of coaching and dismissing through a discussion task, in relation to behavioural inhibition. Previous studies, explained above, have examined behavioural inhibition and supportive parenting using parent self report questionnaires. The findings of the current study did not find similar results. This discrepant finding underscores the importance of including multiple measures when undertaking research so that the full construct is measured; including both will also help disentangle which aspects of coaching and dismissing are influencing child emotion understanding (i.e., are similar findings present when using behavioural versus self report task, and if not, why are they different?).

Limitations and Future Directions

The current study has several limitations. First, there were some statistical limitations including a lack of power and a possibly increased type 1 error rate. According to Cohen (1992), in order to detect a medium effect with adequate power using multiple regression analyses with 6 predictors, a minimum of 97 participants is required. Although the current full sample size was close (n = 91), regression analyses for each gender were not able to be conducted due to low power. Similarly, there were some bivariate correlation coefficients that were significant for boys and not for girls even though the magnitude of the correlation was generally the same. This also may have been due to low power. Future studies with a larger sample size will be helpful to clarify whether these differences were due to lack of power or actual gender differences.

Because the emotion socialization variables (coaching, positive emotion words, and negative emotion words) were not combined, more regression analyses were needed, increasing the type 1 error rate (Cohen et al., 2003). It is possible that some significant findings were spurious due to an increasing likelihood of rejecting the null hypothesis when multiple statistical procedures are carried out. This is especially important given that some findings using both correlation and regression analyses were approaching significance and these cases should be interpreted with caution.

Second, the current study only included mothers. This limits generalizability to all parents and caregivers (e.g., fathers and grandparents). Recent research suggests that fathers may have a unique role in socializing their children and the current study does not account for this relationship. For example, one study found that both parent and child gender were important in emotion socialization, and that fathers also played a role in sadness socialization, whereas mothers' roles were focused on anger socialization (Zeman, Perry-Parish, & Cassano, 2010). Although research with fathers is only in its beginning stages, other studies have also found a unique role for fathers in the emotion socialization of children (Garner, Robertson, & Smith, 1997; Chaplin et al., 2005; Garside & Kilimes-Dougan, 2002). It is possible that both mothers and fathers contribute to child emotion understanding. Grandparent characteristics are studied even less, but in many non-Western cultures, grandparents have a large hand in raising young children. It is also possible that other variables may contribute to emotion understanding

along with emotion socialization and behavioural inhibition: attachment (van Brakel, Muris, Bogels, & Thomassen, 2006), executive functioning (Hughes, Dunn, & White, 1998), culture (Cole, Tamang, & Shrestha, 2006), and other parent variables. Research has found that these variables are important in predicting outcomes for children. The current study only examines one small part of a whole system of influences that are shaping a child's experience. Future studies should include more individual difference variables as well as parent variables (e.g., parent temperament, depression etc.) to determine the exact nature of the relationship between all influences on a child's emotion understanding.

Third, this study is strictly correlational and no causation may be inferred. Using the present cross-sectional method, the only inferences that can be made are that behavioural inhibition and negative emotion word use by mothers are related to concurrent child emotion understanding. Similarly, no conclusions may be drawn about bi-directionality. Parent-child relationships are found to be reciprocal in nature (Morelen & Suveg, 2012); however, the current study was not able to account for this feature. Similarly, conclusions about future child development and outcomes cannot be made due to variables being measured at only one time point. Future longitudinal research will be helpful in determining the exact nature of the relationship between all parent and child variables.

Fourth, the current sample was highly homogenous; the majority of the sample was Caucasian and well educated. Generalizations from this sample to families from lower education levels and socioeconomic statuses cannot be made. The current sample also did not contain enough families from minority backgrounds to generalize to any minority culture. It is highly documented that different cultures vary in their expectations of child behaviour, socialization, and emotional experience (Cole et al., 2006; Cole, Bruschi, & Tamang, 2002; Hess, Kashiwagi, Azuma, Price, & Dickson, 1986; Eid, & Diener, 2001; Raval, Raval, Salvina, Wilson, & Writer, 2013). Future research in multiple cultures would be a better way to learn how relationships between child temperament and emotion socialization interact when the target families are not Caucasian.

Future studies examining behavioural inhibition and emotion socialization would be very important in understanding child development and would contribute new points of intervention for children who are lacking emotional competence. Given that children are influenced by a variety of cascades and systems, a future study that examines several influences in a child's life may be helpful in answering some lingering questions (e.g., Shaffer, Suveg, Thomassin, & Bradbury, 2011). For example, examining mothers and fathers in a discussion task may help to understand the contribution of both parents to child emotion understanding. Similarly, the inclusion of parent temperament variables and other parent factors, such as marital satisfaction, may help us understand how these factors influence a parent's child socialization techniques. The inclusion of measures of other child variables will also help understand other influences on a child's emotion understanding. It is also possible that emotion socialization and behavioural inhibition may interact in certain ways to predict other child outcomes that are not emotion understanding. Several studies have assessed emotion socialization and behavioural inhibition separately and examined their relationships with several outcomes: school performance, peer interaction, emotion regulation, and future psychopathology. Future research is recommended to not only include several predictor variables, but several outcome variables as well.

Conclusion

This study was the first to examine maternal emotion coaching behaviourally in relation to behavioural inhibition in preschoolers. Although results gave some indication of child emotion understanding to be multi-determined by parent and child variables, further research with more statistical power is needed to fully disentangle these relationships. This is especially true when examining how child gender may play a role in these associations.

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Appendix A.

Advertisements

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To whom it may concern,

The Children's Social and Emotional Development Lab in the Department of Psychology at Simon Fraser University is conducting a study on how children's temperament influences their social understanding. We are particularly interested in how a shy, fearful temperament may affect a child's development. We are also interested in children with more outgoing temperaments.

We are recruiting 3½ to 4½ year old children and their mothers. Mothers and their preschoolers come into our lab at SFU. Mothers are with their children throughout the study. The children will engage in some play activities with a researcher and with their mothers and mothers also complete some questionnaires. Families receive $25.00 for their participation, and the child receives a 'Young Scientist Award' and a small toy.

We are asking for your help in recruiting families for this study. We have enclosed a poster that you can post in a prominent area, and we have also enclosed approximately 20 leaflets to distribute to children in your class or daycare.

If you have any questions regarding the study, or any further suggestions about recruiting families who meet these criteria, please contact Dagmar Bernstein at [redacted], or by e-mail at [redacted]. We also have a great website for our lab which describes what we do and the various studies that are ongoing. The website address is www.sfu.ca/csedl .

Thank-you very much for your help,

Dagmar Bernstein, M.A.
Department of Psychology
Simon Fraser University
8888 University Drive
Burnaby, BC, V5A 1S6

MOMS

Would you and your child like to participate in a fun research study that looks at how temperament influences your child's social development?

The **Children's Social and Emotional Development Lab** in the Department of Psychology at Simon Fraser University is conducting a study on how children's temperament influences their social understanding.

WHO WE ARE LOOKING FOR:

We are particularly interested in children with a shy, fearful temperament. We are also interested in more outgoing preschoolers.

WHAT YOU WILL DO:

- Come to our lab at Simon Fraser University with your child for approximately one hour.
- Fill out some questionnaires and interact with your child.
- Your child will also engage in some play activities.
- Receive $25.00 for your participation.
- Your child will receive a small toy and a "Young Scientist" Award.

HOW TO PARTICIPATE:

Call us, or visit our website:

(604) 268-6825

www.sfu.ca/csedl

You will help us to find out more about child development, and have a good time too!

SFU PRESCHOOL STUDIES NEED PARTICIPANTS

SFU's Social Emotional Development Lab invites parents and preschoolers (3½ to 4½ year olds) to take part in research projects on children's social development. Our studies each require one visit to the lab that will take approximately one hour. Participants will be paid $25.

For more information please visit our website http://www.sfu.ca/csedl or call 604-268-6825.

Appendix B.

Behavioural Inhibition Observation Battery

B.I. Coding Form (DRAFT 3)

Date _____ Participant # _____

Rater _____ Male _____ Female _____

Start Time of Recording Child _____ (may differ from start of tape)
(from when child shown toys) **RATER NOTES**

Time at First Toy/Object Approach _____

1. Latency to First Approach _____

BI Battery

1. Unfamiliar room with unfamiliar objects at 5 minutes_____
   The number of toys/objects the child
   touches, examines or plays with. at 7 minutes_____

2. Unfamiliar examiner asking that her actions with unfamiliar objects be imitated. (Do what I do game.)

   a) Tickle Dragon
   0 = full attempt to imitate
   1 = reach toward, some attempt
   2 = no attempt to imitate _____/2

   b) Clap Hands
   0 = full attempt to imitate
   1 = some attempt
   2 = no attempt to imitate _____/2

   c) Hat on Head
   0 = full attempt to imitate (with comment)
   1 = some attempt, no comment
   2 = no attempt to imitate _____/2

   d) Laugh/Arms out
   0 = full attempt to imitate (with laugh)
   1 = some attempt, e.g., arms out
   2 = no attempt to imitate _____/2

   e) Chicken Dance
   0 = full attempt to imitate (some dancing & sound)
   1 = some attempt, e.g. gets out of chair, no sound
   2 = no attempt to imitate _____/2

3. Blood Pressure Cuff
   0 = full compliance, puts on arm
   1 = some resistance, eventually complies
   2 = refusal and/or distress _____/2

4. Stand/Eyes Closed
   0 = full compliance
   1 = stands, some attempt, does not comply
   2 = no attempt _____/2

5. Objects in Piggie (asked to retrieve unknown objects)	0 = full compliance, easily puts arm in and retrieves 1 = makes an attempt, but retracts arm/does not finish or has mom/examiner do first & then tries 2 = touches or examines tent and or opening or has examiner insert her arm and complete task 3 = makes no attempt _____/3
6. Fill/Carry Water (asked to fill and carry a full cup of water to table)	0 = full compliance and cooperation – independently pours/carries 1 = some concern or reluctance, but pours/ carries independently 2 = hesitates, waits and **examiner assistance with** pour/carry 3 = as above, help from **mom or accompanying person** 4 = refusal, no attempt made _____/4
7. Painting Whiskers (on examiner's face)	0 = full compliance and cooperation – independently done 1 = some concern or reluctance, but goes ahead, and/or very minimal painting on face, e.g., one or two tiny strokes 2 = alters task in some way, e.g., draws on self or on examiner's hand rather than face (do not code if altered after full compliance and cooperation, i.e., in addition to) 3 = hesitates, begins to make an attempt, stops before drawing on face or elsewhere 4 = refuses _____/4

Instructions for Coders:

Now please go back to part of video where the examiner begins BI tasks when child is seated at table.

***Note time child seated at table** _____ **RATER NOTES**
(from when child is fully seated)

Time of first spontaneous comment _____
(from beginning of utterance) **(if no comment during entire battery, please watch remainder of tape and note first comment if there is one.**

Time of first smile _____

***Note time when battery is over** _____
(as above if no smile during battery)

Latency to first comment _____
(Time first seated – time first comment)

Latency to first smile _____
(Time first seated – time first smile)

2. Number of SPONTANEOUS COMMENTS
over the battery (NOTE - not simple answers to questions, but comments the child makes without prompting.) _____

3. **Number of SMILES over the battery** _____

4. **EYE CONTACT**

0 = makes easy appropriate eye contact with examiner
1 = adequate eye contact, but sometimes averts, looks away
2 = eyes averted, looking down or away most of time, ill at ease.

_____/2

5. **VOICE QUALITY** (when they speak - even if very little speech)

0 = spontaneity and gaiety in voice
1 = average voice quality
2 = moderately soft voice
3 = whispering

_____/3

6. **PARENT SUPPORT/ PROXIMITY**

0 = no contact, comfortable participating independently
1 = minimal contact, occasional looking over and/or checking in
2 = moderate contact – e.g. occasional hug, leaves chair
3 = parent needs to encourage child to participate and/or some clinging
4 = child will not participate unless parent sitting with him/her.

_____/4

7. **SHYNESS**

0 = not at all shy
1 = less shy than not
2 = more shy than not
3 = extremely shy

_____/3

8. **OVERALL LEVEL OF BI – FEAR, SHYNESS, RESISTANCE ACROSS BATTERY**

0 = none, displays no fear, not at all shy, uninhibited, outgoing, talkative, may be boisterous
1 = minimal, confident, easily adjusts to new situation and people, appears socially comfortable
2 = generally complies with requests, cooperative, may initially be quiet, but no resistance/hesitance
3 = hesitant, shy, appears uncomfortable, very quiet
4 = extremely shy and inhibited, fearful, no talking to examiner or minimal whispering, eyes averted, opts not to do many tasks and/or may cling to mom

_____/4

RATER NOTES

Please make note of any additional observations and/or coding challenges.

B.I. Coding Summary

Date _____ Participant # _____ Rater _____

BI Battery

1. Unfamiliar room/ approach objects	_____	0-5	_____	0-5
2. Action Imitation				
a. Dragon	_____	0-2		
b. Hand Clap	_____	0-2		
c. Silly Hat	_____	0-2		
d. Laugh/Arms out	_____	0-2		
e. Chicken Dance	_____	0-2		
Total Action Imitation			_____	0-10
3. Blood Pressure Cuff	_____	0-2		
4. Stand/Eyes Closed	_____	0-2		
5. Reach in Piggie	_____	0-3		
6. Fill/Carry Water	_____	0-4		
7. Paint Whiskers	_____	0-4		
Total Other Tasks			_____	0-15
BI Battery Total			_____	**0-30**

Behavioral Observations

1. Latency to Approach	_____	0-4		
2. Spontaneous Comments	_____	0-3	Latency to First comment 0-2	_____
3. Smiles	_____	0-3	Latency to First Smile 0-2	_____
4. Eye Contact	_____	0-2		
5. Voice Quality	_____	0-3		
6. Parent Support/Proximity	_____	0-4		
7. Shyness	_____	0-3		
6. Overall BI	_____	0-4		
Behavioral Observations Total			_____	**0-30**
Total BI Coding			_____	**0-60**

4

Appendix C.

Adapted Family Emotion Communication Coding System

Adapted Family Communication Coding System

Important Terms

- *Speaker:* The speaker is the person talking
- *Referent:* The referent is the person who they are talking about
- *Emotion Word:* A specific emotion word (such as 'happy' or 'mad') used in the conversation
- *Emotion Theme:* Used when emotions are being discussed but a specific emotion word is not used
- *Socialization Code:* Will be used on the coding sheet to designate coaching, dismissing, elaboration, confirmation, off task behavior etc.
- *Utterance:* Each utterance is the words spoken by one person, surrounded by other people speaking (i.e. a speaking turn). For each picture discussed, the utterance number will begin at 1 and increase by one number every time a new person begins speaking.

What to Code/Coding Rules

- Note the speaker for each utterance (all of one speaker's comments bounded by another speaker's comments)
- Code each utterance that includes a specific emotion word
    - Note speaker, referent, and context
- Code utterances that are part of feeling state conversations: all utterances surrounding the statement with the specific emotion words that continue with the feeling state itself as their topic (following Dunn et al., 1987)
- Create a line on coding sheet for each utterance even if it is an un-coded statement.
- You can code more than one context for a single utterance if both are relevant
    - Example. If someone uses both elaboration and coaching in the same utterance, code each separately on a new line.
    - BUT if elaboration/coaching/confirmation and dismissing are in the same SENTENCE, the dismissing negates the other codes and only dismissing is coded
    - IF elaboration/coaching/confirmation and dismissing are in separate sentences in the same utterance, they may be coded as separate.
- When you assign a context code for an utterance that doesn't get an 'emotion word' code because there were no specific emotion words used, assign a code to the 'emotion theme' category to indicate which feeling the dyad is discussing. Can't have an emotion word and theme in the same utterance UNLESS they were in separate phrases
- If someone refers to more than one feeling in an utterance, generate another line of code for the second (or any additional) feeling(s)
- If the same question or statement is said twice, only code once
- Elaboration versus coding
    - Elaboration: what's scary about the slide?
    - Coaching: how did the slide make you feel?

Emotion Words vs. Emotion Themes

- Place a code in the 'emotion word' column only when they use a specific emotion term that describes an individual's feelings.
- Use the 'emotion theme' column when a conversation about a specific emotion word gets carried forward, but the follow up utterances do not restate the emotion word
    - Example: mother or child may say he or she was sad, but follow up comments do not use the specific word "sad". In this case, you should code the "sad" topic in the "emotion theme" column

How to Code the Referent

- Always code the referent when someone used specific emotion terms that get coded as "emotion words"
- When coding emotion themes in emotion conversations, use the referent from the most recent emotion word
- In cases where the referent is ambiguous because they are referring to the emotional quality of an event ("It was a fun time"), note the referent as category 11 (see below). But when someone says "I had a good time," for example, then the referent is the person having a good time.
- Whenever you code dismissing behaviours, dismissing statements, or confirmations, the referent should be the person (or persons) who were dismissed.
- When the referent is abstract, as when someone talks about "sadness" code 11 as the referent.

Uncoded Utterances (only note the speaker)

- Orientating questions or comments: Questions or comments designed to get the family oriented to a particular issue.
    - Examples: "Can you think of any other time?"..."What else should we talk about?"
- Initial proposals or suggestions, even if it is the 2nd or 3rd event that's proposed in a conversation
    - Example: "what about the time we went to Disneyland?"..."Why don't we talk about the time Grandma was sick?"
- Clarifications
    - Example: "What did you say?"
- Planning for future events
    - Example: "Are we going to the grocery store after we leave here?"
- Statements that suggest that someone is trying to recall an experience or to locate a memory
    - Examples: "Was I really there?" ..."I don't remember that."
- Disputes about events, who did what, or how things happened

Relationship Codes (to note speakers and referents)

1. Target child
2. Mother/mother figure
3. Father/father figure
4. Male sibling
5. Female sibling
6. Other male person
7. Other female person
8. Multiple family members (group)
9. Multiple kids in family
10. Parents or multiple adults in family
11. Inanimate, animal, or abstract referent, reference to the emotional quality of an experience: “that was fun” ...”favourite part”
12. Peer group, friends,
13. Child in the picture
14. Mother in the Picture
15. the picture
16. Other

Socialization Coding Categories

1. Coaching
2. Dismissing statement
3. Dismissing behaviour
4. Elaborative statement
5. Elaborative question
6. Confirmation
7. Lab emotions
8. Child Discontinuation

Picture Codes—indicate H, U, or S on coding sheet under admin order

- Hugging (H)
- Upset in Bed (U)
- Scared Girl (S)

Codes for Emotion Words/Emotion Themes

Positive

1. Happy
    a. Examples: happy, joyful, thrilled
2. Affection for people
    a. Examples: like, love, adore
3. Amusement
    a. Examples: Have fun, like (things or events), enjoy
4. Positive self emotion
    a. Examples: proud, pleased with myself
5. Other positive
    a. Examples: surprised, excited, relieved, feel better
6. General positive terms, often used to describe the quality of an event
    a. Examples: good (as in "good time", or "feeling good"), okay, a great time, better or easier, favourite (as in "favourite part")
    b. These don't count: cool, neat, special
7. Positive emotional behaviours
    a. Smiling, laughing, giggling, hugging

Negative

8. Sadness
    a. Examples: sad, depressed, blue, down in the dumps
9. Anger
    a. Examples: mad, grumpy, cranky, frustrated, irritable, annoyed, pissed off, hate
10. Fear/anxiety
    a. Examples: scared, afraid, frighten, anxious, stressed out
11. Concern
    a. Examples: worried, concerned
12. Negative self emotions
    a. Examples: guilty, ashamed, embarrassed, mad at myself, shy, bashful, timid
13. Sympathy
    a. Examples: fell sad/bad for, feel sorry for someone
14. Regret
    a. Examples: to be sorry, feel bad about what I did
15. Jealousy
    a. Examples: envious, jealous
16. General distress
    a. Disgusting, distressed, not funny, lonely, not like, miserable, not happy, confusing, upset, horrible, not having fun, missing somebody/thing, unhappy, awful, bored, bugging me, disappointed, drives me crazy, hurt feelings
17. General negative terms, often used to describe the quality of an event
    a. A difficult time, a tough time, a hard time, a bad experience or "I felt bad", not a great time, worst (as in "worst part")
18. Negative emotion behaviours
    a. Crying, hitting (in anger), fighting, pouting, sulking, yelling

Family Narratives Coding/Socialization Codes

Coaching (1)

DEFINITION: When family members use the pictures as an opportunity for coaching, they will focus on the child's internal processes (emotions, motivations) in a way that will help the child learn about emotions. Coaching includes questions or comments that will help children reflect on their emotional experiences, problem solve about how to handle difficult emotional experiences, or think about how to heighten or extend positive emotions. Most often, coaching comments will focus on emotions, but occasionally they will involve questions or comments about motivations during emotional events.

IMPORTANT: Coaching occurs only when someone is being asked to reflect on their own emotional experiences. Even so, the referent can be "multiple family members" if the parents are referring to their child and other family members/siblings together. In general, if the referent is an 11, it's unlikely that it is coaching.

NOTE: If the parent is helping the child understand a specific emotion while discussing the picture, code this as coaching (example, "how can we make him/her feel better?"). Remember these statements are about reflecting on emotions, discussing the why and the how.

SOME WAYS COACHING MIGHT MANIFEST:

- Mother helps child label his/her emotional experiences or reasons for experiencing a certain feeling
- Mother helps child problem-solve about how to cope with negative emotional experiences
- Mother helps child problem-solve about strategies for dealing with the situation that lead to a negative emotion
- Mother helps child recognize ways he/she can enhance positive experiences

COACHING EXAMPLES

- Direct questions about child's emotional state
    - "How did you feel when that happened?"..."Were you angry?"..."Did you like it when Grandpa made the bonfire?"..."Did you have fun when we went up in the plane?"..."Were you sad when you got sick?"..."What was fun for you when we went to Cedar point?"
- Questions or comments that help a person reflect on why he/she might be feeling a certain way
    - "What made you so sad?"... "Why were you crying?"
- Coaching also may involve offering hypotheses or suggestions about why someone might be feeling a particular way.
    - " Were you upset because you didn't want to be punished?"
- Observations that label a person's emotional state or help a person recognize that she/he might have been feeling a particular way

    - "You were really scared"..."I could tell you were mad because you got up and walked away"
- Questions or comments that help child put their emotional reaction into a context of other emotional experiences that they've had
    - "I don't think you had ever been so scared"
- Descriptions that provide a clear link between emotion and behaviour/or another indicator of that emotion
    - "I knew you were sad because you were crying"
    - "How do we know the child in the picture is sad?"
- Observations that link a person's emotional response to that person's characteristic way of responding to certain events
    - " I knew you'd be really disappointed when dad cancelled his visit because you look forward to seeing him"
- Questions or comments that help a person to understand the nature of different emotions or emotional events
    - "What does it mean when we are sad?"..."DO you know what we mean when we say we are anxious?"
- Questions or comments that help a person think about ways to enhance or prolong positive emotional experiences
    - "What could you have done to make it more fun?"
- Questions or comments that help a person think about ways to ameliorate negative emotional experiences
    - "What would make you feel better?"
- Questions or comments about other internal experiences—most often motivations or thoughts that are related to an emotional experience being discussed
    - "Why do you think you acted that way?"..."Why do you think you were sad?"... "Why didn't you want to talk about this?"

Dismissing Statements (2)

DEFINITION: suggestions that someone's emotional perspective is wrong or silly, or suggest that someone's feelings, or feelings in general, just aren't that important.

DISMISSING MANIFESTATIONS:

- Suggestions that anger/sadness are potentially harmful to self or others
- Suggestions that someone feels that it's their job to change these toxic negative emotions as quickly as possible
- Suggestions that negative emotions aren't going to last and aren't very important

NOTE: If the statement does not occur in the context of an emotional conversation, it is NOT dismissing

DISMISSING EXAMPLES

- Minimizing importance of events
    - " It wasn't a big deal"..."It waasn't anything to get upset over"
- Suggesting there is nothing unique about someone's emotional experience

    - "Children like toys, so it doesn't suprise me that you were sad when your toy broke"..."Grandmas usually are special to grandchildren, so it doesn't suprise me that you were sad when she died"
- Describing a response as an over reaction, or suggesting the intesity of an emotion was misguided
- Suggesting one should "be over it" already
- Parents suggesting that their children don't have much to be sad about, and that once they get older they will realize how silly their concerns were
- Suggesting a need to get over feelings
    - Examples: don't worry about it/don't dwell on it"
- Sarcastic comments that ridicule another person's perspective on an emotional event
- Teasing about someone's emotional experiences, overt or subtle. The underlying message is that someone's feelings were silly or too extreme
- Conveying that one person's reasons for feeling a particular way aren't valid
    - Example: "How come you were sad? It was only a toy."
- Describing one another in negative terms when talking about someone's emotional reaction
    - Example " you are a brat when you are angry"
- Generally do NOT code "no" as anything, UNLESS someone suggests that an emotional event raised by another is not that important or denies the emotional component of it
- Statements that suggest a particular issues isn't all that important
- Statements that suggest that someone doesn't have much to say or add about a particular emotional experience
    - "You were too little to understand"
- Statements that suggest that a child's emotions are difficult for a parent, or overwhelming to a parent
    - "nothing makes me sadder than when you are sad"
- Disciplinary statements are not coded as dismissing when they instruct in socially appropriate emotions
    - Child: that was fun when we beat up Jimmy
    - Parent: That was not fun at all. You could have really hurt him
    - The above exchange would not be coded

Dismissing Behaviours (3)

DEFINITION: behaviours that suggest that someone's emotional perspective is wrong or silly, or suggest that someone's feelings (or feelings in general) are not important. Dismissing behaviours occur in the response to someone's emotional disclosure or in the context of emotional conversations. (Emotion conversations or feeling state conversations include all utterances surrounding the statement with the specific emotion words that continue with the feeling state itself as their topic). Dismissing behaviours often create an unsafe climate to discussing feelings

DISMISSING BEHAVIOUR MANIFESTATIONS:

- Abrupt topic changes after someone discloses emotional information without acknowledging what the person said

- "talking over" someone
    - Or not leaving room for the other person to talk
- Eye rolling or contemptuous expressions in response to emotional disclosures
- Failing to respond to significant emotional disclosures or someone's desire to talk about a particular emotional event
- Laughter that ridicules someone's contributions to a conversation about an emotional event
- Active dismissal of emotion

IMPORTANT: Not all rude behaviours will be coded as dismissing. Dismissing behaviours MUST occur after an emotional disclosure or in the context of emotional conversations. Also, talking over is more significant when done by parents, rather than children. Children may interrupt in excitement or heat of moment, and is not considered a dismissing behaviour

IF the content of what someone says is dismissing, AND the person also engages in a dismissing behaviour than code both

NOTE: If the behaviour does not occur in the context of an emotional conversation, it is NOT dismissing

DISMISSING BEHAVIOUR EXAMPLES:

- Dynamic of conversation feels dismissing
    - Examples: Person A ignores person B, or person A follows their own agenda, quick moves away from an emotional topic by one person (example, wanting to move on to next card)
- Family members may talk over one another
- Yes-but statements: "yes, but..." will advance speaker's own perspective without acknowledging the other person's. In this case, the "yes" part is NOT coded as a confirmation. The dismissal negates the potentially positive effect of the confirmation so just code the dismissal
- Ignoring or extreme lack of attention after someone relays emotional information
- Eye rolling or contemptuous expressions such as "hmph"
    - Anything that seems oriented toward shutting down another person's contributions to an emotional conversation
- An abrupt end to a sequence or attempt to move on to next card after someone has disclosed emotional information that hasn't been acknowledged yet
- Distracting behaviours, distracting off task questions that focus on superficial topics (Parents are being dismissing)
- Parents may focus excessively on their own emotions without leaving room for kids to talk about their emotions and emotional experiences
- Parents disclosing emotional information that is inappropriate and potentially overwhelming to the child. Again, the focus is more on the parent rather than the child.
- Parents may steamroll the conversation
    - Examples: answering their own questions, asking closed ended questions (yes/no) about an emotional event

- Misattributing emotions to a person and then not respecting that person's denial of this attribution
    - Example: parent: "you were really mad weren't you?" child: "No, I wasn't" Parent: "oh yes you were; we all were"
    - Only code misattributions that are not "repaired"
        - Parents show respect for child's denial of emotion
        - Example: : parent: "you were really mad weren't you?" child: "No, I wasn't" parent: "You weren't? I thought you were mad because you were stomping around"

Elaborative Statements (4)

DEFINITION: Comments in which a family member offers more detailed information about the emotional quality of an event. They can be statements in which the family members identify their own feeling state or describe reasons they felt a certain way. To be scored an elaboration, a statement must include a specific emotion word, or refer to the emotional quality of an event (a good time/bad time), or take place in the context of an emotional conversation or feeling state conversation.

NOTE: can not code elaboration and dismissing at same time, unless they are two different sentences.

ELABORATIVE STATEMENTS EXAMPLES:

- Statements that offer new emotional information or take the conversation "one step further." For example, in the context of emotional conversations a person may detail what was more fun, what was difficult etc.
    - Examples: "going to the Grand Canyon and hiking."
- Statements in which someone labels his/her own emotional responses. These statements can also include an affirmative response to someone's question but must include a specific emotion word or more detailed response, not simply a "yeah" or a "yes"
    - Example: "yeah, I had fun"
- Statements about one's own emotional experience of the event
    - Example: "I hated the long drive home"
- Statements that elaborate on why someone was feeling a particular way
    - Example: "I felt sad because grandma used to do so many nice things for me"
- Statements comparing the emotional quality of two different events
    - Example: "I thought going to Cedar Point was more fun than going to the State Fair"
- DON'T code vague statements of affirmation in response to elaborative questions when these responses seem to reflect resistance more than a genuine contribution to the conversation
    - Examples: "just because"... "I just did"... "I guess so"
- Statements in which someone describes emotional behaviour without using a specific emotion term.
    - Examples: crying, laughing, smiling, hugging, kissing, stomping etc

- These are not coaching because there is no clear link between emotion and behaviour
- Examples: “how did you feel? (coaching).... “I was crying.” (elaborative statement)

Elaborative Questions (5)

DEFINITION: elaborative questions help scaffold the child by helping them explore their story about emotional aspects of an event and/or recall and relay more details about the emotional quality of the event. These questions differ from coaching questions, in that they focus more on the event (what happened, what about an event was good or difficult) than on one person’s internal emotional reaction. To be scored on elaboration, a question must include a specific emotion word, or refer to the emotional quality of an event (a good time, difficult time, bad day), or take place in the context of an emotional conversation/feeling state conversation.

ELABORATIVE QUESTION EXAMPLES:

- Questions that help the person identify his/her perceptions of the emotional quality of an event. These focus on events rather than an internal emotional experience (which would be coaching...coaching example: what was scary *for you?)*
  - Elaboration Examples: “did you think that was fun?”... “ Did you think that was scary?”
- Questions that encourage someone to provide more details about the emotional aspects of a situation
  - Example: “what was scary about the slide?”
- Questions that invite someone to compare the emotional quality of two different events
  - Example: which do you think was harder, when Grandpa got sick or when we had to move out of our house?”
- Questions about emotional behaviours, with no reference to feeling states
  - Example: “were you crying”
  - However, if the speaker asks about emotional behaviour and the reason why (“why were you crying”), then this is coaching
- Questions about other people’s emotions
  - Examples: “Was grandma sad?” ...”Is he/she happy or sad?”
- Questions that invite the speaker to say more about or to clarify their perspective on the emotional quality of an event

Confirmation/Validation (6)

DEFINITION: verbal validations of another person’s emotional experience. These are scored directly after someone talks about an emotional reaction—that is, only after someone speaks directly about his/her emotional reactions to an event. Confirmations are only scored in response to statements (not in response to questions). Affirmative responses to questions about feelings do not count. Confirmations can occur in the context of other events—most often elaborations and coaching statements—if new information is added or if the speaker focuses on helping the person better understand his/her emotional reaction after the confirmation.

CONFIRMATION EXAMPLES:

- Confirming or validating someone's perceptions about an emotional event, or emotional reaction
    - Examples: " I was so happy."... "Yeah, I could see that." (confirmation)
- If the speaker confirms/validates and then adds new information about the emotional quality of the event, then this would be confirmation with elaboration
    - Example: "I didn't like it when we moved."... "Yes, it was hard to leave our old neighbourhood and all our friends." (confirmation with elaboration)
- If the speaker also focuses on helping the person better understand his/her emotional reaction, this would be confirmation with coaching
    - Example: "I didn't like the car ride."..... "Yeah, you always have a hard time with long trips like that." (confirmation with coaching)
- Empathetic mirroring or reflecting one's person's comments about an emotional experience. Repeating what the other has said in a way that validates someone's emotional experience. Or it can involve a general statement about the experience or event.
    - Example: "I was so sad when I found out Grandpa died."... "Yeah that was a really sad time." (confirmation)
- Statements that don't add anything new, but that validate what someone has said while trying to move the conversation forward.
    - Example: "so you said you liked it when the dogs were running up and down the stairs"
- "joining" with someone about his/her emotional experience. The speaker will validate someone's emotional experiences by describing how they are shared
    - Example: "he like roller coasters as much as I do" (confirmation with elaboration)
- Enthusiatic one word or two word explanations that reflect someone's agreement about another's emotional experiences or about the emotional quality of the event.
    - Examples: "Oh yeah!"... "Definitely!" ... "Exactly!"
- Sarcastic confirmations DO NOT count; code these as dismissing
- Grudging agreements DO NOT count
    - Example: "Well I guess so, if you say so"
- "yes-but" statements are dismissing
- Enthusiastic responses to someone's suggestion about what to talk about don't count unless they are referring to the emotional quality of an event.
    - Example: "How about when my dolly broke?" .. "oh yeah, that's a good idea!" (NOT confirmation)
- Confirming/agreeing about details does NOT count
    - Example: "oh yeah, I remember that too" (does not count)
- Affirmative responses to questions about what someone might have been feeling don't count as confirmations
    - Example: "were you feeling angry?" (coaching?) .... "Yeah" (NOT a confirmation)
- But if additional information accompanies the affirmative response, then we code as an elaborative statement
    - Example: "were you angry?" (coaching?) .... "Yeah I hate it when she takes my stuff" (elaborative statement)

Emotion Talk Related to the Lab Task (7)

DEFINITION: score this context whenever the family talks about emotions that are related to what's going on in the lab (rather than completing the task). For example when parents talk with kids about misbehaviour in the lab, or when mother or child express enjoyment or frustration with the lab task itself.

EXAMPLES:

- Displeasure with someone's behaviour in the lab
  - Example: "I am getting upset because you are not listening"
- Displeasure with task
  - Example: "this is boring"
- Regret or sorrow over someone's negative experience in the lab
  - Example: "I'm sorry this is hard for you"
- Expressing remorse for one's own behaviour in the lab
  - Examples: "I'm sorry I hurt your feelings just now"..."I'm sorry I'm not listening"

Child Discontinuation (8)

DEFINITION: this will be coded if the child displays deliberate attempts to discontinue the task. This is different from distracted behaviour in that discontinuation is more than just being distracted for a moment. It will seem as if the child is done with the task, are not interested, and can not be bothered to participate.

EXAMPLES:

- Task irrelevant verbalization
  - "I'm hungry"
- Walking away
  - And/or starting to play with toys
- Drawing attention to irrelevant content
  - " look at that toy, I want to play with it"
- Deliberately ignoring mother's questions/comments about the pictures
- Looking off into space

Coding Sheet

Participant ID: **Coder:** **Date:** **ADMIN Order:**

Utterance #	Emotion Word	Emotion Theme	Speaker	Referent	Socialization Code

Utterance #	Emotion Word	Emotion Theme	Speaker	Referent	Socialization Code

Totals:

Total # of utterances: _____

Total # of emotion words: _____

Total # positive emotion words: _____

Total # negative emotion words: _____

Total # of emotion themes: _____

Total # of positive emotion themes: _____

Total # of negative emotion themes _____

Total of each socialization code (1-8):

How to Create Totals

Total # of utterances = total number of speaking turns

Total # of emotion words = count up how many emotion words were used

Total # of positive or negative emotion words = all instances of either negative or positive emotion words

Total # of emotion themes = count up how many emotion themes were used

Total # of positive or negative emotion themes = all instances of either negative or positive emotion themes

Total of each socialization code = for each socialization code for 1-8, tally up how many instances there were for each. Then, simply write 1 = ..., 2 = ..., 3 =....etc.