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Parental socialization of emotion and affect recognition in school-aged children.

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Parental Socialization of Emotion and Affect Recognition in School-Aged Children

by

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Abstract

In the present study, parental socialization of emotions was examined in relation to children's ability to identify affect. Two hypotheses were examined, with the first positing that variance in children's affect recognition could be explained by examining parents' self-report of acceptance of their children's emotions and the second positing that variance in children's affect recognition could be explained by examining parents' self-report of expressiveness in the family. Thirty children ages 5- to 10-years-old identified emotions depicted in emotion-eliciting vignettes and in computer-displayed photographs of facial expressions. Vignette responses were measured for accuracy, while verbal responses on the computer portion of the task were measured for both accuracy and response time. Primary caregivers completed questionnaires eliciting demographic information, parental approach to children's emotions and parental expression of emotion in the family. Multivariate Analyses of Covariance controlling for child age and gender were utilized to examine each hypothesis. The findings indicated that while higher rates of DA might be associated with higher error response rates for anger vignette recognition, high DA was associated with lower error response rates for happy and sad facial affect recognition. There was a trend toward significance for higher rates of NSEF to be associated with lower disgust facial affect error percentage rates. Possible explanations for these findings are discussed in context of the limitations of the current study and suggestions are made for future research.

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CHAPTER I

Introduction

The purpose of this study was to examine the relationship between parental socialization of emotion and children's ability to recognize facial expression of emotions. Two aspects of parental socialization of emotion were examined, (a) parents' self-reported expression of emotion in the family and, (b) parental beliefs about children's emotions. The perception of affect is described by Morency and Krauss (1982) as the *decoding* of affect.

This chapter will begin with a general overview of non-verbal decoding skills and facial expressions of emotions. Next, there will be an examination of the types of classification systems used for emotions, and their applicability to adults and children's abilities. A review of the literature on children's development of the ability to recognize emotional expressions, with an emphasis on the importance of the family context, will be followed by the examination of specific aspects of parenting that might influence the development of children's decoding skills. Finally, a rationale for the present study will be presented.

Overview

Recognition of others' feelings, and possibly, therefore, their motives, is instrumental in the successful negotiation of social interactions (Feldman, White, & Lobato, 1982). Social interactions often are guided by the interpretation of nonverbal cues (Feldman et al., 1982). Ekman and Friesen (1969) hypothesized that there are five ways in which nonverbal behavior qualifies the verbal message: "(a) repetition, (b) contradiction, (c) complimentary function (e.g., praise may be accompanied by a smile or

anger by a clenched fist), (d) accentuation, and (e) regulation (e.g., eye contact influences conversational turn-taking)" (Saarni, 1982, p.123). The expression of emotion in voice, gesture, posture, and face allows an observer to interpret how the expresser is feeling, which, in turn, allows for adjustment in responsive behaviours (Levenson, 1994).

Adjustment in responsive behaviours resulting from the decoding of nonverbal information aids in the successful negotiation of social situations (Eisenberg, Cumberland, & Spinard, 1998; Levenson, 1994; Saarni, 1999). While *social competence* can be defined as the capacity to successfully negotiate social interactions, *emotional competence* focuses on an individual's emergence from an emotion-eliciting interaction with a sense of resiliency and self-efficacy (Saarni, 1999). Eisenberg et al. (1998) define *emotional competence* as "an understanding of one's own and other's emotions, the tendency to display emotion in a situationally and culturally appropriate manner, and the ability to inhibit or modulate experienced and expressed emotion and emotionally derived behavior as needed to achieve goals in a socially acceptable manner" (p. 242).

Saarni (1999) identified eight components of emotional competence, including "the ability to discern others' emotions, based on situational and expressive cues that have some degree of cultural consensus as to their emotional meaning" (p.5). The most culturally universal of expressive cues is facial expression of the basic emotions of anger, disgust, fear, happiness, sadness, and surprise (Ekman, Friesen, & Ellsworth, 1982). Thus, the importance of recognizing expressions of emotions on the faces of others has been acknowledged as being an integral component in theories of social and emotional competence.

Emotion can be expressed in many forms, both verbally and nonverbally. Despite the availability of many emotional cues during social interactions, children have been shown to choose facial expressions as their source of emotional information to deduce the expresser's subsequent behaviour and to guide their own behavior (Gross & Ballif, 1991). Camras (1977) observed that kindergarteners involved in a conflict over a desired object hesitated in pursuing the object in response to facial expressions of aggression. Denham (1986) reported that kindergarteners in social interactions responded to peers' expressions of happiness with reinforcing or matching behaviour, ignored expressions of sadness, except for hurt behaviors, and avoided peers expressing anger. These examples illustrate the importance of facial expressions in children's social interactions. It follows, therefore, that especially for young children, the understanding of facial expression is an important component in the development of social and emotional competence.

Classification of Emotions

How, then, are emotions communicated through the face? Darwin (1872) was the first to propose that there are universal facial behaviours associated with each emotion, and was the first to create a judgment procedure based upon this theory. The current wave of research on emotion categories originated with F. Allport in 1924 and was continued by researchers throughout the decades following (see Ekman et al., 1982 for a review). Using still photographs of posed facial behaviour, at least six emotion categories have been found. They are anger, disgust, fear, happiness, sadness, and surprise (Ekman et al., 1982).

Dimension theorists have attempted to classify emotions on continuums, as opposed to discrete classifications of emotions (Lazarus, 1991). Work in this area has

resulted in several classification systems, many of which overlap in characteristics. Wundt (1905) proposed a three factor dimensional model consisting of pleasantness-unpleasantness, calm-excitement, and relaxation-tension (Lazarus, 1991). Zajonc (1980) proposed a simpler model based on the universal, rapid response to emotion that results in the classification of the stimuli as either positive or negative. Lazarus (1966, 1982, 1991) proposed that emotions depend on the individual's appraisal of an experience and that one aspect of primary appraisal is the simple, immediate determination of whether a stimulus is potentially beneficial or harmful.

Underlying most classification systems is the theory that emotions are classified at the most basic level as either negative or positive (Ellsworth, 1994). Some evidence suggests that this type of classification is capable of occurring quickly and without the conscious awareness of the appraiser. Additionally, these classifications appear to influence how quickly and easily people are capable of appraising stimuli by slowing response when the affect is negative. According to this classification system, anger, sadness, fear, and disgust are classified as having negative valences, while happiness has a positive valence. The classification of surprise, defined as the reaction to an event that is either unexpected or contrary to expectation, requires a cognitive appraisal of the situation for a classification of positive or negative valence. For example, an unexpected article hurdling toward one's head might be classified as positive (e.g., a baseball hit into the stands) or negative (e.g., a rock hurdled into a crowd).

Gray's (1982) model of emotion and anxiety, in part, states that a behavioural inhibition system (BIS) continually monitors the environment for cues of punishment (e.g., the unexpected hurdled rock). When a cue is detected, the system halts ongoing

behaviour and focuses attention on the threat (Nigg, 2001). Pratto and John (1991), using a task requiring participants to name the color of ink that negative and positive trait terms (e.g., wicked, rude, confident, sincere) were printed in, reported that response times to negative trait words consistently were longer than to positive trait words. Despite the significant differences in response times, the participants, when later queried, claimed to be unaware of any response time differences and indicated that they had ignored the trait words during the task. Consistent with Gray's (1982) model, Pratto and John postulated that the source of the delayed response times was "*automatic vigilance*, a mechanism that serves to direct attentional capacity to undesirable stimuli" (p. 380). Interpreting their findings from an evolutionary perspective, Pratto and John hypothesized that negative emotions contain beneficial signal values because they signify to the organism the necessity to alter its current state or activity.

An alternate classification system utilizes the tendency for emotions to create a desire to engage or withdraw from the stimuli eliciting the emotion. "Emotions also function to establish the spacing between us and the entities that populate our personal worlds. Acting via ubiquitous processes of approach and avoidance, emotions draw us toward some things and push us away from others" (Levenson, 1984). Gottman (2001) described the engaging emotions to include happiness and anger, and the withdraw emotions to include sadness, fear, and disgust. Once again, the classification of surprise requires a cognitive appraisal of the positive or negative affects of the stimuli.

Decoding of Facial Expressions of Emotions

Adults. Facial discrimination studies with adults indicate that happiness is the most reliably identified affect (Charlesworth & Kreutzer, 1973; Felleman, Barden, Carlson,

Rosenberg, & Masters, 1983; Kirouac & Dore, 1985). Felleman and his colleagues reported that adults were capable of decoding children's spontaneous expressions of emotions with an overall accuracy rate of 98% for happiness, 67% for anger, and 65% for sadness. When the children posed the expressions, adults' overall accuracy rates dropped to 91% for happiness, 58% for anger, and 63% for sadness. These were still significantly greater than chance.

Adults have been found to have longer response times to negative stimuli than to positive (Boucher & Carlson, 1980; Pratto & John, 1991; Purcell, Stewart, Skov, 1998; Stewart, Purcell, & Skov, 1993). Purcell et al. (1998) found that response times were longer for angry faces than happy faces, even when the task did not require a direct judgment of the displayed affect (e.g. identifying the gender of expresser of the facial affect). They theorized that when attention is directed to the face, emotion interferes with the task, causing an Anger Interference Effect (AIE). Purcell and his colleagues (1998) observed a main effect for expresser gender, with female faces taking longer to respond to than male faces. This is consistent with the findings of Felleman et al. (1983) that sex and ethnicity of the children expressing the emotions influenced adults' ability to recognize the expression of anger.

If the gender of the encoder can influence decoders' ability to identify the emotions expressed, does the gender of the adult decoding the facial expressions also affect decoding skills? When examining the effects of gender differences, many researchers have found no differences (Felleman et al., 1983), while others have found females to have superior decoding ability (Ekman & Oster, 1979; Gates, 1923). Thus, when an affect for

decoder gender is found, females are found to be more adept at interpreting facial expressions than males.

A comparison of adults and children's affect decoding skills indicates that while there are many similarities between abilities, decoding skills likely improve over the course of development. Children and adults show similar patterns of accuracy (e.g., greatest recognition of happy faces), but levels of accuracy appear to increase with age. A comprehensive review of the literature on children's affect recognition skills follows.

Children. Research with children indicates that they are able to reliably identify facial expressions of emotions (Gross & Baliff, 1991; Izard, 1971). Like adults, children's abilities to identify facial affect vary between displayed emotions, with anger and sadness being the most difficult for children to accurately identify (Buck, 1975; Camras et al., 1990; Dimitrovsky, 1998, Felleman et al., 1983; Gitter, Mostofsky, & Quincy, 1971; Spector, Levy-Shiff, & Vakil, 1998; Stevens, Charman, & Blair, 2001). Children's difficulties in distinguishing between anger and sadness might indicate a developmental progression of affect recognition that begins with sorting affect into more general categories, such as positive and negative valence, before developing the ability to specifically label individual emotions (Felleman et al., 1983). Further evidence of a developmental increase in decoding abilities can be found in Felleman et al.'s (1983) research in which adults, in general, displayed greater accuracy than children when decoding facial affect, indicating that decoding ability improves with age.

Felleman et al. (1983) also found that, similar to adults, children ages 4- to 5-years most quickly identified facial expressions of happiness, followed by anger, then

sadness. Their response times correlated with their accuracy scores, with longer times being associated with lower accuracy in identifying the displayed emotion.

When examining the effects of the expressers' ethnicity, age, and gender on children's abilities to identify facial affect, some researchers have found no effects (Gitter et al., 1971), while others have found interactions involving one or more expresser variables (Buck, 1984: Carlson, Felleman, & Masters, 1983; Dimitrovsky, Spector, & Levy-Shiff, 2000; Felleman et al. 1983; Gitter, Black, & Mostofsky, 1972; Hall, 1984). When effects for expresser gender are found, they are almost always in favour of female expressers, with the emotions displayed on female faces being more accurately identified than emotions displayed on male faces (Dimitrovsky et al., 2000; Rotter & Rotter, 1988). An exception, however, is found in the research of Purcell el al. (1998) who reported that response times were longer to female expresser faces than to male expresser faces on a task requiring adult participants to classify photographs of facial affect as either angry or happy.

Most researchers have found no differences between the abilities of boys and girls to recognize facial affect (Camras & Allison, 1985; Camras, Grow, & Ribordy, 1983; Camras, Ribordy, Hill, Martino, Spaccarelli, & Stefani 1988; Carlson Felleman, & Masters, 1983; Daly Abromovitch, & Pliner, 1980; Felleman et al., 1983; Gitter et al., 1971; Morency & Krauss, 1982; Stifter & Fox, 1986; Zuckerman & Przewuzman, 1979). When gender differences were reported, the differences were in favour of girls, with girls displaying greater decoding accuracy than boys (Harrigan, 1984; Reichenbach & Masters, 1983; Stoddart, 1985).

Development of Decoding Abilities

In 1877, Darwin, in observing his wife and infant son, theorized that expressions were the first tools of communication used between mother and child. From infancy, children's responses to the expression of different emotions vary (Charlesworth & Kreutzer, 1973), indicating that even infants are capable of some discrimination of emotional expression. By 5 years of age, according to Bradshaw and McKenzie (1971), children have accomplished the ability to categorize facial affect in a style similar to that of adults. These researchers hypothesize that as children develop, they increasingly attend to facial features that convey information about affective states and shape conceptual categories of expressions (Petti, 1997). According to an extensive literature review conducted by Petti (1997), children's ability to recognize facial affect appears to continue to improve up to 10 years of age.

Several theories exist on how the identification of emotions develops. Cognitive theorists posit that cognition is the primary mental process and cause of emotion (Gross & Ballif, 1991). According to these theorists, it is through cognitive gains that children's capabilities to experience and understand emotions develop. Izard (1978), in contrast, hypothesized that emotions are the primary mental process. According to Izard, each individual is born with an innate set of discrete emotions. It is primarily through the process of maturation and secondarily through learning, that particular emotions are refined. Malatesta and Izard (1984) posit that it is through associations between distinct emotions and facial expressions with environmental stimuli (e.g., images, symbols) that understanding of emotions develops (Gross & Ballif, 1991).

While some differences in ability to identify facial expressions might result from biological differences in temperament and intelligence (Coats, Feldman, & Philippot, 1999), most theorists agree that socialization also influences abilities (Halberstadt, 1983). Halberstadt (1986) posits that the family is the primary agent of socialization because it is within the family that children must first learn to communicate their own needs and desires and interpret those of others. Dissimilarities in children's encounters with their environments (e.g., differences in family constitution, cultural norms, and socio-economic status) influence their conceptions and perceptions of emotion signals (Pollack, Cicchetti, Hornung, & Reed, 2000; Reichenbach & Masters, 1983).

Consistent with Halberstadt's theory of the family as the primary agent of socialization, Pollack et al. (2000) found that children's capacity to correctly identify facial expressions of emotions were different between groups of children who were neglected, physically abused, and normally treated. Children who had been neglected were less accurate overall in identifying facial expressions of emotion than physically abused and normally treated children. Physically abused children were less accurate than normally treated children when identifying facial expressions of sadness and disgust. Additionally, physically abused children used a more liberal bias in attributing anger to facial expressions, while neglected children used a more liberal bias in selecting sadness. Pollack et al.'s (2000) findings suggest that parents might influence their children's competence in recognizing emotional expressions.

For the present study, two aspects of family-life will be examined as potential influences on the differences in children's abilities to recognize facial affect: (a) parent's

self-report of emotional expression in the family, and (b) parental beliefs about children's emotions.

Parental Expression of Emotion

While "family life is our first school of emotional learning" (Goleman, 1995, pp. 189-190), families differ in emotional expressiveness. Halberstadt, Crisp, and Eaton (1999) define *expressiveness* as a "persistent pattern or style of exhibiting facial, body, vocal, and verbal expressions that are often but not exclusively emotional in nature" (p. 110). They define *family expressiveness* as the predominant pattern of expressiveness within the family (Halberstadt et al., 1999). Halberstadt et al. (1999) distinguish emotionality from expressiveness, in that *emotionality* is the inner state of feeling, while expressiveness is the outer exhibition of feeling. Individuals seldom express all that they feel, nor do they feel all that they express (Halberstadt, 1991).

Attributions about emotional expressiveness influence how emotions will be expressed in the family (Dunsmore & Halberstadt, 1997). These attributions ascribe beliefs and values, explicitly or implicitly, to emotional expression. They can relate to the value of the expression of emotions, as when an individual holds the belief that the expression of anger is cathartic, or to the value of the emotions themselves, as when an individual holds the belief that anger is dangerous. The attributions also can relate to the regulation of emotion (e.g., teaching sons to inhibit expressions of sadness), the base state of emotion (e.g., whether a person's base state is considered emotionally neutral or emotionally charged), or the use of power through emotional expressiveness (e.g., using negative affect as a form of control) (Dunsmore & Halberstadt, 1997). Thus a family's

beliefs and values about emotions can influence how the family will interact within the group and with others.

Dunsmore and Halberstadt (1997) describe four factors that define a family's typical pattern of emotional expressiveness. These four factors are (a) overall frequency, intensity, and duration of positive and negative emotional expressions, (b) amount of variability across child behaviours, (c) variability in family expressiveness between parents, and (d) variability in expressive styles across settings.

Dunsmore and Halberstadt (1997) observed that families vary in the overall frequency, intensity, and duration of positive and negative emotional expressions. While some families might encourage the expression of all emotions, others might encourage the expression of positive emotions while discouraging the expression of negative emotions, and still others might discourage any strong expression of emotion. According to Dunsmore and Halberstadt's theory, families also vary in their acceptance of specific child behaviours. Some families might accept any display of emotion, from jumping with joy to screaming in anger. Other families might allow children to express emotions, but only in limited ways. For example, a child might be discouraged from screaming when angry, but encouraged to talk about the emotion.

In addition to variation in expressiveness between families, often there is variation within families. Often parents bring different emotional styles to the marriage; one parent might be highly expressive while the other parent might inhibit emotional expressiveness. Additionally, parents might vary in their expressive styles across settings. Some parents might be consistent in their acceptance of expressiveness across settings, while other parents might encourage the expression of emotions within the home, but discourage it in

public. It is the combination of these varying factors that define a family's typical pattern of emotional expressiveness (Dunsmore & Halberstadt, 1997).

Daly et al. (1980) described two plausible mechanisms by which parental expressiveness might affect children's ability to understand others' facial expressions. One theory posits that children of more emotionally expressive parents will have a more emotionally rich environment in which the greater exposure will result in increased competence in understanding of others' emotional expression. The second theory posits that children of less emotionally expressive parents will develop an increased competence in understanding of others' emotional expression because they will learn the meaning behind subtle nuances of expression. Halberstadt et al. (1999) found support in their review of the literature for the first theory in younger children and support for the second theory in college students. They theorized that having highly expressive parents facilitates the early development of understanding of emotion, but with time, children of less emotionally expressive parents develop a greater advantage in the understanding of others' emotional expression.

It should be noted, however, that despite the generally positive relationship between maternal expressivity and children's decoding of affect (Camras et al., 1988, Daly et al., 1980), there is evidence that intense display of negative affect directed at the child is a negative predictor of children's affect recognition ability (Camras, Ribordy, Hill, Martino, Sachs, Spaccarelli, & Stefani, 1990). Hence, when parental expressiveness is examined as a potential influence on children's affect recognition abilities, it becomes crucial that both positive and negative parental expressiveness be examined as unique variables.

Parental Approaches to Children's Emotions

Not only does parental expressiveness potentially influence children's decoding abilities, it appears that parental approaches to children's emotions also influence children's abilities (Gottman, 1997; Gottman, Katz, & Hooven, 1996). In his research on *meta-emotion*, one's feelings about feelings, Gottman (1997) theorized that parents socialize emotions through their awareness of their own and their children's emotions, their responses to their children's emotions, and their reasoning about those responses. Using these constructs, Gottman identified four approaches to parenting based upon parents' attributions about the value and expression of emotions: (a) Disapproving (DA), (b) Dismissing (DS), (c) Laissez-Faire (LF), and (d) Emotion-Coaching (EC).

When parents use a Disapproving (DA) approach, they are being intolerant and critical of children's displays of negative emotions and may reprimand or punish emotional expression (Gottman, 1997). Gottman describes parents using this approach as equating expressions of emotion with misconduct, attempted manipulation, or weakness. According to Gottman, children whose parents often use the DA approach learn that their feelings are inappropriate and invalid. As a result, these children might learn to inhibit and avoid emotional expression, which could result in fewer opportunities to recognize and label emotional reactions in others.

When parents use a Dismissing (DS) approach, they also are being intolerant of their children's emotions. They often disregard, ignore, or trivialize children's negative emotions (Gottman, 1997). Gottman describes parents using this approach as feeling "uncomfortable, fearful, anxious, annoyed, hurt, or overwhelmed" (1997, p.50) by their children's feelings. As a result, they attempt to disengage from, ignore, or minimize their

children's expressions of emotions. Parents' minimization of children's emotions has been associated with children's avoidant coping techniques (Eisenberg, Fabes, Shepard, Murphy, & Reiser, 1999), which could have a negative impact on children's abilities to recognize and label emotions.

When using a Laissez-faire (LF) approach, parents are accepting of children's emotions and are empathetic, but offer no guidance or limits on children's behaviour (Gottman, 1997). Parents who are using the LF approach are likely to tolerate or encourage their children's emotional expressiveness; however, they are unlikely to educate their children about emotions. Gottman described the result of this parenting approach as a decrease in the child's ability to regulate emotions, which could, in turn, decrease socialization skills. Decreased socialization skills could result in fewer opportunities to interact with others and practice emotion-decoding skills. Hence, while children of parents who often use the LF approach might be better at decoding facial expressions than children of parents who often engage in the DA and DS approaches, the lack of guidance in this approach might hinder these children's decoding abilities when compared to those of parents who often engage in the Emotion-Coaching approach.

When using an Emotion-Coaching (EC) approach, parents are behaving much like when using a LF approach. Both approaches are accepting of children's expression of emotion, but in contrast to the LF approach, the EC approach involves offering emotional guidance and limits to children's expressions. Parents who are using the EC approach are more aware of their children's emotions, recognize emotion as potential for intimacy and learning, listen empathetically, validate emotions, help their children label emotions, and set behavioural limits while exploring strategies for resolution (Gottman, 1997). Children

of parents who utilize the EC approach are better able to moderate their arousal levels, which allows for higher quality peer interactions, less negative emotionality, and fewer behaviour problems (Gottman et al., 1996). In addition, according to Gottman's theory, these children are better at understanding and recognizing the emotions of others (Gottman, 1997).

One aspect of Gottman's EC approach to parenting involves listening to children's expressions of emotions and responding empathically. Parent-child communication about emotions has been linked to children's increased understanding of emotional expression (Camras et al., 1990; Gottman, 1997). Camras et al. (1990) found that children raised in families where feeling-state talk was common were better able to recognize the emotions of unfamiliar adults than children who were raised in families where feeling-state talk was less common. Thus, the more accepting and encouraging parents are of their children's emotions, the more aware children might be of other's emotions.

Current Study

The purpose of the current study was to examine how parenting variables are related to children's ability to quickly and accurately identify others' expressions of emotions. There were two main hypotheses that were examined.

Hypothesis 1: Effects of Parenting Approach

Hypothesis 1 posited that variance in children's response error rates when identifying affect from brief emotion-eliciting vignettes and photographs of facial expressions could be explained by examining parents' self-report of acceptance of their children's emotions. It was hypothesized that parents who are more accepting of their

children's emotions would have children who are more capable of understanding and recognizing emotions.

Hypothesis 2: Effects of Parent's Self-Expressiveness in the Family

The second hypothesis posited that variance in children's response error rates when identifying affect from brief emotion-eliciting vignettes and photographs of facial expressions could be explained by examining parents' self-report of expressiveness in the family. As evidenced in prior research (Halberstadt et al., 1999), greater parental expressiveness is correlated with children's increased understanding of emotions. It was hypothesized that the more expressive parents reported being, the more practice their children would receive in decoding affect, which would result in an increased ability to recognize others' emotions.

CHAPTER II

Method

Participants

The participants in this study were 30 children, drawn from a population of 5- to 10- year-old males (n = 15) and females (n = 15), along with one parent for each child participant. To provide a diverse sample of children and parents, participants were recruited from both Windsor and the metropolitan Detroit area. In Windsor, parents of children ages 5 to 10 were recruited from a University of Windsor participant pool and asked to participate with their children. Fourteen parents were identified and contacted in the University of Windsor's participant pool. Of the fourteen, nine participated in the study while five declined participation. In metropolitan Detroit, participants were recruited from the after-school care programs of four elementary schools in a suburban school district. Approximately 300 recruitment fliers were made available to the parents of the children in the after-school programs. Twenty-three fliers were completed and returned. Of the twenty-three, 21 participated in the study. One respondent declined participation and one respondent had a child too old to participate.

The child participants were equally divided by gender, with 15 male and 15 female participants. Twenty-three (76.7%) of the child participants were reported by their parents to be Caucasian, 6 (20%) reported multiple ethnic categories, and 1 (3.3%) reported the child to be of Native-Aboriginal descent. Twenty-three (73.3%) of the children were being raised in a two-parent household, (13.3%) 4 were being raised by their mothers, 1(3.3%) by their fathers, and 2 (6.7%) were being raised in a shared-custody arrangement between parents. Three (10%) of the children were reported to have a diagnosed learning

disability while 27 (90%) children were reported to not have been diagnosed with a learning disability (See Table 1 for Participant Characteristics data).

Twenty-two (73.3%) parents reported being married, 7 (23.3%) reported being divorced, and 1 (3.3%) reported currently living with a partner. The majority of mothers (n = 16, 53.3%) were reported to have a college or university degree and another 5 (16.7%) reported having attended graduate or professional school. Of the 29 who reported father's highest level of education, 9 (30.0%) were reported to have a college or university degree, and 9 (30.0%) reported having attended graduate or professional school. Of the 30 participants, 25 chose to report family income bracket. For ease of interpretation, reports of family income were converted to Canadian dollars when reported in U.S. dollars. Of those reporting, 2 (6.7%) declared total annual family income of less than $20,000, 2 (6.7%) $21,000 to $40,000, 7 (23.3%) $41,000 to $60,000, 1 (3.3%) $61,000 to $80,000, and 13 (43.3%) above $100,000 (See Table 1 for Participant Characteristics data).

Measures

Demographic information: Background information form. For each child participant, the primary caregiver completed a questionnaire designed to elicit basic demographic characteristics such as child's age, gender, number of siblings, and birth order. Additionally, information regarding the parents' marital status, education level, employment, and ethnicity was requested (see Appendix A). See Table 1 for demographic information endorsed by the parent participants.

Parental expressiveness; The self-expressiveness in the family context questionnaire (SEFQ; Halberstadt, 1995). The SEFQ was designed to measure the likelihood of the respondent behaving in an expressive manner within the context of the

Table 1

Summary of Demographic Characteristics of Participants (N= 30)

Variable	n (Percent of Total)
Child Gender	
Male	15 (50)
Female	15 (50)
Child Age	
5	2 (6.7)
6	6 (20.0)
7	8 (26.7)
8	4 (13.3)
9	4 (13.3)
10	6 (20.0)
Child 's Birth Order	
Ist	14 (46.7)
2nd	7 (23.3)
3rd	8 (26.7)
4th	1 (3.3)
Child's Ethnicity/Cultural Identify	
Caucasian	23 (76.7)
African-Canadian/African-American	0
Hispanic	0
Asian/Pacific	0
Native Aboriginal (Canadian)/ Native American	1 (3.3)
Other (Multiple Categories Endorsed)	6 (20.0)
Child Diagnosed With a Learning Disability	
Yes	3 (10.0)
No	27 (90.0)

Table 1 (Continued)

Variable	n (Percent of Total)
Country of Residence	
Canada	8 (26.7)
USA	22 (73.3)
Parents' Current Marital Status	
Married	22 (73.3)
Single	0
Divorced	7 (23.3)
Separated	0
Widowed	0
Living Together	1 (3.3)
Child's Current Family Composition	
Two-Parent Family	23 (76.7)
Single-Parent Family (Raised by Mother)	4 (13.3)
Single-Parent Family (Raised by Father)	1 (3.3)
Shared Custody Between Mother and Father	2 (6.7)
Total Family Income Bracket (Canadian Dollar)[b]	
Less than $20,000	2 (6.7)
$21,000 - $40,000	2 (6.7)
$41,000 - $60,000	7 (23.3)
$61,000 - $80,000	1 (3.3)
$81,000 - $100,000	0
Over $100,000	13 (43.3)

Table 1 (Continued)

Variable	n (Percent of Total)
Mother's Highest Level of Schooling	
Completed Grade School	0
High School Graduate or Equivalent	1 (3.3)
Post High School -Trade/ Technical School	1 (3.3)
Some College or University	7 (23.3)
College or University Graduate	16 (53.3)
Graduate and/or Professional School	5 (16.7)
Father's Highest Level of Schooling[a]	
Completed Grade School	1 (3.3)
High School Graduate or Equivalent	4 (13.3)
Post High School -Trade/ Technical School	1 (3.3)
Some College or University	5 (16.7)
College or University Graduate	9 (30.0)
Graduate and/or Professional School	9 (30.0)

[a] $n = 29$

[b] $n = 25$

family (Halberstadt, 1995). The measure has four subscales that measure positive-negative expression and dominant-submissive expression (positive-dominant, positive-submissive, negative-dominant, and negative-submissive). Each subscale has 10 items, for a total of 40 items, each scored using a 9-point Likert scale ranging from Not At All Frequently (1) to Very Frequently (9).

Using the positive-negative subscales and the full scale, Halberstadt, Cassidy, Stifter, Parke, and Fox (1995) reported good internal consistency of .94 for the positive scale, .92 for the negative scale, and .93 for the total scale. Duff (2000) reported internal consistency of .92, .77, and .87 for the positive, negative, and total scales, respectively.

Consistent with reported internal consistencies of Halberstadt and her colleagues (1995) and Duff (2000), good internal consistency was found for the current study. Analyses of internal consistency were performed using coefficient alpha (Cronbach) for the total positive (TP), and total negative (TN) scale and overall total scales of the Self Expressiveness in the Family Questionnaire (SEFQ). All scales of the SEFQ were high with alpha coefficients of .87 (TP), .87 (TN) and .90 for the total scale.

Parental beliefs about children's emotions: Parenting styles self-test (PSST; Gottman, 1997, as modified by Hakim-Larson & Lee, 1999). The PSST was designed to elicit information regarding parents' beliefs about emotions in children (Gottman, 1997, as modified by Hakim-Larson & Lee, 1999). This self-report questionnaire consists of eighty-one questions relating to parents' beliefs about anger, sadness, and fear in themselves and their children. Parents endorse items pertaining to four parenting approaches, Emotion Coaching (EC), Laissez-faire (LF), Dismissing (DS), and Disapproving (DA). Each question exemplifies a belief prevalent to one of the four

parenting approaches, and a 5-point scale, ranging from always false (1) to always true (5), allows for varying degrees of endorsement for each item. Scores were totaled and averaged for each of the four parenting approaches, so that the extent to which parents endorsed each parenting approach could be obtained.

The PSST (1999), has been shown to be a valid and reliable measure of parental beliefs about children's emotions. Lee (1999), using the original true/false format, reported internal consistency for the 4 scales of 0.62 for EC, .33 for LF, .81 for Disapproving DA, and .43 for DS. Additionally, Lee (1999) reported a test-retest reliability of r = .43 (EC), .62 (LF), .86 (DA), and .87 (DS), with $p < .001$. A follow-up study using the Lee and Hakim-Larson (1999) revised 5-point scale format of the PSST reported an increase in internal consistency to good or moderate for every scale with Alpha equal to .83 for EC, .60 for LF, .91 for DA, and .82 for DS (Duff, 2000).

For the current study, analyses of internal consistency were performed using coefficient alpha (Cronbach) for the emotion coaching (EC), dismissing (DS), disapproving (DA), and laissez-faire (LF) scales of the Parenting Styles Self-Test (PSST) High internal consistency was found for three of the four PSST scales with alpha coefficients of .81 (EC), .67 (DS), and .87 (DA). These results were similar to Duff's (2000) report of internal consistency. However, similar to Lee's (1999) report using the original true-false format of internal consistency for the LF measure of .33, the laissez-faire (LF) scale in the current study had a poor internal consistency of .23. As a result, the LF scale was not used in any of the statistical analyses.

Parent's tendency to respond in a socially desirable manner: Marlowe-Crowne social desirability scale (MCSDS; Reynolds, 1982). This scale was designed to measure

the respondent's tendency to respond in a manner that is socially desirable, thus potentially over-reporting perceived positive qualities and under-reporting perceived negative qualities. The Marlowe-Crowne Social Desirability Scale consists of 33 True or False items. This widely used scale has been shown to have good internal consistency, with alpha values ranging from .73 to .88, as well as a one-month test-retest reliability of .88 (Reynolds, 1982). For the current study, analysis of internal consistency using coefficient alpha (Cronbach) was good with an alpha level of .89. This measure was examined in relation to the PSST and SEFQ questionnaires utilizing zero-order correlation analyses. The higher the correlations, the more likely parents' responses were being influenced by their desires to make a favourable impression.

Measure of affect identification: Vignettes for emotion recognition research and affective therapy with children (Ribordy, Camras, Stefani, & Spaccarelli, 1988). These 30 vignettes briefly describe situations that are likely to provoke one of six emotions (fear, sadness, anger, surprise, disgust, and happiness) in children. Ribordy et al. (1988) found the vignettes to elicit the intended emotion in 5- and 6-year-olds from 60 to 93 percent of the time, rates greater than chance. For the current analysis, error percentage rates were calculated for each emotion with any response other than the target emotion scored as incorrect. Mean error percentage rates ranged from a low of 8.00 for fear vignettes to a high of 72.67 percent for surprise vignettes (see Table 2).

Facial affect recognition task: Japanese and Caucasian facial expressions of emotions (JACFEE; Matsumoto & Ekman 1988). The stimuli were drawn from a set of color photographs of facial affect, Matsumoto and Ekman's Japanese and Caucasian Facial Expressions of Emotions (JACFEE; 1988). The JACFEE was designed by

Table 2

Descriptive Statistics for Children's Vignette Recognition (N = 30)

	Vignette Error Percentage Rates (N = 30)			
Emotion	Minimum (%)	Maximum (%)	Mean (%)	Standard Deviation (%)
Anger	0	100	46.00	29.78
Disgust	0	100	58.67	31.48
Fear	0	60	8.00	16.27
Happy	0	100	15.33	30.48
Sad	0	60	11.33	18.71
Surprise	0	100	72.67	29.47

photographing over 100 participants who posed in various facial expressions. A subset of the photographs was selected and coded using Ekman and Friesen's (1978) Facial Action Coding System (FACS), to create a final pool of 56 photographs, eight each of happiness, sadness, fear, surprise, disgust, anger, and contempt. Of the eight photographs of each emotion, there are two each of Japanese males, Japanese females, Caucasian males, and Caucasian females (Bieh, Matsumoto, Ekman, Hearn, Heider, Kudoh, & Ton, 1997). Biehl et al. (1997) reported good reliability for the measure, with each photograph accurately identified 60 and 95 percent of the time, a rate significantly greater than chance. In addition, no significant effects for the influence of presentation order of stimuli on accuracy of judgments were observed.

While the JACFEE was created with two ethnic groups, the current study was not designed to examine the scope of ethnic influences on facial affect recognition, nor was a substantial Japanese participant group anticipated. Consequently, the current study limited the data set to the Caucasian faces only. This allowed for 4 photographs for anger, disgust, fear, happiness, sadness, and surprise to be utilized, for a total of 24 photographs. The child participants were asked to name the affect being expressed, and each response was coded for accuracy (expressed as error percentage rates) and response time. Mean error percentage rates ranged from a low of 6.46 for happiness facial affect to a high of 80.21 percent for disgust facial affect (see Table 3). Table 4 displays the current child participants' mean online response times for each emotion, which ranged from a low of 587.17 ms for happiness to a high of 927.43 ms for surprise.

Table 3

Descriptive Statistics for Children's Facial Affect Recognition Error Percentage Rates (N = 30)

	Facial Affect Error Percentage Rates (N = 30)			
Emotion	Minimum (%)	Maximum (%)	Mean (%)	Standard Deviation (%)
Anger	0	94	16.47	20.70
Disgust	6	100	80.21	33.24
Fear	0	88	33.13	25.22
Happy	0	38	6.46	11.43
Sad	0	69	20.83	19.85
Surprise	0	100	47.92	37.83

Table 4

Descriptive Statistics for Children's Facial Affect Recognition Online Response Times by Emotion (N = 30)

	Minimum (ms)	Maximum (ms)	Mean (ms)	Std. Deviation (ms)
Anger	453.75	1205.71	732.02	204.51
Disgust	531.29	1715.13	908.10	248.70
Fear	423.17	1957.71	908.23	295.92
Happy	406.00	916.50	587.17	136.50
Sad	440.25	1423.50	779.91	275.05
Surprise	552.71	2139.00	927.43	343.35

Apparatus

For the computer portion of the study, a Compaq Evo N600C laptop personal computer with an Intel Pentium III processor with 1200 MHz mobile CPU, and 256 MB RAM was used running the Windows XP operating system. The software package utilized was DirectRT for Windows experimental lab software. A Logitech First Wheel mouse was employed to record correct and incorrect responses, allowing for 1 millisecond resolution. A Labtec Verse-514 desk microphone was connected to the computer's microphone jack and placed 16 cm from the participant. The DirectRT software recorded vocal reaction times at a 1-millisecond resolution plus the refresh rate of the screen.

Procedure

After receiving clearance from the University of Windsor Ethics Review Board, parents were recruited for participation. Parents who expressed an interest were contacted and the nature of the study was briefly explained. After receiving verbal assent from interested parents, parents were supplied an information form and a written consent form for both their participation (see Appendices H & L) and their children's (see Appendices G & I). Parents of children who participated during after-school care programs completed the questionnaire packet (background questionnaire, SEFQ, PSST, and MCSDS) at home and returned it in a sealed envelope before the child participated. University of Windsor parent participants completed the packet at the university while the researcher and child met in an adjoining room.

Each child met one-on-one with the researcher. The child was given a brief description of the tasks and asked to assent to participation (See Appendix K). After assent was obtained (see Appendix N for script), the procedure began with the Vignettes

for Emotion Research task, during which the child was read the vignettes and asked to identify the emotions elicited. Both gender of the child in the vignettes and vignette order were randomized. The open-ended responses to the vignettes were used as a measure of children's ability to accurately identify and verbalize the emotion being elicited. Additionally, the children's responses were used to identify the labels used to describe the affect. For example, some children labeled "anger" as "mad" and "disgust" as "gross". These labels, when correctly used in an emotion-eliciting vignette, were considered accurate responses during the Facial Affect Recognition portion of the study.

The computer portion of the research design was based upon a format used by Lichacz, Herdman, LeFevre, and Baird (1999), utilizing an online experimental condition and a delayed naming condition. This design was chosen because it allowed for the examination of response times with the removal of the voicing artifacts (e.g., ability of microphone to pick up different word sounds) that can confound the results of vocal response time designs. The design included eighteen practice trials and 48 experimental trials presented in both the online experimental condition and the delayed naming condition for a total of 132 trials. The trials in each condition were presented in random order, with each participant receiving a different random order for each condition. The delayed naming condition response time was subtracted from the online naming condition response times creating a difference score for statistical analysis.

For the online naming portion of the task, participants were instructed to verbalize as quickly and as accurately as possible, the emotion expressed on the photograph immediately upon viewing the stimuli. The task was designed so that participants would fixate on a plus sign (+) appearing in the center of the computer monitor. The researcher

initiated each trial by pressing a mouse key. The plus sign (+) disappeared immediately and the stimulus photograph appeared. The stimulus then remained on the monitor until a verbal response was detected. During both the online and delayed conditions, the experimenter sat unobtrusively behind the participant and coded each response for accuracy.

The delayed-naming condition utilized the same stimuli as the online naming response. The researcher still initiated each trial by pressing a mouse key which caused the plus sign (+) to disappear and be replaced 600 ms later by a stimulus photograph that remained on the monitor for 1,000 ms. Instead of an immediate response to the stimulus, however, participants were instructed to wait until the photograph was replaced by a small circle (o), then to respond as quickly and as accurately as possible. The circle (o) remained on the screen until a verbal response was detected.

Many of the children found the delayed task, which required waiting 1,500 ms to respond until the stimulus disappeared from the computer screen and was replaced by a circle, too difficult because they were unable to inhibit their immediate responses. Responding before the circle (o) appeared resulted either in the end of uninhibited responses being recorded and measured or in second responses being recorded and measured after a prolonged delay. As a result, the delayed response mean times were deemed unreliable measures and were not used in the final analyses.

Upon completion of the tasks, each child chose a small gift. Parents were supplied with debriefing forms with additional information about the study including contact information for any further questions or comments (see Appendix M).

CHAPTER III

Results

All analyses were performed using Statistical Procedures for Social Sciences 10 (SPSS 10). Prior to analyses, data were analyzed and reviewed for outliers. Response times greater than two standard deviations from the mean were eliminated from the data set. The results of analyses are divided into two sections. The Preliminary Analyses contain an examination of the variables, while the Main Analyses consist of the testing of hypotheses based on the reduced data set.

Preliminary Analyses

Examination of Participant Characteristic Effects

Because prior research had indicated that children's age (Felleman et al., 1983) and gender (Ekman & Oster, 1979; Gates, 1923; Harrigan, 1984; Reichenbach & Masters, 1983; Stoddart, 1985) might influence the results of the analyses, an examination of the potential effects of these variables was performed. Independent samples t-tests for equality of means indicated both a difference by gender for happy vignette error percentage rate (see Table 5) and a trend toward a significant difference for happy facial affect error percentage rate (see Table 6). No facial affect recognition response time differences by gender were observed (see Appendix J).

Child age was significantly correlated with vignette error percentage rates of disgust and sadness (see Table 7). Child age also was significantly correlated with facial affect error percentage rates of disgust and surprise (see Table 8). For facial affect

Table 5

Mean Vignette Error Percentage Rate by Emotion for Male and Female Child Participants (N= 30)

Emotion	Male $n = 15$	Female $n = 15$	Mean Difference	t
Anger	42.67	49.33	-6.67	-.61
	(27.12)	(32.83)		
Disgust	57.33	60.00	-2.67	-.23
	(31.95)	(32.07)		
Fear	12.00	4.00	8.00	1.37
	(21.11)	(8.28)		
Happy	30.67	0.00	30.67	3.15**
	(37.70)	(0.00)		
Sad	14.67	8.00	6.67	.98
	(19.22)	(18.21)		
Surprise	70.67	74.67	-4.00	-.37
	(26.04)	(33.35)		

**$p < .01$

Table 6

Mean Facial Affect Recognition Error Percentage Rates by Emotion for Male and Female Child Participants (N= 30)

Emotion	Male $n = 15$	Female $n = 15$	Mean Difference	t
Anger	16.25	16.68	-.43	-.43
	(14.90)	(25.79)		
Disgust	85.00	75.42	9.58	-.23
	(29.10)	(37.31)		
Fear	40.42	25.83	14.58	1.37
	(24.65)	(24.42)		
Happy	10.42	2.50	7.92	3.15**
	(13.08)	(8.11)		
Sad	24.58	17.08	7.50	.98
	(22.96)	(16.10)		
Surprise	41.67	54.17	-12.50	-.37
	(36.65)	(39.22)		

**$p < .01$

Table 7

Zero-order Correlation Coefficients between Child Age and Vignette Error Percentage Rate by Emotion (N = 30)

Variable	1	2	3	4	5	6	7
1. Child Age	-						
2. Anger	.51**	-					
3. Disgust	-.38*	.33	-				
4. Fear	-.26	.21	.05	-			
5. Happy	.15	.02	-.35^{t}	.22	-		
6. Sad	.38*	-.00	-.14	-.04	.27*	-	
7. Surprise	-.05	.21	-.06	.27	-.09	-.02	-

* $p < .05$, ** $p < .01$, $^{t}p < .10$

Table 8

Zero-order Correlation Coefficients between Child Age and Facial Affect Recognition Error Percentage Rates by Emotion (N = 30)

Variable	1	2	3	4	5	6	7
1. Child Age	-						
2. Anger	.02	-					
3. Disgust	-.36*	-.07	-				
4. Fear	-.31^{t}	-.09	.18	-			
5. Happy	-.03	.24	.15	.27	-		
6. Sad	-.29	.32	.23	.32	.43*	-	
7. Surprise	-.48**	.11	.26	-.35	-.03	.20	-

* $p < .05$, ** $p < .01$, $^{t}p < .10$

recognition response times, age was significantly correlated with fear response time (see Table 9). When the dependent variable of facial affect recognition response time is further subdivided by male and female expressers of emotions, age is significantly correlated with female expresser of fear, but not male expresser of fear (see Table 10). As a result of the preliminary analyses, age and gender were determined to be covariates in the main data analyses.

Dependent Variables

Children's ability to recognize emotions was measured in several ways. For vignette recognition, error percentage rates were utilized. For facial affect recognition, both error percentage rates and response times were measured. An examination of the zero-order correlations of the dependent variables indicated a significant correlation between children's facial affect error percentage rate and response times (see Table 11). This indicates that, in general, children responded more quickly when they responded correctly. Because previous research (Dimitrovsky et al., 2000; Purcell el al., 1998; Rotter & Rotter, 1988) has indicated that expresser gender might influence response times, the facial affect recognition response time variable was examined with and without the variable being split by expresser gender. For all dependent variables, z-score transformations were performed to create standard scores.

Independent Variables

The goal of the current study was to examine the effects of parental characteristics on children's ability to recognize emotions. Parenting characteristics were not directly assessed, however, as a result of the use of self-report measures for the predictor variables. Because self-report measures often are affected by respondents' desire to appear socially

Table 9

Zero-order Correlation Coefficients between Child Age and Facial Affect Recognition Response Times by Emotion (N = 30)

Variable	1	2	3	4	5	6	7
1. Child Age	-						
2. Anger	-.11	-					
3. Disgust	.08	.28	-				
4. Fear	-.42*	.17	.17	-			
5. Happy	-.17	.45*	.67**	.57**	-		
6. Sad	-.32^{t}	.17	.16	.49**	.51**	-	
7. Surprise	-.15	.41*	.41*	.21	.35^{t}	.30	-

* $p < .05$, ** $p < .01$, $^{t}p < .10$

Table 10

Zero-order Correlation Coefficients between Child Age and Facial Affect Recognition Response Times by Emotion (N = 30)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Child Age	-												
2. Anger Male Expresser	-.06	-											
3. Anger Female Expresser	-.11	.44*	-										
4. Disgust Male Expresser	.16	.22	.07	-									
5. Disgust Female Expresser	-.11	.15	.25	-.03	-								
6. Fear Male Expresser	-.17	.11	.06	.15	.08	-							
7. Fear Female Expresser	-.56**	.16	.11	-.13	.40*	.29	-						
8. Happy Male Expresser	.05	.26	.14	.65**	.30	.56**	.13	-					
9. Happy Female Expresser	-.31^{t}	.40*	.41*	.19	.38*	.27	.42*	.38*	-				
10. Sad Male Expresser	-.33^{t}	.22	.23	.17	.51**	.42*	.44*	.63**	.49**	-			
11.Sad Female Expresser	-.27	.00	.20	-.03	.10	.30	.40*	.36^{t}	.18	.56**	-		
12. Surprise Male Expresser	-.08	.18	.50**	.35^{t}	.24	.13	-.06	.36*	.05	.19	.19	-	
13. Surprise Female Expresser	-.17	.07	.38*	-.04	.20	.26	.10	.17	.24	.37*	.12	.30	-

* $p < .05$, ** $p < .01$, $^{t}p < .10$

Table 11

Zero-Order Correlations between Dependent Measures of Affect Recognition by Emotion (N= 30)

Dependent Measure	1	2	3
ANGER			
1. Vignette Error Percentage Rate	-		
2. Facial Affect Error Percentage Rate	-.29	-	
3. Facial Affect Response Time	-.01	.67**	-
DISGUST			
1. Vignette Error Percentage Rate	-		
2. Facial Affect Error Percentage Rate	.18	-	
3. Facial Affect Response Time	-.19	.17	-
FEAR			
1. Vignette Error Percentage Rate	-		
2. Facial Affect Error Percentage Rate	13	-	
3. Facial Affect Response Time	.11	.72**	-
HAPPY			
1. Vignette Error Percentage Rate	-		
2. Facial Affect Error Percentage Rate	.03	-	
3. Facial Affect Response Time	-.01	.54**	-
SAD			
1. Vignette Error Percentage Rate	-		
2. Facial Affect Error Percentage Rate	-.19	-	
3. Facial Affect Response Time	-.22	.45*	-
SURPRISE			
1. Vignette Error Percentage Rate	-		
2. Facial Affect Error Percentage Rate	.34*	-	
3. Facial Affect Response Time	.32	.07	-

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

desirable, assessing the potential influence of respondents' tendency to respond in a socially desirable manner is recommended. A Pearson product correlation matrix indicated that the tendency to respond in a socially desirable manner was related with the EC scale of the PSST (See Table 12). In contrast to the statistically significant correlation of EC and the social desirability scale, no other correlations with this variable were statistically significant. To minimize the influence of social desirability, the Disapproving Parenting Approach (DA) scale was used as the measure of parenting approach.

Parenting DA scores ranged from a low of 1.18 to a high of 3.00 (M = 2.22, SD = .46). Parents' scores were split at the median of 2.28, and a dichotomous parenting variable (Low/High Disapproving parenting) was created with 15 child-parent dyads in each group. The Low DA group consisted of 7 male and 8 female children who ranged in age from 6 to 10 years. The High DA group consisted of 8 male and 7 female children who ranged in age from 5 to 10 years.

Maternal expressiveness generally is positively related to children's recognition of affect (Camras et al., 1988; Daly et al., 1980), however, some evidence exists indicating that intense negative affect is a negative predictor of children's affect recognition skill (Camras, L.A., Ribordy, S., Hill, J., Martino, S. Sachs, V., Spaccarelli, S. & Stefani, R., 1990). Thus, both positive and negative self-expressiveness in the family variables were considered for the main analyses. Zero-order correlations were performed to determine if there were significant relationships between either of the scales and the dependent variables (see Table 13). Negative Self-Expressiveness in the Family (NSEF) was correlated with happy and sad vignette error percentage rates, but no relationships were

Table 12

Zero-order Correlation Coefficients of Independent Variables (N = 30)

Variable	1	2	3	4	5	6	7
1. Marlowe-Crowne Desirability	-						
2. Emotion Coaching	.49**	-					
3. Dismissing	.25	.02	-				
4. Disapproving	.03	-.03	.75**	-			
5. Laissez-Faire	-.16	.24	.22	.46*	-		
6. Negative Self-Expressiveness	-.16	.13	.19	.37*	.22	-	
7. Positive Self-Expressiveness	.16	.21	.48**	.34	-.04	.43*	-

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

Table 13

Zero-order Correlation Coefficients between Positive and Negative Self-Expressiveness in the Family (SEF) and Dependent Variables (N = 30)

	Positive SEF	Negative SEF
Vignette Error Percentage Rate		
Anger	.30	.33[t]
Disgust	.14	-.04
Fear	.10	.02
Happy	-.01	.36[t]
Sad	-.00	.38*
Surprise	-.10	-.29
Facial Affect Error Percentage Rate		
Anger	.15	-.11
Disgust	.15	-.24
Fear	.12	-.11
Happy	.08	.02
Sad	.12	-.25
Surprise	.22	.11
Facial Affect Error Response Time		
Anger	.35[t]	-.11
Disgust	-.05	-.07
Fear	.16	.07
Happy	.12	-.02
Sad	.02	-.01
Surprise	-.10	.01

* $p < .05$, [t] $p < .10$

observed for positive expressiveness. As a result, negative self-expressiveness in the family (NSEF) was further analyzed using the variable of parental expressiveness.

Parenting NSEF scores ranged from a low of 43 to a high of 139 (M = 95.21, SD = 20.70). Parents' scores were split at the median of 95.00, and a dichotomous parenting variable (Low/High NSEF) was created with 15 child-parent dyads in each group. The Low NSEF group consisted of 7 male and 8 female children who ranged in age from 6 to 10 years. The High NSEF group consisted of 8 male and 7 female children who ranged in age from 5 to 10 years.

Main Data Analyses

Hypothesis 1: The Effects of Parenting Approach

The first hypothesis conceived that differences in children's response error rates when identifying affect from brief emotion-eliciting vignettes and photographs of facial expressions could be explained by examining parents' self-report of acceptance of their children's emotions. It was predicted that parenting approach would influence children's ability to accurately identify other's emotions.

To test the hypothesis, four between-subjects Multivariate Analysis of Covariance (MANCOVA) were performed. For each MANCOVA, the independent variable was disapproving parenting approach (DA Low/High) with child age and gender as covariates. The first analysis utilized a 2 x 6 MANCOVA to examine the effects of DA on the children's vignette error percentage rates. The second analysis utilized a 2 x 6 MANCOVA to examine the effects of DA on the children's facial affect recognition error percentage rates. The third analysis utilized a 2 x 6 MANCOVA to examine the effects of DA on the children's facial affect recognition response times. For the final analysis, to

explore the possibility that parenting approach's influence on children's affect recognition might vary by the gender of the expresser, a 2 x 12 MANCOVA with the dependent variable divided by both emotion and gender of expresser (e.g., Anger Male Expresser, Anger Female Expresser) was performed.

Because the influence of parental acceptance might vary by emotion, with each MANCOVA, univariate analyses were utilized to examine the influence of the covariates and the independent variable on each one of the six emotions. For the fourth analysis, the univariate analyses allowed for an examination of the influence of the covariates and the independent variable on each of the male-expressed and female-expressed emotions. Table 14 provides a summary of all analyses with significant effects noted by asterisks.

Vignette Recognition Error Percentage Rates. Table 15 displays the multivariate and univariate analyses of covariance of DA on vignette error percentage rates. Multivariate analyses indicated a main effect for age but not gender or DA for children's vignette recognition. Univariate analyses allowed for an examination of the effects of age, gender, and DA on each emotion. See Table 16 for mean vignette error percentage rates by emotion for children of parents with Low and High DA after age and gender were controlled.

For the anger, the disgust, and the sad vignettes, univariate analyses on error percentage rates indicated that while age contributed variance, gender did not. In contrast, the same analyses for the happy vignettes revealed an effect for gender, but not age. For all but the anger vignettes, the univariate analyses failed to indicate differences between the mean error rates of children with Low and High DA scores. For the anger vignettes,

Table 14

Summary of the Effects of Disapproving Parenting Approach (DA Lo/High) and Child Characteristics on Children's Affect Recognition

	Age	Gender	DA Lo/High
Vignette Error Percentage Rate	*		
Anger	**		*
Disgust	*		
Fear			
Happy		**	
Sad	*		
Surprise			
Facial Affect Recognition Error Percentage Rate	*		
Anger			
Disgust	*t*		
Fear	*t*	*t*	
Happy		*	*
Sad			*
Surprise	**		
Facial Affect Recognition Response Times			
Anger			
Disgust			
Fear	*		
Happy			
Sad	*t*		
Surprise			

* $p < .05$, ** $p < .01$, $^{t}p < .10$

Table 14 (continued)

	Age	Gender	DA Lo/High
Facial Affect Recognition Response Times by Expresser Gender			
Anger Male Expresser			
Anger Female Expresser			*t*
Disgust Male Expresser			
Disgust Female Expresser			
Fear Male Expresser			
Fear Female Expresser	**		
Happy Male Expresser			
Happy Female Expresser			
Sad Male Expresser	*t*		
Sad Female Expresser			
Surprise Male Expresser			
Surprise Female Expresser			*

* $p < .05$, ** $p < .01$, $^{t}p < .10$

Table 15

Multivariate and Univariate Analyses of Covariance of Disapproving Parenting Approach (DA) on Vignette Error Percentage Rates (N = 30)

Source of Variation			
	Covariates		Independent Variable
	Age	Gender	DA
Multivariate Analysis			
F *(6, 21)*	3.56*	2.01	1.99
Univariate Analysis			
F *(1, 26)*			
Anger	11.17**	.76	4.42*
Disgust	4.28*	.04	.13
Fear	2.04	1.97	.24
Happy	.77	9.70**	2.48
Sad	4.63*	1.03	.00
Surprise	.04	.07	2.46

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

Table 16

Mean Vignette Error Percentage Rate by Emotion for Children of Parents with Low/High Disapproving Parenting Style After Age and Gender Controlled (N= 30)

Emotion	Low DA $n = 15$	High DA $n = 15$	Mean Difference	F
Anger	37.33	54.67	-17.34	4.42*
	(27.12)	(30.67)		
Disgust	61.33	56.00	5.33	.14
	(32.48)	(31.35)		
Fear	9.33	6.67	2.66	.24
	(21.20)	(9.76)		
Happy	6.67	24.00	-17.33	2.48
	(20.93)	(36.41)		
Sad	10.67	12.00	-1.33	.00
	(18.31)	(19.71)		
Surprise	81.33	64.00	17.33	2.47
	(23.26)	(33.12)		

Note: numbers in parentheses are standard deviations.

* $p < .05$

univariate analyses indicated that children of parents with Low DA scores made fewer errors identifying anger vignettes than children of parents with High DA scores.

Facial Affect Recognition Error Percentage Rates. Table 17 displays the multivariate and univariate analyses of covariance of DA on facial affect recognition error percentage rates. Multivariate analyses indicated a main effect for age but not gender or DA for children's facial affect recognition. Univariate analyses allowed for an examination of the effects of age, gender, and DA on each emotion. See Table 18 for mean facial affect recognition error percentage rates by emotion for children of parents with Low and High DA after age and gender were controlled.

For the surprise facial affect recognition, univariate analyses on error percentage rates indicated that while age contributed variance, gender did not. For the disgust facial affect recognition, the same univariate analyses indicated a trend toward significance for the influence of age on mean error percentages, but not for gender. For the fear facial affect recognition, there was a trend toward significance for both age and gender's influence. For the happy facial affect recognition mean error percentage rates, gender influenced variance, but age did not, while for the anger facial affect recognition, neither age nor gender influenced facial affect recognition error percentage rate. Univariate analyses indicated that for the happy and the sad facial affect recognition, children of parents with Low DA scores made more errors than children of parents with High DA scores.

Facial Affect Recognition Response Times. Table 19 displays the multivariate and univariate analyses of covariance of DA on facial affect recognition response times.

Table 17

Multivariate and Univariate Analyses of Covariance of Disapproving Parenting Approach (DA) on Facial Affect Recognition Error Percentage Rates (N = 30)

Source of Variation			
	Covariates		Independent Variable
	Age	Gender	DA
Multivariate Analysis F *(6, 21)*	3.62*	1.08	1.42
Univariate Analysis F *(1, 26)*			
Anger	.03	.00	2.54
Disgust	4.08^{t}	.63	.08
Fear	2.99^{t}	3.05^{t}	.91
Happy	.01	5.02*	5.00*
Sad	1.85	1.64	5.20*
Surprise	8.17**	1.08	.34

* $p < .05$, ** $p < .01$, $^{t}p < .10$

Table 18

Mean Facial Affect Recognition Error Percentage Rates for Children of Parents with Low/High Disapproving Parenting Approach After Age and Gender Controlled (N= 30)

Facial Expression	Low DA $n = 15$	High DA $n = 15$	Mean Difference	F
Anger	22.52	10.42	12.10	2.54
	(26.65)	(9.93)		
Disgust	78.75	81.67	-2.92	.08
	(31.23)	(36.17)		
Fear	37.08	29.17	7.91	.91
	(28.39)	(21.86)		
Happy	10.42	2.50	7.92	5.00*
	(14.50)	(5.18)		
Sad	28.33	13.33	15.00	5.20*
	(21.24)	(15.65)		
Surprise	45.42	50.42	-5.00	.37
	(33.45)	(42.81)		

Note: numbers in parentheses are standard deviations.

*$p < .05$

Table 19

Multivariate and Univariate Analyses of Covariance of Disapproving Parenting Approach (DA) on Facial Affect Recognition Response Time (N = 30)

Source of Variation			
	Covariates		Independent Variable
	Age	Gender	DA
Multivariate Analysis F *(6, 21)*	1.07	1.01	1.40
Univariate Analysis F *(1, 26)*			
Anger	.29	.04	1.34
Disgust	.18	.12	.00
Fear	5.45*	.02	.03
Happy	.81	1.85	1.12
Sad	3.01 ^{t}	1.10	1.46
Surprise	.56	.63	2.76

$p < .05$, ** $p < .01$, $^{t}p < .10$

Multivariate analyses indicated no main effects for age, gender, or DA for children's facial affect recognition. Univariate analyses allowed for an examination of the effects of age, gender, and DA on each emotion. See Table 20 for mean facial affect recognition response times by emotion for children of parents with Low and High DA after age and gender were controlled.

For the fear facial affect recognition, univariate analyses on mean response times indicated that while age contributed variance, gender did not. For the sad facial affect recognition, univariate analyses indicated a trend toward significance for the influence of age on mean response times, but not gender. For the anger, the disgust, the happy, and the surprise facial affect recognition, the same univariate analyses revealed no influence for either age or gender on mean response times. Univariate analyses also failed to indicate differences between mean response times of children of parents with Low and High DA scores for any of the emotion recognition mean response times.

Facial Affect Recognition Response Times by Expresser Gender. Table 21 displays the multivariate and univariate analyses of covariance of DA on male-expressed and female-expressed facial affect recognition response times. Multivariate analyses indicated no main effects for age, gender, or DA for children's facial affect recognition by expresser gender. Univariate analyses allowed for an examination of the effects of age, gender, and DA on each of the male-expressed and female-expressed emotions. See Table 22 for mean facial affect recognition response times for each emotion by gender for children of parents with Low/High DA after age and gender were controlled.

For female-expressed fear, univariate analyses on mean response times indicated that while age contributed variance. There also was a trend toward significance for the

Table 20

Mean Facial Affect Recognition Response Times for Children of Parents with Low/High Disapproving Parenting Approach After Age and Gender Controlled (N= 30)

Facial Expression	Low DA $n = 15$	High DA $n = 15$	Mean Difference	F
Anger	777.68	686.36	91.32	1.34
	(219.87)	(183.92)		
Disgust	903.85	912.35	-8.50	.00
	(228.60)	(275.37)		
Fear	903.37	913.08	-9.23	.03
	(208.49)	(371.32)		
Happy	612.07	562.27	49.80	1.12
	(123.86)	(148.07)		
Sad	838.45	721.37	117.08	1.46
	(276.24)	(270.28)		
Surprise	1028.95	825.91	203.04	2.76
	(399.48)	(250.07)		

Note: numbers in parentheses are standard deviations.

*$p < .05$

Table 21

Multivariate and Univariate Analyses of Covariance of Disapproving Parenting Approach (DA) on Facial Affect Recognition Response Times by Expresser Gender (N = 30)

Source of Variation			
	Covariates		Independent Variable
	Age	Gender	DA
Multivariate Analysis F *(6, 21)*	1.25	.85	1.49
Univariate Analysis F *(1, 26)*			
Anger Male Expresser	.08	.31	.31
Anger Female Expresser	.27	.15	3.58^{t}
Disgust Male Expresser	.66	.01	.15
Disgust Female Expresser	.33	.73	.17
Fear Male Expresser	.77	.00	.11
Fear Female Expresser	11.56**	.02	.04
Happy Male Expresser	.10	.92	.55
Happy Female Expresser	.10	1.83	1.20
Sad Male Expresser	3.21^{t}	.35	.12
Sad Female Expresser	2.07	1.40	1.72
Surprise Male Expresser	.16	.39	.91
Surprise Female Expresser	.72	.87	4.71*

* $p < .05$, ** $p < .01$, $^{t}p < .10$

Table 22

Mean Facial Affect Recognition Response Times by Expresser Gender for Children of Parents with Low/High Disapproving Parenting Approach After Age and Gender Controlled (N= 30)

Facial Expression	Low DA $n = 15$	High DA $n = 15$	Mean Difference	F
Anger Male Expresser	798.51	741.49	57.02	.31
	(236.37)	(261.19)		
Anger Female Expresser	801.85	616.80	202.05	3.58[t]
	(343.32)	(130.91)		
Disgust Male Expresser	946.93	1011.81	-64.88	.15
	(225.86)	(551.74)		
Disgust Female Expresser	844.68	806.78	37.90	.17
	(336.77)	(174.06)		
Fear Male Expresser	974.81	1017.98	-43.17	.11
	(197.58)	(536.18)		
Fear Female Expresser	827.14	796.79	30.35	.04
	(312.40)	(278.25)		
Happy Male Expresser	599.98	560.92	39.06	.55
	(117.11)	(190.58)		

Note: numbers in parentheses are standard deviations.

[t] $p < .10$

Table 22 (Continued)

Facial Expression	Low DA $n = 15$	High DA $n = 15$	Mean Difference	F
Happy Female Expresser	629.04	562.44	66.60	1.20
	(206.95)	(141.21)		
Sad Male Expresser	675.27	644.72	30.55	.12
	(200.75)	(245.72)		
Sad Female Expresser	986.69	802.36	184.33	1.72
	(463.96)	(321.70)		
Surprise Male Expresser	1128.89	907.00	221.89	.91
	(770.95)	(461.27)		
Surprise Female Expresser	963.79	782.91	180.88	4.71*
	(228.34)	(228.86)		

Note: numbers in parentheses are standard deviations.

* $p < .05$

effect of age on mean response times to male-expressed sadness. The same analyses indicated no effect of gender on any of the male- or female-expressed emotions. For most of the male- and female-expressed emotions, univariate analyses revealed no differences between mean response times of children of parents with Low and High DA scores. However, for female-expressed anger, there was a trend toward significance for the differences between mean response times. Additionally, for female-expressed surprise, children of parents with Low DA scores had longer response times than children of parents with High DA scores.

Hypothesis 2: The Effects of Parent's Expressiveness in the Family

The second hypothesis conceived that differences in children's response error rates when identifying affect from brief emotion-eliciting vignettes and photographs of facial expressions could be explained by examining parents' self-report of expressiveness in the family. It was predicted that parental negative expressiveness would influence children's ability to accurately identify other's emotions.

As with the first hypothesis, four between-subjects Multivariate Analysis of Covariance (MANCOVA) were performed. For each MANCOVA, the independent variable was negative self-expressiveness in the family (NSEF Low/High) with child age and gender as covariates. The first analysis utilized a 2 x 6 MANCOVA to examine the effects of DA on the children's vignette error percentage rates. The second analysis utilized a 2 x 6 MANCOVA to examine the effects of DA on the children's facial affect recognition error percentage rates. The third analysis utilized a 2 x 6 MANCOVA to examine the effects of NSEF on the children's facial affect recognition response times. For the final analysis, a 2 x 12 MANCOVA with the dependent variable divided by both

emotion and gender of expresser (e.g., Anger Male Expresser, Anger Female Expresser) was performed.

Because the influence of parental acceptance might vary by emotion, with each MANCOVA, univariate analyses were utilized to examine the influence of the covariates and the independent variable on each one of the six emotions. For the fourth analysis, the univariate analyses allowed for an examination of the influence of the covariates and the independent variable on each of the male-expressed and female-expressed emotions. Table 23 provides a summary of all analyses with significant effects noted by asterisks.

Vignette Recognition Error Percentage Rates. Table 24 displays the multivariate and univariate analyses of covariance of NSEF on vignette error percentage rates. Multivariate analyses indicated a main effect for age but not gender or NSEF for children's vignette recognition. Univariate analyses allowed for an examination of the effects of age, gender, and DA on each emotion. See Table 25 for mean vignette error percentage rates by emotion for children of parents with Low and High DA after age and gender were controlled.

For the anger, and the sad vignettes, univariate analyses on error percentage rates indicated that while age contributed variance, gender did not. The same analyses indicated a trend toward significance for the effects of age on the disgust vignettes, with no observed effect of gender. In contrast, the univariate analyses for the happy vignettes revealed an effect for gender, but not age. For both the fear and the surprise vignettes, neither age nor gender contributed variance. For all emotions, the univariate analyses failed to indicate differences between the mean vignette error percentage rates of children with Low and High NSEF scores.

Table 23

Summary of the Effects of Negative Self-Expressiveness in the Family (NSEF Lo/High) and Child Characteristics on Children's Affect Recognition

	Age	Gender	NSEF Lo/Hi
Vignette Error Percentage Rate	*		
Anger	*		
Disgust	*t*		
Fear			
Happy		**	
Sad	*		
Surprise			
Facial Affect Recognition Error Percentage Rate	**		
Anger			
Disgust	*		*t*
Fear			
Happy		*t*	
Sad			
Surprise	**		
Facial Affect Recognition Response Times			
Anger			
Disgust			
Fear	*		
Happy			
Sad			
Surprise			

* $p < .05$, ** $p < .01$, $^{t}p < .10$

Table 23 (continued)

	Age	Gender	NSEF Lo/Hi
Facial Affect Recognition Response Times by Expresser Gender			
Anger Male Expresser			
Anger Female Expresser			
Disgust Male Expresser			
Disgust Female Expresser			
Fear Male Expresser			
Fear Female Expresser	**		
Happy Male Expresser			
Happy Female Expresser			
Sad Male Expresser			
Sad Female Expresser			
Surprise Male Expresser			
Surprise Female Expresser			

* $p < .05$, ** $p < .01$, $^{t}p < .10$

Table 24

Multivariate and Univariate Analyses of Covariance of Parents' Negative Self-Expressiveness in the Family (NSEF) on Vignette Error Percentage Rates (N = 30)

Source of Variation			
	Covariates		Independent Variable
	Age	Gender	NSEF
Multivariate Analysis F *(6, 21)*	3.07*	2.02	1.54
Univariate Analysis F *(1, 26)*			
Anger	7.54*	.66	2.40
Disgust	4.10[t]	.05	.00
Fear	2.26	1.95	.17
Happy	1.58	9.68**	2.46
Sad	6.32*	.92	2.27
Surprise	.41	.07	2.86

* $p < .05$ ** $p < .01$ [t] $p < .10$

Table 25

Mean Vignette Error Percentage Rate by Emotion for Children of Parents with Low/High Negative Self-Expressiveness in the Family (NSEF) Scores After Age and Gender Controlled (N = 30)

Emotion	Low NSEF $n = 15$	High NSEF $n = 15$	Mean Difference	F
Anger	36.00	56.00	-20.00	2.40
	(32.25)	(24.14)		
Disgust	56.00	61.33	-5.33	.00
	(33.97)	(29.73)		
Fear	8.00	8.00	0	.17
	(16.56)	(16.56)		
Happy	8.00	22.67	-14.67	2.46
	(21.11)	(36.93)		
Sad	8.00	14.67	-6.67	2.27
	(14.74)	(22.00)		
Surprise	81.33	64.00	17.33	2.86
	(24.46)	(32.25)		

Note: numbers in parentheses are standard deviations.

Facial Affect Recognition Error Percentage Rates. Table 26 displays the multivariate and univariate analyses of covariance of NSEF on facial affect recognition error percentage rates. Multivariate analyses indicated a main effect for age, but not gender or NSEF for children's facial affect recognition. Univariate analyses allowed for an examination of the effects of age, gender, and NSEF on each emotion. See Table 27 for mean facial affect recognition error percentage rates by emotion for children of parents with Low and High NSEF after age and gender were controlled.

For the disgust and the surprise facial affect recognition, univariate analyses on error percentage rates indicated that while age contributed variance, gender did not. For the happy facial affect recognition, there was a trend toward significance for gender, but not for age. For the anger, the fear, and the sad facial affect recognition, neither age nor gender contributed variance. For the disgust facial affect recognition error percentage rates, univariate analyses indicated a trend toward significance for NSEF with children of parents with Low NSEF scores having higher mean error rates than children of parents with High NSEF scores. For all other emotions, the univariate analyses failed to indicate differences between children of parents with Low and High DA scores.

Facial Affect Recognition Response Times. Table 28 displays the multivariate and univariate analyses of covariance of NSEF on facial affect recognition response times. Multivariate analyses indicated a main effect for age, but not gender, or NSEF for children's facial affect recognition. Univariate analyses allowed for an examination of the effects of age, gender, and DA on each emotion. See Table 29 for mean facial affect

Table 26

Multivariate and Univariate Analyses of Covariance of Parents' Negative Self-Expressiveness in the Family (NSEF) on Facial Affect Recognition Error Percentage Rates (N = 30)

Source of Variation			
	Covariates		Independent Variable
	Age	Gender	NSEF
Multivariate Analysis F *(6, 21)*	3.86**	.82	1.35
Univariate Analysis F *(1, 26)*			
Anger	.05	.00	2.57
Disgust	6.18*	.98	3.51[t]
Fear	2.79	2.71	.02
Happy	.01	3.60[t]	.12
Sad	2.44	1.26	1.19
Surprise	8.12**	.93	.16

* $p < .05$ ** $p < .01$ [t] $p < .10$

Table 27

Mean Facial Affect Recognition Error Response Percentages for Children of Parents with Low/High Negative Self-Expressiveness in the Family (NSEF) Scores After Age and Gender Controlled (N= 30)

Facial Expression	Low NSEF $n = 15$	High NSEF $n = 15$	Mean Difference	F
Anger	22.52	10.42	12.10	2.57
	(24.00)	(15.25)		
Disgust	87.50	72.92	14.58	3.51[t]
	(25.99)	(38.72)		
Fear	30.42	35.83	-5.41	.02
	(20.30)	(29.83)		
Happy	5.42	7.50	-2.08	.12
	(11.05)	(12.09)		
Sad	23.33	18.33	5.00	1.19
	(21.06)	(18.97)		
Surprise	47.08	48.75	-1.67	.17
	(38.45)	(38.54)		

Note: numbers in parentheses are standard deviations.

[t] $p < .10$

Table 28

Multivariate and Univariate Analyses of Covariance of Parents' Negative Self-Expressiveness in the Family (NSEF) on Facial Affect Recognition Response Times (N = 30)

Source of Variation			
	Covariates		Independent Variable
	Age	Gender	NSEF
Multivariate Analysis F *(6, 21)*	1.03	.72	.45
Univariate Analysis F *(1, 26)*			
Anger	.66	.04	1.21
Disgust	.27	.11	.19
Fear	4.65*	.02	.42
Happy	.62	1.52	.36
Sad	2.74	.86	.05
Surprise	.81	.49	.38

* $p < .05$

Table 29

Mean Facial Affect Recognition Response Times for Parents' Negative Self-Expressiveness in the Family (NSEF) After Age and Gender Controlled (N= 30)

Facial Expression	Low NSEF $n = 15$	High NSEF $n = 15$	Mean Difference	F
Anger	769.04	695.01	74.03	1.21
	(245.70)	(152.75)		
Disgust	891.26	924.95	-33.69	.19
	(179.91)	(308.46)		
Fear	849.73	966.72	-116.99	.42
	(197.41)	(367.55)		
Happy	565.56	608.78	-43.22	.36
	(103.57)	(163.92)		
Sad	748.31	811.51	-63.20	.05
	(267.71)	(287.92)		
Surprise	952.50	902.37	50.13	.38
	(439.37)	(223.19)		

Note: numbers in parentheses are standard deviations.

recognition response times by emotion for children of parents with Low and High NSEF after age and gender were controlled.

For the fear facial affect recognition, univariate analyses on response times indicated that while age contributed variance, gender did not. For the anger, the disgust, the happy, the sad, and the surprise facial affect recognition, the same analyses indicated that neither age nor gender contributed variance. For every emotion, univariate analyses failed to indicate differences between mean response times of children of parents with Low and High NSEF scores.

Facial Affect Recognition Response Times by Expresser Gender. Table 30 displays the multivariate and univariate analyses of covariance of NSEF on male-expressed and female-expressed facial affect recognition response times. Multivariate analyses indicated no main effects for age, gender, or NSEF for children's facial affect recognition by expresser gender. Univariate analyses allowed for an examination of the effects of age, gender, and NSEF on each of the male-expressed and female-expressed emotions. See Table 31 for mean facial affect recognition response times for each emotion by gender for children of parents with Low/High NSEF after age and gender were controlled.
The univariate analyses indicated that while age contributed variance to female-expressed fear facial affect recognition response times, it did not contribute variance to the response times to any other male- or female-expressed emotion. The same analyses indicated that gender did not contribute variance to any of the male-expressed or female-expressed facial affect recognition response times. Univariate analyses also failed to indicate differences between mean response times of children of parents with Low and High NSEF scores for any of the male-expressed or female-expressed emotions.

Table 30

Multivariate and Univariate Analyses of Covariance of Parents' Negative Self-Expressiveness in the Family (NSEF) on Facial Affect Recognition Response Times by Expresser Gender (N = 30)

Source of Variation			
	Covariates		Independent Variable
	Age	Gender	NSEF
Multivariate Analysis F *(6, 21)*	1.16	.44	.36
Univariate Analysis F *(1, 26)*			
Anger Male Expresser	.31	.27	1.46
Anger Female Expresser	.57	.10	.81
Disgust Male Expresser	.65	.00	.00
Disgust Female Expresser	.16	.61	.69
Fear Male Expresser	.53	.01	.30
Fear Female Expresser	10.52**	.01	.24
Happy Male Expresser	.16	.75	.36
Happy Female Expresser	2.45	1.50	.20
Sad Male Expresser	2.42	.25	1.44
Sad Female Expresser	2.17	1.17	.07
Surprise Male Expresser	.38	.39	.83
Surprise Female Expresser	.66	.51	.03

* $p < .05$ ** $p < .01$ $^{t}p < .10$

Table 31

Mean Facial Affect Recognition Response Times by Expresser Gender for Parents' Negative Self-Expressiveness in the Family (NSEF) After Age and Gender Controlled (N= 30)

Facial Expression	Low NSEF $n = 15$	High NSEF $n = 15$	Mean Difference	F
Anger Male Expresser	822.78	717.22	105.56	1.46
	(269.59)	(217.22)		
Anger Female Expresser	747.16	671.49	75.67	.81
	(351.81)	(162.83)		
Disgust Male Expresser	993.47	965.27	28.20	.00
	(304.01)	(514.62)		
Disgust Female Expresser	776.77	874.69	-97.92	.69
	(203.92)	(312.66)		
Fear Male Expresser	942.66	1050.13	-107.47	.30
	(214.04)	(524.91)		
Fear Female Expresser	755.89	868.09	-112.20	.24
	(266.93)	(312.27)		
Happy Male Expresser	563.16	597.73	-34.57	.36
	(117.98)	(190.51)		

Note: numbers in parentheses are standard deviations.

Table 31 (Continued)

Facial Expression	Low NSEF $n = 15$	High NSEF $n = 15$	Mean Difference	F
Happy Female Expresser	567.98	623.51	-55.53	.20
	(111.64)	(225.90)		
Sad Male Expresser	597.72	722.27	-124.55	1.44
	(130.86)	(275.21)		
Sad Female Expresser	885.49	903.56	-18.07	.07
	(438.76)	(379.84)		
Surprise Male Expresser	1108.44	927.45	180.99	.83
	(841.82)	(327.57)		
Surprise Female Expresser	855.19	891.51	-36.32	.03
	(230.14)	(261.48)		

Note: numbers in parentheses are standard deviations.

Chapter IV

Discussion

The intention of the present study was to examine how parenting variables relate to children's ability to recognize emotions. There were two main hypotheses that were examined. The first posited that differences in affect recognition would be explained by examining parents' self-report of acceptance of their children's emotions. The second hypothesis posited that variance in children's affect recognition could be explained by examining parents' self-report of expressiveness in the family.

Analyses of the effect of disapproving parenting approach (DA) on children's recognition of emotions revealed some interesting results. For vignette recognition, children of parents with high rates of DA had higher error percentage rates than children of parents with low rates, indicating that children of parents who display greater disapproval of their children's emotions are more likely to inaccurately identify vignettes of anger.

DA parenting was associated with the opposite result when the stimuli were photographs of facial expressions. For both happy and sad facial affects, children of parents with high DA rates had lower error percentage rates than children of parents with low DA rates. Analyses of response times indicated that for female-expressed surprise, children of parents with low DA scores had longer mean response times than children of parents with high DA scores. A trend toward significance for female-expressed anger indicated similar results. Thus, while high DA was associated with a higher vignette error percentage rate for anger, it was associated with lower facial affect recognition error percentage rates for happiness and sadness and longer response times for female-expressed surprise.

Why DA should be associated with different directions in the error rates of each dependent variable is cause for conjecture. An examination of the two dependent variables, vignette and facial affect recognition, reveals several dissimilarities including the complexities of the tasks and the developmental level of the stimuli. The first dependent variable, the emotion eliciting vignettes, required the children to listen to brief stories about a child and verbally label how the child in the story most likely felt. This complex task necessitated the recognition of an internal representation of emotion, which required the capacity for empathic feeling of internal emotive states. The second dependent variable, the facial affect recognition task, required the child to view photographs of adult faces expressing emotions. To do this accurately required the ability to accurately identify externalized representations of emotions. The task was more concrete and less abstract than the other task, requiring not the ability for empathic feeling but rather the ability to observe discrete emotion states of others.

Previous research (Pollack, Cicchetti, Hornung, & Reed, 2000; Reichenbach & Masters, 1983) has indicated that differences in children's environments influence their conceptions and perceptions of emotion signals. It is possible that parents who disapprove of children's expression of emotions, as those with High DA levels report, do not provide children with an environment conducive to learning empathic feeling of internal emotive states. When children are discouraged from expressing their own emotions, they might not be given the opportunity to learn about internal emotive states. As a result, these children might have greater difficulty correctly identifying the emotions described in the brief vignettes because they require a certain level of internal emotive state awareness.

In contrast, the facial affect recognition task required the children to recognize adult expressions of emotions. When parents express disapproval of children's emotions, it is possible that they are displaying their own emotions as a means of regulating their children's. As a result, the children of parents with High levels of DA might be provided with more opportunities to observe emotional expressions than children of parents with Low levels of DA. Previous research has shown that maternal modeling of facial expression positively influences children's ability to recognize other's emotional expressions (Camras et al, 1990; Camras et al., 1988).

The second independent variable examined, parental report of negative self-expressiveness in the family (NSEF), did not demonstrate any significant effects on children's affect recognition. However, a trend toward significance on children's recognition of disgust facial affect was observed. For this emotion, children of parents who reported high levels of NSEF had lower disgust facial affect recognition error rates than children of parents who reported low levels of NSEF. The children of parents who reported displaying more negative emotions made fewer errors when identifying facial expressions of disgust. These data, while not statistically significant, are consistent with the hypothesis that parents who display more negative emotions might be providing their children increased practice at recognizing other's emotional expression.

The Effects of Age and Gender

Consistent with previous research findings that children become better emotion decoders with age (Felleman et al., 1983; Petti, 1997), age was found to be a significant factor in the current study. Age was positively correlated with children's vignette error percentage rate for anger, disgust, and sadness. For facial affect recognition error

percentage rates, age was positively correlated for disgust and surprise. Also observed was a trend toward significance for the relation between children's fear facial affect recognition error rate and age. For facial affect recognition response time analyses, age was negatively correlated with fear response times, and a trend toward significance in the negative direction was observed for sadness response times, indicating that children's response times decreased with age. As a covariate in the multivariate and univariate analyses of covariance, the effect of children's age was observed in nearly every analysis.

In the current study, the lack of statistical significance between age and happiness recognition was likely due to the age of the participants. In their review of the literature, Gross and Baliff (1991) reported that children recognize facial expressions of happiness, sadness, and anger by the age of 4 and 5 years. An examination of the current participants' mean error percentage rates for happiness recognition indicates that most participants readily recognized the expression of this emotion. The absence of a significant effect of age on happiness recognition in the present study is support for the theory that by 5 years of age, most children have developmentally achieved the ability to recognize happiness. The significance of age as a covariate for anger, disgust, sadness, and surprise recognition indicates that children of this age group are still developing the ability to recognize these emotions.

In the present study, gender also was found to influence children's affect recognition. Independent samples t-tests for equality of means indicated both a difference by gender for happy vignette error percentage rate and a trend toward a significant difference for happy facial affect error percentage rate. As a covariate in the multivariate and univariate analyses of covariance, gender significantly influenced happiness

recognition. Consistent with previous research that found girls to be better at recognizing emotions than boys (Harrigan, 1984; Reichenbach & Masters, 1983; Stoddart, 1985), the girls in the current study had lower mean error percentage rates for happiness than the boys. Gender did not influence the error rates of any of the other emotions, however.

Limitations of the Present Study

The goal of the current study was to examine the relationship between parenting approach and children's ability to recognize affect from vignettes and photographs of facial affect. The study was limited by the use of indirect, self-report measures of independent variables and artificial measures of dependent variables. Additionally, the strength of the relationships was weakened by a small sample size that might be limited in its generalizabilty.

It seems probable that the methods of measurement partially influenced the observed results. The inability to assume complete accuracy when using self-report measures hindered the interpretation of the results of the current study. It is possible that even the most conscientious reporters might be unaware of their own facial expressiveness. As a result, the reliability of the parents' self-report of expressiveness seems questionable, at best. The study would have benefited from the inclusion of direct observations of parents' expressiveness and acceptance of children's emotions.

The dependent measures were both of an artificial nature (vignettes and photographs of facial affect). Gross and Baliff (1991) report that photographs are static presentations of facial affect expressions that do not impart the subtle changes observed in facial expressions occurring in natural situations. The use of films or live presentations might have resulted in more accurate responses than those obtained (Cook, 1971).

Inaccuracies in identifying the emotions presented in the photographs and vignettes do not necessarily generalize to affect recognition impairments in actual interactions.

Interpretation of the experimental data was hindered further by the struggle of many children on the delayed response portion of the facial affect recognition task. The research design of Lichacz et al. (1999) was created in order to allow for the examination of response times with the removal of the voicing artifacts (e.g., ability of microphone to pick up different word sounds) that can confound the results of vocal response time designs. This research design was too complicated for many of the children, however, who struggled to inhibit responses. Future studies would benefit from the utilization of a more simplified research design that utilized an alternative method for minimizing vocal errors.

Additionally, the vignette portion of the study was based on a verbal interaction between the experimenter and the child participant where the child was read the vignette and was expected to give a verbal response. This required verbal comprehension and communication skills for the children to accurately participate. While only 3 children were reported to have learning disabilities, and all children seemed to comprehend the task, it is possible that the artificial nature of the task led to results that were not representative of the children's actual ability to identify the emotions elicited in these situations.

In addition to the limitations resulting from the research design are the limitations in the participant sample. Despite repeated attempts to recruit participants through the latchkey programs of four schools in the Metropolitan Detroit area, recruitment via this method was limited. The smaller sample size likely restricted the power of the statistical analyses to reveal additional significant effects. Additionally, it is possible that the

respondents were not representative of the broader population, limiting the generalizability of the findings.

Another limitation to the generalizability of the current findings is the limited diversity of the sample. More than three-fourths of the participants identified themselves as Caucasians of a socio-economic status higher than the population as a whole. This same proportion of parent respondents described themselves as married. Interpretation of the findings beyond this population may be limited by the relative homogeneity of the current sample.

Directions for Future Research

While the current study was able to demonstrate a moderate relationship between the parenting and child variables, it likely was limited in both strength and generalizability by its use of indirect measures. A research design that utilized direct observations of parent and child interactions would allow for a more reliable measure of parental expressiveness. Furthermore, dependent measures that are not of a static nature might provide a more realistic reflection of the children's abilities. Finally, future studies would benefit from a more culturally diverse group of participants, thus minimizing the potential confounding effects of cultural or socio-economic differences.

Results of the present study indicated a relationship between parenting approach and children's ability to recognize emotions. However, the results of the correlation analyses of vignette accuracy and facial affect recognition tasks indicated that children's ability to identify the emotion elicited in vignettes was not significantly related to their ability to recognize other's facial expressions of emotions. Additionally, the main data analyses indicated that the relationship between DA and children's emotion recognition

varied by the way in which the emotion was presented. High DA was associated with higher vignette error percentage rates but lower facial affect recognition error percentage rates. Because it seems likely that these two tasks are actually measuring very different aspects of affect recognition, future studies might examine how empathy and affect recognition develop in children, and what, if any, part each plays in the development of the other.

The current study provided preliminary data indicating that parent's expression of disapproval regarding children's emotional expressiveness might negatively influence children's ability to recognize internalized emotions, while positively influencing their ability to recognize externalized expressions of emotions. Future research in this area would provide a better understanding of how this relationship develops.

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Appendix A

Background Information Form

The American Psychological Association recommends that researchers report the major demographic characteristics of all research participants (e.g., children's gender, parent's educational background, etc.). To assist us in collecting this information, we request that you complete this brief questionnaire. Everything that you report is confidential, and will not be used in any manner that identifies you or your child. If you are uncomfortable responding to any of the items, feel free to disregard them.

1. Today's date: Year: ____ Month: ____ Day: ____
2. Child participating in study's birth date: Year: ____ Month: ____ Day: ____
3. Child's age: ____ 4. Child's sex: Male: ____ Female: ____
5. Total number of children in the family _____
6. Age and gender of all children in the family _____

_____

7. Parents of child participating in study's current marital status:

   (1) ____ Married
   (2) ____ Single
   (3) ____ Divorced
   (4) ____ Separated
   (5) ____ Widowed
   (6) ____ Living together

11. Child's current family composition:

   (1) ____ Two-parent family
   (2) ____ Single-parent family (raised by mother)
   (3) ____ Single-parent family (raised by father)
   (4) ____ Shared custody between mother and father
   (5) ____ Other (please specify) _____

7. Cultural identity of child (optional):
   (1) ____ Caucasian
   (2) ____ African/Canadian or African/American
   (3) ____ Hispanic
   (4) ____ Asian/Pacific
   (5) ____ Native/Aboriginal (Canadian) or Native/American
   (6) ____ Other _____

8. In what Country was the child participating in the study born? _____
9. In what Country was the mother born? _____
10. In what Country was the father born? _____

11. Is English the child's primary language? (1) Yes (2) No

12. What language is spoken in the family home? _____

13. Has the child participating in the study been diagnosed with any learning disabilities?

(1) Yes (2) No

If yes, please describe the learning disability, time of diagnosis and any treatment

_____

_____

13. Child's mother's highest level of schooling:

(1) ____ Completed grade school
(2) ____ High school graduate, or equivalent of high school diploma
(3) ____ Post high school – trade or technical school
(4) ____ Some college or university
(5) ____ College or university graduate
(6) ____ Graduate and/or professional school
(7) ____ Other (please specify) _____

14. What is child's mother's occupation and job title? _____

_____

15. Child's father's highest level of schooling:

(1) ____ Completed grade school
(2) ____ High school graduate, or equivalent of high school diploma
(3) ____ Post high school – trade or technical school
(4) ____ Some college or university
(5) ____ College or university graduate
(6) ____ Graduate and/or professional school
(7) ____ Other (please specify) _____

16. What is child's father's occupation and job title? _____

_____

17. What is the approximate total income bracket of your family of origin? (optional)

(1) ____ Less than 20,000
(2) ____ 21,000 – 40,000
(3) ____ 41,000 – 60,000
(4) ____ 61,000 – 80,000
(5) ____ 81,000 – 100,000
(6) ____ over 100,000

Please indicate: (1)__ Canadian or (2)__ American Dollar

18. Would you be willing to participate in future studies? (1) __ yes (2) __ no
If so, please include your name and contact information on the blank sheet provided.

Appendix B

CONSENT TO PARTICIPATE IN RESEARCH
Parenting and Children's Facial Affect Recognition
Investigator: Christine Agar

You are asked to participate in a research study conducted by Christine Agar, from the Psychology department at the University of Windsor, which is being conducted in partial fulfillment of the requirements for the Master's Degree in Clinical Psychology.

If you have any questions or concerns about the research, please feel free to contact Christine Agar at (519) 253-3000, ext. 2215 or her supervisor, Dr. Julie Hakim-Larson, at (519) 253-3000, ext. 2241.

Purpose of the Study: The purpose of this study is to examine the relationship between parenting styles and children's understanding of emotional expressions.

Study Procedures: If you volunteer to participate in this study, we will ask you to complete several questionnaires regarding emotions. The questionnaire packet should require no longer than one hour to complete. Should you consent to your child's participation in the study, your child will be asked to identify positive and negative emotions from brief stories and photographs of facial expressions. Your child's participation should require approximately one hour.

Potential Risks and Discomforts: It is possible that some children might become fatigued or frustrated by the tasks. Each child will be assured that his/her continued participation in the task is strictly voluntary and that they can quit at any time without any negative consequences. If a child appears uncomfortable, the researcher will pause the task and allow for a break. If the child continues to appear uncomfortable, the researcher will discontinue testing.

Potential Benefits to Subjects and/or Society: As a result of participating in this project, parents may develop an increased awareness of their own emotions and those of their children. Children in the study may become more aware of emotions as an effect of practicing identifying emotions. The aim of the study is to increase scientific knowledge of the relation between parenting and children's ability to recognize emotions.

Compensation: For participating in this study, your child will receive a small, inexpensive prize upon departure from the study. Should your child choose to decline or withdraw from the study, your child will still receive a prize. In addition, University of Windsor students who participate will be eligible to receive up to two bonus credits if allowed by their professors. Bonus credits will be given, even if the participant chooses to withdraw participation before completion of the study.

Confidentiality: All information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Names and identifying information will not be recorded with any of the data. Participants will be assigned numbers, which cannot be traced to their names. All data will be stored securely and only research personnel will have access to it. You may ask questions regarding the research at any point before, during, or after the study and your questions will be answered. By law, an exception to such confidentiality is that researchers must report to the Children's Aid Society or the Child Protection Services any suspected cases of abuse or neglect.

Participation and Withdrawal: You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may exercise the option of removing your data from the study. You also may refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so. These rights also apply to your child, who may decline to participate in the study at any time, without penalty or loss of benefits.

Feedback: Results of this study will be posted on the University of Windsor's Department of Psychology website Research page which can be accessed via the link at the University of Windsor Department of Psychology home page at http://cronus.uwindsor.ca/units/psychology/psycNew.nsf

Rights of Research Subjects: You may withdraw your consent at any time and discontinue participation without penalty. This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research subject, contact:
Research Ethics Co-ordinator
University of Windsor
Windsor, Ontario N9B 3P4
Telephone: 519-253-3000, ext. 3916
email: ethics@uwindsor.ca

Signature of Research Subject/Legal Representative: I understand the information provided for the study "Parenting and Children's Facial Affect Recognition" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

I, _____(please print name), HAVING READ AND UNDERSTOOD THE ABOVE INFORMATION, AGREE TO PARTICIPATE IN THIS STUDY.

AS THE PARENT OR LEGAL GUARDIAN OF _____ (please print *CHILD'S* name), I HEREBY CONSENT TO MY CHILD'S PARTICIPATION IN THE DESCRIBED STUDY.

Participant's signature_____ Date_____

Signature of Investigator: In my judgement, the subject is voluntarily and knowingly giving informed consent to participate in this research study.

Investigator's signature_____ Date _____
Christine Agar
University of Windsor
Department of Psychology
(519) 253-3000 ext. 2215
email: agar1@uwindsor.ca

If you are interested in learning more about this topic, you might want to read these books:

Raising an emotionally intelligent child: the heart of parenting
by J.Gottman with J. C. DeClaire
New York: Simon & Schuster. (1997).

The development of emotional competence.
by C. Saarni
New York: The Guilford Press (1999).

For those in the Windsor area, if you feel that you need more help, please contact one of these agencies:

Windsor Regional Children's Centre
3901 Connaught St.
Windsor, On
(519) 257-5288

Catholic Family Services
677 Victoria Ave.
Windsor, On
(519) 254-5164

For those in Oakland County, if you feel that you need more help, please contact one of these agencies:

North Oakland Family Mental Health
28 W. Lawrence St.
Pontiac, MI
(248) 858-5326

Harold E. Fox Center
St. Joseph Mercy Oakland
900 Woodward Ave.
Pontiac, MI
(248) 858-3177

Appendix C

INFORMATION FORM
Parenting and Children's Facial Affect Recognition
Investigator: Christine Agar

You are asked to participate in a research study conducted by Christine Agar, from the Psychology department at the University of Windsor, which is being conducted in partial fulfillment of the requirements for the Master's Degree in Clinical Psychology.

If you have any questions or concerns about the research, please feel free to contact Christine Agar at (519) 253-3000, ext. 2215 or her supervisor, Dr. Julie Hakim-Larson, at (519) 253-3000, ext. 2241.

Purpose of the Study: The purpose of this study is to examine the relationship between parenting styles and children's understanding of emotional expressions.

Study Procedures: If you volunteer to participate in this study, we will ask you to complete several questionnaires regarding emotions. The questionnaire packet should require no longer than one hour to complete. Should you consent to your child's participation in the study, your child will be asked to identify positive and negative emotions from brief stories and photographs of facial expressions. Your child's participation should require approximately one hour.

Potential Risks and Discomforts: It is possible that some children might become fatigued or frustrated by the tasks. Each child will be assured that his/her continued participation in the task is strictly voluntary and that they can quit at any time without any negative consequences. If a child appears uncomfortable, the researcher will pause the task and allow for a break. If the child continues to appear uncomfortable, the researcher will discontinue testing.

Potential Benefits to Subjects and/or Society: As a result of participating in this project, parents may develop an increased awareness of their own emotions and those of their children. Children in the study may become more aware of emotions as an effect of practicing identifying emotions. The aim of the study is to increase scientific knowledge of the relation between parenting and children's ability to recognize emotions.

Compensation: For participating in this study, your child will receive a small, inexpensive prize upon departure from the study. Should your child choose to decline or withdraw from the study, your child will still receive a prize. In addition, University of Windsor students who participate will be eligible to receive up to two bonus credits if allowed by their professors. Bonus credits will be given, even if the participant chooses to withdraw participation before completion of the study.

Confidentiality: All information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Names and identifying information will not be recorded with any of the data. Participants will be assigned numbers, which cannot be traced to their names. All data will be stored securely and only research personnel will have access to it. You may ask questions regarding the research at any point before, during, or after the study and your questions will be answered. By law, an exception to such confidentiality is that researchers must report to the Children's Aid Society or the Child Protection Services any suspected cases of abuse or neglect.

Participation and Withdrawal: You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may exercise the option of removing your data from the study. You also may refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so. These rights also apply to your child, who may decline to participate in the study at any time, without penalty or loss of benefits.

Feedback: Results of this study will be posted on the University of Windsor's Department of Psychology website Research page which can be accessed via the link at the University of Windsor Department of Psychology home page at http://cronus.uwindsor.ca/units/psychology/psycNew.nsf

Rights of Research Subjects: You may withdraw your consent at any time and discontinue participation without penalty. This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research subject, contact:

Research Ethics Co-ordinator
University of Windsor
Windsor, Ontario N9B 3P4
Telephone: 519-253-3000, ext. 3916
email: ethics@uwindsor.ca

Signature of Research Subject/Legal Representative: I understand the information provided for the study "Parenting and Children's Facial Affect Recognition" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

If you are interested in learning more about this topic, you might want to read these books:

Raising an emotionally intelligent child: the heart of parenting
by J.Gottman with J. C. DeClaire
New York: Simon & Schuster. (1997).

The development of emotional competence.
by C. Saarni
New York: The Guilford Press (1999).

For those in the Windsor area, if you feel that you need more help, please contact one of these agencies:

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Windsor, On
(519) 257-5288

Catholic Family Services
677 Victoria Ave.
Windsor, On
(519) 254-5164

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Pontiac, MI
(248) 858-5326

Harold E. Fox Center
St. Joseph Mercy Oakland
900 Woodward Ave.
Pontiac, MI
(248) 858-3177

Appendix D

UNIVERSITY OF WINDSOR
CONSENT FORM
FOR UNIVERSITY OF WINDSOR STUDENTS
Children's Facial Affect Recognition
Investigator: Christine Agar

Purpose: The purpose of this study is to examine the relationship between parenting styles and children's understanding of emotional expressions.

Study Procedures: As a participant, you will be asked to complete several questionnaires regarding emotions. The questionnaire packet should require no longer than one hour to complete. Should you consent to your child's participation in the study, your child will be asked to identify emotions from brief stories and photographs of facial expressions. Your child's participation should require approximately one hour.

Participants' Rights: Your participation in this study is entirely voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any point without penalty or loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be destroyed. Names and identifying information will not be recorded with any of the data. Participants will be assigned numbers, which cannot be traced to their names. All data will be stored securely and only research personnel will have access to it. You may ask questions regarding the research at any point before, during, or after the study and your questions will be answered. These rights also apply to your child, who may decline to participate in the study at any time, without penalty or loss of benefits. By law, an exception to such confidentiality is that researchers must report to authorities any suspected cases of abuse or neglect.

Compensation: For participating in this study, you will receive up to two bonus credits, if allowed by your professor, toward your final grade in a psychology class. If you withdraw from the study prior to its completion, you will still receive two bonus credits. Your child will receive a small, inexpensive prize upon departure from the study. Should your child choose to decline or withdraw from the study, you will still receive your bonus credits and your child will still receive a prize.

Feedback: If you desire feedback, you may receive a copy of the study results once the study has been completed. Please leave your name and mailing address on the back of this form if you are interested in receiving a copy of the results.

The University of Windsor Research Ethics Board has cleared this research. Any ethical concerns about the procedure may be reported to that committee (253-3000 ext. 3916). Any further concerns or questions may be directed to the principal investigator, Christine Agar, or her advisor, Dr. J. Hakim-Larson (253-3000, ext. 2241).

If you are interested in learning more about this topic, you might want to read these books:

Raising an emotionally intelligent child: the heart of parenting.
by J.Gottman with J. DeClaire
New York: Simon & Schuster. (1997).

The development of emotional competence
by C. Saarni
New York: The Guilford Press (1999)

If you feel that you need more help, please contact one of these agencies;

Windsor Regional Children's Centre
3901 Connaught St.
Windsor, On
(519) 257-5288

Catholic Family Services
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Windsor, On
(519) 254-5164

North Oakland Family Mental Health
28 W. Lawrence St.
Pontiac, MI
(248) 858-5326

Harold E. Fox Center
St. Joseph Mercy Oakland
900 Woodward Ave.
Pontiac, MI
(248) 858-3177

If you have any questions about participating, please feel free to contact me at any time. Thank you for your cooperation.

Christine Agar
University of Windsor
Department of Psychology
(519) 253-3000 ext. 2215
email: agar1@uwindsor.ca

I, _____(please print name), HAVING READ AND UNDERSTOOD THE ABOVE INFORMATION, AGREE TO PARTICIPATE IN THIS STUDY.

AS THE PARENT OR LEGAL GUARDIAN OF _____ (please print *CHILD'S* name), I HEREBY CONSENT TO MY CHILD'S PARTICIPATION IN THE DESCRIBED STUDY.

I HAVE RECEIVED A COPY OF THIS FORM.

Participant's signature_____ Date_____

Appendix E

UNIVERSITY OF WINDSOR
INFORMATION FORM
FOR UNIVERSITY OF WINDSOR STUDENTS
Children's Facial Affect Recognition
Investigator: Christine Agar

Purpose: The purpose of this study is to examine the relationship between parenting styles and children's understanding of emotional expressions.

Study Procedures: As a participant, you will be requested to complete several questionnaires regarding emotions. The questionnaire packet should require no longer than one hour to complete. Should you consent to your child's participation in the study, your child will be asked to identify emotions from brief stories and photographs of facial expressions. Your child's participation should require approximately one hour.

Participants' Rights: Your participation in this study is entirely voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at any point without penalty or loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be destroyed. Names and identifying information will not be recorded with any of the data. Participants will be assigned numbers, which cannot be traced to their names. All data will be stored securely and only research personnel will have access to it. You may ask questions regarding the research at any point before, during, or after the study and your questions will be answered. These rights also apply to your child, who may decline to participate in the study at any time, without penalty or loss of benefits. By law, an exception to such confidentiality is that researchers must report to authorities any suspected cases of abuse or neglect.

Compensation: For participating in this study, you will receive up to two bonus credits, if allowed by your professor, toward your final grade in a psychology class. If you withdraw from the study prior to its completion, you will still receive two bonus credits. Your child will receive a small, inexpensive prize upon departure from the study. Should your child choose to decline or withdraw from the study, you will still receive your bonus credits and your child will still receive a prize.

Feedback: If you desire feedback, you may receive a copy of the study results once the study has been completed. Please leave your name and mailing address on the back of this form if you are interested in receiving a copy of the results.

If you are interested in learning more about this topic, you might want to read these books:

Raising an emotionally intelligent child: the heart of parenting.
by J.Gottman with J. DeClaire
New York: Simon & Schuster. (1997).

The development of emotional competence
by C. Saarni
New York: The Guilford Press (1999).

For those in the Windsor area, if you feel that you need more help, please contact one of these agencies:

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For those in Oakland County, if you feel that you need more help, please contact one of these agencies:

North Oakland Family Mental Health
28 W. Lawrence St.
Pontiac, MI
(248) 858-5326

Harold E. Fox Center
St. Joseph Mercy Oakland
900 Woodward Ave.
Pontiac, MI
(248) 858-3177

If you have any questions about participating, please feel free to contact me at any time. Thank you for your cooperation.

Christine Agar
University of Windsor
Department of Psychology
(519) 253-3000 ext. 2215
email: agar1@uwindsor.ca

Appendix F

Assent for Elementary School Children
Children's Facial Affect Recognition
Investigator: Christine Agar

I am a student researcher, and I am doing a study on feelings. I would like to ask you to listen to some really short stories and tell me what you think the person in them is feeling. Then, I would like you to look at some faces of people on the computer screen and tell me what those people seem to be feeling.

When I am finished talking with all the kids who agree to be in my study, I will write a report on what I have learned. My teachers will read it, and it might be put in a book, but no one will know who the kids are that answered my questions.

I want you to know that I will not be telling your teachers or parents or any other kids what you answer. The only exception is if you tell me that someone has been hurting you. If I think that you are being hurt or abused I will need to tell your parents or someone else who can help you. Otherwise, I promise to keep everything that you tell me private.

Your mom and/or dad have said it is okay for you to answer my questions on feelings. Do you think that you would like to answer them? You won't get into any trouble if you say "no." If you decide to answer the questions you can stop answering them at any time, and you don't have to answer any question you do not want to answer. It's entirely up to you. Whether you decide to answer any questions or not, I will give you a small prize when you leave. Would you like to try answering the questions?

I understand what I am being asked to do to be in this study, and I agree to be in this study.

_____ _____

Signature Date

_____ _____

Witness Date

Appendix G

Information Form for Elementary School Children
Children's Facial Affect Recognition
Investigator: Christine Agar

I am a student researcher, and I am doing a study on feelings. I would like to ask you to listen to some really short stories and tell me what you think the person in them is feeling. Then, I would like you to look at some faces of people on the computer screen and tell me what those people seem to be feeling.

When I am finished talking with all the kids who agree to be in my study, I will write a report on what I have learned. My teachers will read it, and it might be put in a book, but no one will know who the kids are that answered my questions.

I want you to know that I will not be telling your teachers or parents or any other kids what you answer. The only exception is if you tell me that someone has been hurting you. If I think that you are being hurt or abused I will need to tell your parents or someone else who can help you. Otherwise, I promise to keep everything that you tell me private.

Your mom and/or dad have said it is okay for you to answer my questions on feelings. Do you think that you would like to answer them? You won't get into any trouble if you say "no." If you decide to answer the questions you can stop answering them at any time, and you don't have to answer any question you do not want to answer. It's entirely up to you. Whether you decide to answer any questions or not, I will give you a small prize when you leave. Would you like to try answering the questions?

I understand what I am being asked to do to be in this study, and I agree to be in this study.

Appendix H

Children's Facial Affect Recognition
Debriefing Form
Experimenter: Christine Agar

The purpose of this study is to examine the relationship between the parenting styles of emotional expression, acceptance of children's emotions, and children's ability to recognize emotions.

To evaluate parents' expressiveness of emotions, parents completed a questionnaire designed by researcher Amy Halberstadt to measure how parents perceive their own expressiveness within their families. Parents also completed a questionnaire that was originally created by researcher John Gottman to elicit information regarding parents' beliefs about emotions in children. A final questionnaire completed by parents was designed to measure the respondent's tendency to answer questions in a manner that is socially desirable, thus potentially over reporting perceived positive qualities and underreporting perceived negative qualities.

The children were engaged in two tasks, both designed to measure how well they recognized emotions. In the first task, the children were asked to identify emotions elicited from brief stories. In the second task, the children were shown a set of color photographs of facial expressions of emotions on a computer screen and asked to identify the emotion being expressed. Their responses were recorded for both speed and accuracy.

The current study will examine whether any of the variance in children's responses can be explained by differences in parenting styles. If you have any further questions, please address them to the researcher or refer to the Information Form for the appropriate resources.

Christine Agar
University of Windsor
Department of Psychology
(519) 253-3000 ext. 2215.
email: agar1@uwindsor.ca

Appendix I

Instructions to be Read Aloud to the Children

Child Introduction

Hi, my name is Christine Agar. I am a student at the University of Windsor, and I am doing a project about how children understand and see emotions.

Child Assent

I would like to know if you would like to help me out today. What I will ask you to do is to listen to some really short stories and tell me what mood you think the person in them is likely feeling. Then, I would like you to look at some faces of people on the computer screen and tell me what mood that person seems to be feeling. I want you to know that I will not be telling your teachers or parents or any of the other children what you answer.

When I am finished talking with all of the children I'd like to see, I will write up what I have learned. My teachers will read it, and it might be put in a book, but no one will know who the children are that helped me out.

Sometimes, children have problems that make them feel sad or unhappy. If I think some of the kids who answer my questions have a problem, I will need to tell their parents or some other people who can help them.

Your mom and/or dad have given permission for you to answer these questions today. Do you think that you would like to help me out by answering the questions? You don't have to if you don't want to –you won't get into any trouble if you say "no", it's up to you. Whether you help me out or not, you will be allowed to choose a small prize when you leave. What would you like to do?

If you would like to help me out, please sign your name on the line below. You don't have to answer the questions if you don't want to and you can stop any time if you decide that you don't want to keep going once we get started.

Instructions to the Child

Measure of Affect Identification

I would like to begin by telling you some very short stories. After each story, I would like for you to tell me what mood you think that the child in the story is most likely feeling. I will write down your answer, and then I will read you the next story. Okay? Do you have any questions before we begin?

Facial Affect Recognition Task

Online naming task, practice trials. Now that we have finished with all of the stories, I have a new task that I would like for you to do. I would like for you to look at some pictures of faces on the computer screen. Each time that you see a face, I want you to say into the microphone what mood or emotion you think the person is feeling. Do your best to figure out how you think each person feels, but try to go as quickly as you can. After each face, there will be a picture of a plus sign that will just let you know to get ready for the next face. Would you like to try it? We will begin with some pictures of "smiley faces" that you can practice on, okay? After we do some of those, you will get to see some photographs of real people on the computer screen. Do you have any questions before we begin?

Online naming task. That was great! You seem to understand how this works. Do you want to ask me any questions before we start again with the photographs this time?

Delayed naming task, practice trials. Wow! You did it! Great. Now I want for you to do it a little differently this time. For these next pictures, we will still begin with a

plus sign on the screen to let you know that the picture is coming, but this time when the picture comes on the screen I want for you to figure out what the person is feeling, but wait to say it into the microphone until the picture disappears and a new symbol, two arrows, like this (show print out of arrows), comes up. When you see these arrows, then I want you to tell me what mood or emotion that you think the person was feeling. It's a little trickier than the last time, but we will practice again with some smiley face pictures so that you can get good at it before we begin. Do you understand what you are supposed to do? Let's give it a try.

Delayed naming task. You seem to understand what you need to do. Do you want to ask me any questions before we start again with the photographs this time?

Conclusion

You did it! Thanks so much for helping me. Would you like to ask me any questions now that we are finished? I have some small toys here, would you like to pick one before you go? Thanks, again.

Appendix J

Mean Facial Affect Recognition Response Time by Emotion for Male and Female Child Participants (N= 30)

Emotion	Male $n = 15$	Female $n = 15$	Mean Difference	t
Anger	721.61	742.44	-20.83	-.27
	(198.98)	(216.36)		
Disgust	924.98	891.22	33.77	.36
	(320.55)	(157.36)		
Fear	916.93	899.52	17.41	.15
	(384.54)	(182.65)		
Happy	619.02	555.31	63.71	1.29
	(171.01)	(84.72)		
Sad	826.57	733.25	93.32	.92
	(320.78)	(221.68)		
Surprise	970.02	884.85	85.15	.67
	(430.52)	(234.47)		

VITA AUCTORIS

Christine Agar was born in 1966 in Flint, Michigan. She graduated from Lahser High School in Bloomfield Hills, Michigan in 1984. In 2001, she obtained a B.A. in psychology from Oakland University in Rochester, Michigan. She completed her M. A. in child clinical psychology at the University of Windsor, Ontario, in 2004. She currently is enrolled in the University of Windsor's child clinical psychology Ph.D. program.