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Emotional competence in children with attention deficit-hyperactivity disorder and their parents /

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EMOTIONAL COMPETENCE IN CHILDREN WITH ATTENTION DEFICIT-HYPERACTIVITY DISORDER AND THEIR PARENTS

by

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Chapter One

When children are born, they have no skills to speak of; they aren't part of any culture. As they grow, they acquire whatever skills are unique to their own society and to recognize these skills in other people. In this sense, the socialization of skills related to emotion is no different than learning to stop at red lights and go on green ones. Children learn to be aware of their emotions, they learn to show emotions on their faces and through their actions, they learn to hide emotions that shouldn't be seen at a given time, and they learn to use the vocabulary of emotion. Children also grow to be aware of the feelings of other people and become able to use their own past experiences to empathize with others (Saarni, 1988). As all of these skills develop, children become emotionally competent.

All of the different aspects of competency fall into three interrelated skills: emotion expression, emotion appraisal, and emotion regulation. Emotion expression involves facial and vocal expression of emotion and the vocabulary of emotion as well as non-verbal behaviors such as gestures. Emotion appraisal involves awareness of one's own emotions and that of others. Finally, emotion regulation includes the ability to manage one's emotions and the emotions of others (Casey, 1996).

Children who successfully acquire these skills will be able to express emotion appropriately and be able to accurately assess what it is they are feeling. Such children are also aware of others' emotions and can control their emotions effectively (Casey, 1996). One can imagine what a child might look like who does not have these skills or has acquired skills incorrectly. One can visualize a student who might misperceive friendly behavior as hostile or who might laugh at inappropriate times. Such a child may not be able to control his or her emotions and might act out in the classroom. Alternatively, the child may do none of this and so tightly regulate emotions that the child withdraws from others. One can further imagine that such children would have a very difficult time getting along with peers and succeeding in school.

Often when children have deficits in emotional competence the origin is fairly clear. For example, maternal anger and negativity can produce children who are withdrawn with peers, express more negative emotions themselves and are generally less emotionally competent (Denham, 1989). Also, although mothers who comfort in the face of negative

emotions have children who say constructive things when angered, mothers who react with distress have children who express more negative affect (Eisenberg & Fabes, 1994). Further, children whose parents have some type of psychopathology may not see adaptive skills demonstrated and their parents may not interact with them in such a way as to teach them. Children of such mothers have been found to be less cooperative, more timid and fearful and more depressed than comparison groups (Sameroff & Seifer, 1983). If the mother has a history of depression and the father has a similar history, the children are then more likely to show lower social and emotional competence than children whose parents lack such a history (Goodman, Brogan, Lynch, & Fielding, 1993).

Unfortunately, children with psychopathology, who are often labeled "emotionally impaired" or spoken of as having "emotional problems," also frequently demonstrate deficits in emotional competence skills. In children with psychopathology but without parents who have psychopathology, it is unclear from where these deficits come. It is possible that they are somehow a by-product or a feature of the disorder itself. It is also possible that their parents have these same deficits and have somehow passed them on to their children through modeling, teaching, or genetics. These deficits, then, could precipitate the disorder or be necessary but not sufficient causes of the psychopathology.

Casey (1996) posits that each type of childhood psychopathology may have its own pattern of emotional skill deficits. The depressed child's emotional competence style would look markedly different from that of the child with Attention Deficit-Hyperactivity Disorder. One psychological disorder that appears to have its own pattern of emotional competence skill deficits is Attention Deficit-Hyperactivity Disorder (ADHD).

This disorder appears in children before the age of seven and is marked by inattention, impulsivity and hyperactivity (American Psychiatric Association, 1994). Recently, others have theorized that the main deficit in ADHD may actually be one of self-regulation: children with ADHD have a hard time choosing to do a required or appropriate task over one which appears more immediately gratifying (Westby & Cutler, 1994).

Given the externalizing pattern of behavior, the pattern of deficits that has emerged is not surprising. Children with ADHD demonstrate more facial display of emotion and more changes in facial display than comparison children. Children with ADHD are less aware of their own expression and emotion and less aware of others' emotions as well. In emotion

regulation, children with ADHD are more susceptible to emotional contagion but are less adept at contingent expression (Casey, 1996).

Thus, the present study explored the nature of the relationship between the pattern of emotional competence skill deficits in children with ADHD and their parents. At issue was whether or not parents of children with ADHD demonstrated the same pattern of deficits that their children do. This relationship could be an important first step toward understanding the etiology of deficits in emotional competence in children with psychopathology.

Chapter Two

Review of the Literature

As children grow up, they learn a series of emotional skills. They learn how to show emotions, how to identify emotions, and how to regulate emotions. In some children, however, the process of attaining these abilities goes awry. Thus, we find children who are less able to describe how they are feeling or are not as good at controlling their emotions. Often, these deficits are found in children with some form of psychopathology. More recently, it has been hypothesized that specific deficits in emotional behavior may be associated with specific disorders (Casey, 1996). For example, children with Attention Deficit Hyperactivity Disorder have been found to have more changes in facial display of emotions than comparison children (Casey, 1996).

Although this line of research appears promising, it has yet to address some of the fundamental relationships between psychopathology and emotional competence. Specifically, this issue is whether the deficits in emotion skills are taught by the parents or are manifested as part of the disorder. It appears that, in children without psychopathology, parents play a fundamental role in teaching children how to emotionally respond in a socially acceptable fashion. However, it is unclear whether children with deficits in emotional functioning have these deficits because they have learned them from their parents or because their psychopathology has interfered with acquisition of healthy, adaptive emotional skills.

The model of emotional functioning that includes the skills of emotion expression, emotion identification or appraisal and emotion regulation has been termed emotional competence (Saarni, 1989). As children develop, they become more skilled in these three areas. Competence in emotion expression requires that children use socially appropriate facial expressions of emotion as well as use of vocal expression of emotion through both the quality of speech and the words they use. Children who are able to appraise emotion are able to understand their own emotions and are able to recognize emotions in others by interpreting others' use of facial expression and body language. These skills are used throughout life, both on the playground as kids learn to tell whether or not others are teasing or bullying and in the workplace as adults learn to identify their bosses' moods before approaching them for raises. Emotion regulation is the most advanced of the skills and involves the ability to manage one's own emotion expression and the emotion expression of others through the

activation of the domains of functioning of the nervous system, facial expression, and verbal reports (Casey, 1995; Dodge, 1989). An example of the age-related development of this ability in oneself would be that a young child might not know how to respond tactfully to a birthday gift that he does not want, but the child's older sister knows how to regulate her emotions, by saying thank you and attempting to appear enthused about a gift that she does not really want.

These complex skills must be learned. Unlike height, which develops simply through proper nutrition, some emotional skills must be actively taught by parents and others are acquired through parental modeling. These skills come to children as early as infancy when children begin to recognize strangers. Infants' reactions to strangers are tempered by watching the parents' responses to the strangers. The children, at this young age, are learning to regulate their emotions based on what their parents show them, both through vocal expression and through facial expression (Boccia and Campos, 1989).

As children grow to be pre-schoolers, their interactions with their parents set the stage for interactions with other children. As children watch their parents react emotionally, children learn to express emotions themselves, learn to understand emotions and cope with them. Parents who are better able to deal with negative emotions and who explain them to their children are then more likely to have children who are more socially and emotionally competent (Denham & Grout, 1992). Further, although mothers of infants may attempt to match their children's emotions, as children grow mothers are less likely to do this. Instead, mothers begin to attempt to regulate their children's emotions in some active way (Denham, 1993). Children begin to learn what it means to regulate emotions, thus setting them on the path to doing it for themselves.

The children's journey on the path to self-regulation is assisted by other actions on the part of the parents. Mothers who support the children while creating structure and limits, who show positive emotions toward the children and who allow the children to become autonomous have children who demonstrate greater social-emotional competence (Denham, Renwick and Holt, 1991). On the other hand, maternal anger and negativity can be disregulating for children, producing children who are withdrawn in a peer group, express more negative emotions themselves and are generally less emotionally competent (Denham, 1989). Moreover, these experiences with the mother carry over into preschool. The

expressiveness of the mother, her reactions to the child's emotions, and the affective environment in which the child was raised are associated with the child's emotional competence in preschool (Denham & Grout, 1993).

As children progress to school age, their parents continue to be important figures in the development of emotional competence. The way that mothers respond to children's negative emotions is related to children's anger behavior. Mothers who comfort in the face of negative emotions have children who say constructive things rather than vent when angered. Conversely, mothers who react with distress have children who express more negative affect (Eisenberg & Fabes, 1994).

This demonstration of parental influences over emotional responding has been particularly well established in the area of sympathy, empathy and perspective-taking. Mothers who place negative controls on their children have children with fewer empathic and sympathetic responses toward a third person. This relationship may occur because children lack the opportunity to learn appropriate responses toward others (Miller, Eisenberg, Fabes, Shell, & Gular, 1989).

However, parents who express more sympathy and perspective taking with regards to a third person have children who are less likely to report personal distress in the face of a sympathy-eliciting situation (Eisenberg, Fabes, Schaller, Carlo, & Miller, 1991). Mothers who express more sympathy also have sons who self-report more sympathy and daughters who show more sympathy through facial expression (Eisenberg, Fabes, Carlo, Troyer, Speer, Karbon, & Switzer, 1992).

When it comes to acting on these feelings of sympathy and empathy, mothers who use problem-solving and discussion techniques in the face of distress have daughters who not only help a third person more, but better as well (Eisenberg, Fabes, Carlo, Speer, Switzer, Karbon, & Troyer, 1993). This trend continues through adolescence, when the emotional skills are relatively established. Mothers who express more positive communication are more likely to have children who are able to take another's perspective and, in girls, demonstrate sympathy, in boys, have low levels of distress (Eisenberg & McNally, 1993). Thus, it appears that mothers' responses are related to expressions of sympathy in their children throughout childhood. Although most of the data in this area is correlational, it does tend to point toward the power of parental influence in learning styles

of emotional responding.

Just as the parents of toddlers respond differently in the face of emotion than the parents of infants, the response changes again as the children grow to school age and parents attempt to further refine the emotional skills. With pre-school and kindergarten children, parents try to regulate their children's emotions through acting as a buffer when the parents have to deliver a message that will elicit strong emotions. They exhibit more positive facial expressions and are more responsive toward their children. By the time the children reach second grade, the parents tend to back off and be less interactive and comforting while sharing the same information with their children (Fabes, Eisenberg, Karbon, Bernzweig, Speer, & Carlo, 1994), perhaps suggesting that the parents wish their children to begin to further regulate their own responsiveness.

As children grow, they do acquire the ability to regulate their own responding. They come to understand that "internally experienced affect need not be behaviorally expressed and that the emotion that is expressed is not necessarily what is being felt internally" (Saarni, 1979; p. 424). As children age, they become better able to express these rules and use more and more complex reasoning. They also grow to understand the value of society's norms by about age 10 (Saarni, 1979). Children come to learn the appropriate response when faced with receiving a gift that they do not want and then learn how to express that response rather than the disappointment that they actually feel (Saarni, 1984). As children grow, they also learn to understand their feelings and explain them using more sophisticated explanations (Casey, 1993).

Not all children are given the opportunity to learn to be emotionally competent. Children whose parents are suffering from psychopathology or some other stress may not see these skills demonstrated and their parents may not interact with them in such a way as to teach them. Children of mothers with psychopathology have been found to be less cooperative, more timid and fearful and more depressed than comparison groups (Sameroff & Seifer, 1983). If the mother has a history of depression and the father also has a history of psychopathology, the children are then more likely to show lower social and emotional competence than children whose parents lack such a history (Goodman, Brogan, Lynch, & Fielding, 1993).

These deficits may be due to decreased parenting ability. Secure mothers are more

likely to be sensitive to their children (van Ijzendoorn, Kranenburg, Zwart-Woudstra, van Busschbach, & Lambermom, 1991), a characteristic which is considered important for optimal caregiving (Halberstadt, 1993). On the other hand, depressed mothers, as well as abusive mothers, are more likely to be inconsistent in their childrearing practices, to demonstrate more hostility and to be more protective than normal mothers (Susman, Trickett, Ianotti, Hollenbeck, & Zahn-Waxler, 1985). Thus, when children are faced with the disruption in parental interactions and teaching that depression in the parents creates, children become more likely to develop psychopathology themselves (Dodge, 1990).

Children with psychopathology are likely to show deficits in emotion skills. Casey (1996) postulates that, instead of simply a general deficit in skills, children with specific disorders demonstrate specific deficits in emotion skills. For example, children with depression vocalize more negativity than comparison children, but children with ADHD express less negativity than comparison children. If the various disorders do have different deficits in emotional competence, this would have implications for the treatment of the disorders. In relation to the above example, while one would want to teach the depressed child to express less negativity, that would certainly be the wrong method with the child with ADHD. Despite the promising nature of this work, it has yet to be replicated.

Some children, of course, develop psychopathology and the corresponding deficits in emotional competence without having a parent with a disorder. In such cases, it is often unclear from where the disorder has arisen and how the emotional skills deficits came to be. It is possible that the deficits in emotional competence arise because of the disorder. It is also possible that the deficits in emotional competence give rise to a specific disorder. If the latter were the case, it is possible that the parents contributed to the onset of the disorder by not modeling the emotional competence skills adequately. The most probable cause for this failure in acquisition would be that the parents had some sort of emotional skill deficit themselves. These deficits could be passed down several ways: through as-yet unexplored genetic paths, through modeling of the deficits themselves, or the overt teaching of socially inappropriate skills.

Children with Attention Deficit Hyperactivity Disorder face a difficult childhood. Such children demonstrate inattention, impulsivity, and hyperactivity at developmentally-inappropriate levels (Barkley, 1987). These symptoms must be present before age 7

(American Psychiatric Association, 1994). It is estimated that 3 percent of children have ADHD. Although it used to be assumed that children outgrew such difficulties, research now suggests that as many as 75 percent of these will continue to have difficulties as adolescents (Barkley, 1991). As young adults, those who had been diagnosed with ADHD as children are more likely to continue to report being easily distracted and feeling as if they are always "on the go" (Manuzza, Klein, Bonagura, Koenig,& Shenker, 1988).

In addition to this rather well-known clinical picture, children with ADHD face emotional skills deficits that make it difficult to interact effectively with others or to succeed at tasks. For example, Casey and Schlosser (1994) reported that, in the presence of compliments from their peers, children with externalizing disorders were more likely than normal children to react in a hostile or surprised manner. This pattern is also seen in the interactions between ADHD teens and their parents. When teens with ADHD discussed seemingly neutral topics with their mothers, significantly more conflict arose than between comparison teens and their mothers. This was particularly true when the ADHD teens also demonstrated oppositional defiant disorder (Barkley, Anastopoulos, Guevremont, & Fletcher, 1992). Children with ADHD have further been shown to have a much more difficult time than comparison children at adjusting their interaction style with their peers as tasks change. For example, ADHD children behaved appropriately when their task was one of giving direction, but this same style of behavior persisted and was inappropriate when the role shifted to one in which the children were to take direction (Westby & Cutler, 1994). Given such difficulties, it is not surprising that children with ADHD often have problems with peer acceptance (Barkley, 1991).

Further, current research suggests that the primary symptom of ADHD may be an inability to self-regulate. Whereas previous research indicated problems with distractibility, it now appears that children with ADHD may have difficulty following through with rules or tasks when something that appears more appealing is presented (Westby & Cutler, 1994).

The pattern of deficits that Casey (1996) identifies includes that ADHD children demonstrate more facial display of emotion and more changes in facial display than comparison children. In the arena of emotion appraisal, children with ADHD demonstrate less awareness of their own expression and emotion and less awareness of others' emotions. This deficit is more pronounced when the children are in a live situation rather than engaging

in cold cognitive emotion identification tasks such as looking at pictures of facial expression. In other words, children with ADHD would have a much more difficult time identifying emotion on the playground than looking at pictures in a storybook. In emotion regulation, children with ADHD are more susceptible to emotional contagion but are less adept at contingent expression (Casey, 1996).

Here, too, the role of the parents in the acquisition of emotional competence skill deficits is unclear. Murphy and Barkley (1996) reported that parents of children with ADHD are more likely to show impairment in social and psychological functioning, but were no different from other parents in the areas of attention, impulsivity or cognitive flexibility. It appears that parental functioning is related to children's, but the area of emotional competence has yet to be explored.

Thus, the goal of the present study was to explore the nature of the emotional competence skill deficits in children with ADHD and their parents. The study involved 68 children in late elementary and middle school. Forty of these children were diagnosed with ADHD, while the remainder were comparison children identified by their ADHD peers or through advertisements. Children in the study and their parents completed a number of measures designed to assess emotional competence of both the parents and children. Tasks for the parents and children were roughly equivalent in nature. Further, every subject, both parent and child, received a psychological screening to check for the presence of any disorder in the parents and another disorder in addition to ADHD in the children. This study addressed the overall issue of whether or not parents of ADHD children demonstrate the same pattern of skills deficits that their children show. Specifically, the questions addressed by the present study were as follows:

Question I: Do children with ADHD demonstrate a specific pattern of emotional competence deficits when compared to comparison group children and is this the pattern previously identified by Casey (1996)? Specifically, do the ADHD children have difficulty with appraising emotion in both themselves and others? Is this deficit more pronounced when the ADHD children are asked to appraise actual children than still drawings or photos? Further, do ADHD children have difficulties with emotion regulation? Will they be more susceptible to emotion contagion than non-ADHD children?

Question II: Do parents of children with ADHD show the same basic pattern of

emotion competence deficits that their children do? Are the parents of children with ADHD less able than comparison group parents to identify emotions in themselves and others and to regulate emotions effectively?

Chapter Three

Method

Subjects

Sixty-eight children and their parents were recruited. Forty of these children had the diagnosis of Attention Deficit Hyperactivity Disorder (ADHD) based on the criteria set forth in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 1994). The remaining 28 children were a comparison group who did not meet diagnostic criteria for any diagnosis.

Subjects were located through a variety of means. Children with ADHD were located through advertisements (See Appendix G) and parental support groups. Comparison children were located through advertisements and through peer nomination by the ADHD children. All families were asked to nominate friends of their children as potential subjects for the study, thus assuring that the two groups would be largely similar. Pleases see Table 1 for subject demographics.

Videotape Stimuli

Prior to the actual study, four videotapes were created of either a boy or a girl demonstrating either positive of negative affect to assess children's and parents' expression, identification, and regulation of emotion in the face of different affective stimuli. Child actors created four takes of both positive and negative affect to create a total of 16 versions of the stimulus interviews. The 16 takes were viewed and rated by a group of 18

Table 1

Characteristics of subjects by group

	ADHD Group	Comparison	Overall
Gender	29 (73%) male	16 (55%) male	45 (64%) male
Age	10.07 (SD 2.16)	10.06 (SD 3.05)	10.02 (SD 2.54)
Ethnicity			
White	29 (71%)	19 (66%)	48 (69%)
African American	8 (20%)	6 (21%)	14 (20%)
Asian	1 (2%)	0	1 (1%)

Table 2

Mean ratings of intensity and believability of videotape stimuli

Condition	Girl				Boy			
	Positive		Negative		Positive		Negative	
	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Intensity of Affect	5.95	(1.27)	7.28	(1.22)	6.11	(0.79)	7.73	(1.74)
Believability	6.31	(1.74)	7.28	(1.53)	7.06	(1.11)	7.80	(1.42)

college undergraduates and graduate students to assure that the desired affect had been achieved (See Appendix D). Raters assessed both the intensity of the affect shown and whether or not the tapes were believable on 1 to 10 scales where higher scores represented higher affect or greater believability. The tapes of the boy and the girl that were most similar in ratings of intensity of both negative and positive affect were edited into the final tapes for use in the study (See Table 2).

Parents viewed the same videotape that the child observed. Their behavior, like their children's, was immediately coded for later comparison to their report of their behavior. Similarity between how parents and children responded to the video was also assessed.

Agreement between the observers was acceptable. For the degree to which the subjects engaged in off-task behavior, the intraclass correlation was quite high ($r = .79$). Agreement for the identification of emotion for children and parents ($r = .61$) and the degree of change of emotion for children and parents ($r = .60$) were also acceptable.

Postcard Stimuli

Children entering the study were told that they would view a videotape of another child. They were told that this child was collecting postcards from around the country and would like the subject to send him/her one. The child then viewed a videotape of a same-sex child who was demonstrating either positive or negative affect (See Appendix D). While the subject was watching the tape, an observer who was blind to the videotaped condition's affect and the subject's diagnosis recorded the subject's behavior and emotion.

At the end of the videotape, children were asked to write to the child on the stimulus tape and were asked a series of questions. Children had the option of not writing the postcard.

After viewing the tape, the subjects selected one postcard from a set of 10 and write to the stimulus child. The post-cards varied on how "friendly" they look toward the other child, from blank postcards ranging to friendly animal postcards. The friendliness of the postcards was rated by the same group of pilot children who viewed the videotapes. The student raters were presented with twenty postcards and asked to rank the apparent "friendliness" through a Q-sort method. The cards were presented one at a time and the volunteers compared each card to the cards ranked previously. Rankings were averaged and the top three, middle four, and bottom three cards were selected to come up with the final friendliness ranking system. Thus, each subject only needed to look at and select from 10 postcards. Because men differed significantly from women in their choices, two separate systems were created.

Instruments

Parental psychopathology

Parents were asked to complete the Symptom Checklist- Ninety, Revised (SCL-90R). The SCL-90R is a questionnaire made up of 90 symptoms of psychopathology. It yields ratings on seven different psychopathology scales and an overall score (Derogatis, 1983). It is a well-validated measure which is widely used in both clinical and research settings. The overall score was used to measure overall parental adjustment (See Table 3; See also Appendix B) and subscale scores were used to assess depression and interpersonal sensitivity. Parents also completed a structured interview to determine the extent of ADHD symptoms that they have. This interview was a modified version of the Conner's Parent Rating Scale's ADHD subscales (Conners, 1990; See Appendix B).

Child psychopathology

Three measures were used to assess the presence of psychological disorders in children (See Table 3).

Children were assessed using the Children's Schedule for Affective Disorders and

Table 3

Summary of psychopathology measures

	ADHD Group M (SD)	Comparison M (SD)	Overall M (SD)
Parent Measures			
SCL-90R Total	57.00 (10.81)	51.44 (10.78)	54.89 (11.06)
Adult Conners Sum of Symptoms	10.46 (5.41)	10.00 (4.68)	10.27 (5.09)
Child Measures			
CBCL Total	68.05 (8.07)	50.97 (12.78)	60.97 (13.26)
Conners			
Rest/Disorg.	68.39 (10.08)	49.79 (8.28)	60.69 (13.11)
Hyper/Imm.	56.85 (10.46)	43.55 (6.15)	51.26 (11.04)
K-SADS			
N of Symptoms	20.32 (7.13)	7.48 (6.93)	15.00 (9.46)
N of Diagnoses	2.02 (1.11)	.34 (.67)	1.33 (1.26)
N of ADHD Symptoms	11.25 (1.84)	2.85 (2.46)	7.80 (4.58)

Note. Scores reported are T scores unless otherwise stated. SCL-90R Total = SCL-90R Global Severity Index score. Conners Rest/Disorg = Conners Parent Rating Restless/Disorganized subscale. Conners Hyp/Imm = Conners Parent Rating Hyperactive/Immature subscale. N of ADHD Symptoms = number of child ADHD symptoms reported by parent. Range of symptoms for N of ADHD symptoms variable is zero to fourteen.

Schizophrenia, modified to reflect DSM-IV diagnostic criteria (K-SADS; See Appendix C). Parents completed this interview in order to identify psychiatric diagnoses (Orvaschel & Puig-Antich, 1987). The validity of the K-SADS has been demonstrated repeatedly (Hodges, 1993).

Children also were assessed by parent report through two questionnaires: the Child Behavior Checklist (CBCL) and the Conner's Parent Rating Scale (See Appendix C). The CBCL is a measure which screens for patterns of behavior problems including internalizing and externalizing behavior disorder patterns as well as social and attention problems (Achenbach, 1991). It is a widely used measure which has been nationally normed. The Conner's scale is another widely used, nationally normed measure. This scale, however, more specifically taps the areas of impulsivity, restlessness and hyperactivity found in ADHD (Conners, 1990).

Medication

Parents were asked to report any medication for ADHD that their children were taking. Thirty-two children were taking medication, of these 31 were taking Ritalin. Three children were taking Dexadrine. One was taking Depakote. Only one of the comparison children was taking psychotropic medication (Tofranil).

Children's cognitive functioning

In order to assure that there are no cognitive differences between the two groups, children were given the Peabody Picture Vocabulary Test-Revised (PPVT). The PPVT is a widely-used, nationally-normed test that taps receptive verbal intellectual functioning (Dunn & Dunn, 1981).

Children's emotional competence

The following aspects of emotional competence were obtained through the videotape stimulus and its follow-up interview:

Child's appraisal of the stimulus child's emotion. As part of the interview the children completed following the videotape, they were asked directly how they believed the videotaped child was feeling, whether or not they liked the other child and other questions designed to assess awareness of the videotaped child's emotion (See Appendix E). This information was coded for the child's accuracy in identifying the stimulus child's emotion. Children were awarded a score of 0 if they could identify any emotion, a score of 1 if they

incorrectly identified the stimulus child's emotion, a score of 3 if they answered correctly. Children earned a score of 2 if their answer was of the correct emotional valence (for example, saying the child was scared when the child was angry). Children were also presented with a series of five faces demonstrating basic emotions and they were asked to identify which of these was closest to the expression of the stimulus child. This was scored in the same manner as the verbal labeling of emotion described above.

A postcard measure was used as another indicator of emotion appraisal. If the children accurately identified the emotion of the child, then they would be expected to choose a more positive card for the positive child. They were also expected to write more positive statements and longer postcard messages to children whom they liked.

Children also completed a measure of social distance preference. Children were given a model of a classroom and asked to identify where they would choose to sit and where they would choose to put the videotaped child in relation to themselves. Distance between the two placements was calculated as a measure of how much the child liked the videotaped child.

Child's appraisal of own emotion. Children were asked how they felt while watching the videotape. Their report was compared to the observer's report of the child's emotion expression to assess the child's accuracy. The observer noted the subject's emotion just before the videotape ended. In addition, the observer recorded any behaviors that the child made while watching the tape. The observer's report was used as the criterion against which the child's report was measured. Positive emotions were given a score of 3, neutral emotions a score of 2, and negative emotions were given a score of 1. A 0 was assigned if the child could not identify his or her own emotion. This same scale was used for the observer's report of the child's emotion. A difference score was then calculated to assess the accuracy of the child's report.

Child's emotion expression and regulation. The observer's report of the child's behavior was used to assess how susceptible the child was to the positive or negative influence of the video child's affect. The observer noted the child's apparent emotion before the video and again when the video was nearly complete. The degree to which the child's emotion changed was scored on a three point scale by the observers. This points were high, medium, and low expression change and allowed the observers a more

subjective response to the observed behavior than other measures did. This allowed the observers to take qualitative aspects of behavior neglected by other variables into account. Observers also counted the number of times that a child's expression changed during the videotape. Observers also reported the degree to which the child was off-task during the videotape.

The following are measures of emotional competence derived from instruments other than those involving the videotape stimulus. These measures permitted a comparison between "cold" cognition and the "hot" cognition of the videotaped situation.

Appraisal of prototypical expressions. Children viewed a series of 14 prototypical pictures of facial expression. The faces were shown in random order between subjects.The pictures contained five faces with pure emotions (happy, angry, sad, scared, and surprised) and nine that contain blends of two of each of the primary emotions (i.e., happy-sad, surprised-scared). The faces are based on Ekman's prototypical emotions, but have been altered to more closely match the expressions and facial structure of children. The subjects' responses were assessed for accuracy.

Appraisal of auditory emotion cues. Children completed an auditory sensitivity measure. They listened to four brief audiotaped conversations and were asked the feeling being expressed in each and the motivation behind the emotion. Each vignette expressed a different emotion: happy, sad, anxious, and angry. This measure (Rothenberg, 1970) yields scores for each of the separate vignettes and a total score. The total score was used in this case.

Parent's emotional competence

The following aspects of emotional competence were assessed via the videotape stimulus and its follow-up interview:

Parent's appraisal of the stimulus child's emotion. After viewing the stimulus tape, parents answered questions about their affective response to the stimulus child, such as "Is this a child with whom you would want your son/daughter to be friends?" as well as questions about how the stimulus child felt, whether or not their child would like this boy/girl. Parental responses were assessed for how accurately the parents appraised the videotaped child's emotion. Parental responses were scored in the same manner as the children's appraisal of the stimulus child. Parents also were directly asked to identify the

emotion of the stimulus child and to pick out a picture showing the stimulus child's emotion. These responses were scored in the same manner as the children's answers.

Parent's appraisal of own emotion. Parents were asked how they felt while watching the videotape. Their responses were compared to the observer's report of the parents' emotion expression in order to assess the accuracy of the parents' reports. The observer noted the parents' emotions just before the videotape ended. In addition, the observer recorded any behaviors that the parents made while watching the tape. The observer's report was used as the criterion against which the parents' appraisal of their own emotions report was measured. Positive emotions were given a score of 3, neutral emotions a score of 2, and negative emotions were given a score of 1. A 0 was awarded if the parent could not identify his or her own emotion. This same scale was used for the observer's report of the parent's emotion. A difference score was calculated to asses the parents' accuracy.

Parent's emotion expression and regulation: Parents were asked how they would regulate the situation if their child and the video child were actually together, and how they believed that their child responded to the video (See Appendix E). The degree to which the parents' facial expressions changed was recorded on a three point scale. The number of facial expression changes was noted as well by the observers. In addition, the observer's noted the degree to which parents were off-task during the videotape and whether or not they spoke during the tape.

Procedure

Children and at least one parent each were recruited for the study through ADHD support groups and advertisements. In addition, some comparison children were recruited through peer nomination by ADHD subjects. All children were in elementary or middle school at the time of participation.

Three researchers met with each family in a laboratory setting. Two of the experimenters were directly involved in working with the family. The third experimenter was unaware of whether or not the child had a diagnosis and did not know the condition (positive or negative) of the videotape.

Prior to beginning the study, parents received consent forms which experimenters went over in detail (See Appendix A). Of primary concern was that parents be informed

of the voluntary and confidential nature of the study. Children received their own form which informed them that they had the right to assent or decline to participate. All children assented to participation.

The first researcher, an advanced graduate student trained in interviewing, then met with the parent. The parent completed the K-SADS and adult ADHD interviews. The parent then viewed the videotape that the child saw. While the parent was viewing the tape, the third experimenter immediately coded the parent's reaction to it. The parent then answered several questions about the stimulus child seen on the tape. The parent then completed the CBCL and SCL-90R questionnaires, a family information sheet, and the emotion identification task. At the end of the session, parents received feedback on the diagnostic interviews. If there were any significant elevations (above the 95th percentile on the internalizing or externalizing scales on the CBCL) which had not been discussed through the diagnostic interviews, parents were called after the measure had been scored to discuss the results.

Meanwhile, the second experimenter met with the child in another room. The child first completed the PPVT and then viewed the videotape of the stimulus child. While the child was viewing the videotape, the third experimenter immediately coded the subject's reaction. After viewing the tape, the subject was given an array of postcards from which to choose and was asked to write a note to the stimulus child. The child was then asked a series of questions about the stimulus child and the subject's impression of him or her, as well as how the subject thinks he or she responded. The subject then completed the emotion identification task.

All parents and children were debriefed and given the opportunity to ask questions. Families were paid $15 for their time and participating children received a small gift.

The purpose of this study was twofold. First, the project attempted to replicate previous findings about the nature of emotional competence deficits in children with ADHD. Therefore, it was expected that children with ADHD would be less adept at emotion appraisal in both themselves and others, and less skilled at emotion regulation.

The project also explored the relationship between emotional competence in parents and their ADHD children. Because parents are so influential in teaching their children how to think, feel, and respond, parents may teach their children the skills associated with

emotion competence that the parents themselves demonstrate. Therefore, parents of children with ADHD were expected to show the same deficits in emotion competence that their children show.

Hypothesis I: Children with ADHD will demonstrate a specific pattern of emotional competence deficits when compared to comparison group children.

Emotion expression

- Children with ADHD will demonstrate a greater number and a higher subjective degree of emotion changes than comparison children.

Emotion appraisal

- Children with ADHD will have difficulty appraising emotion in themselves. They will be less accurate than comparison children when their self appraisals are compared with observer's reports of their emotion.
- Children with ADHD will be less able than comparison children to identify the emotions of others. ADHD children will rate the stimulus child in the negative condition as being more positive than he/she actually was. This deficit in appraisal will be more pronounced in appraisals of the videotaped stimulus and the auditory sensitivity measure than the drawings of facial expressions.

Emotion regulation

- Further, these children will have difficulties with emotion regulation compared to non-ADHD children. In particular, they will be more susceptible than the comparison group to emotion contagion from the videotaped child and will more often begin to show positive or negative behaviors similar to the videotaped child. They will also demonstrate more off-task behavior and speak more during the videotape than comparison children.

Hypothesis II: Parents of children with ADHD will show the same basic pattern of emotion competence deficits that their children do.

Emotion expression

- Parents of ADHD children will demonstrate a greater number of emotion expression changes and a higher rating of subjective change.

Emotion appraisal

- The parents of children with ADHD are expected to be less able than comparison

group parents to identify emotions in themselves accurately when compared to observer's reports of their emotion.

•Parents of ADHD children will be less able to identify the emotions of others. Such parents will rate the stimulus child in the negative condition as being more positive than he/she actually was. This deficit in appraisal will be more pronounced when the ADHD children's parents are asked to appraise the videotaped child than the still drawings.

•Further, parents of these children will have difficulties with emotion regulation. In particular, they will also demonstrate more off-task behavior and speak more during the videotape.

Chapter Four

Results

Child and Parent Psychopathology

Prior to testing hypotheses, the children's diagnoses reported by parents were confirmed through examination of the CBCL and K-SADS. The degree of parental distress due to psychopathology and the number of ADHD symptoms demonstrated by the parents were also assessed. The parents were quite consistent in reporting psychopathology in their children, with significant correlations between the measures (See Table 4). It is also apparent that parents who perceived more psychopathology in their children also reported more symptoms in themselves. However, the number of ADHD symptoms demonstrated by the parents is unrelated to the number reported in their children (See Table 5).

Cognitive functioning

The cognitive ability of the two groups of children was compared to assure that both groups were of roughly the same cognitive level as measured by the PPVT and, indeed, this proved to be the case [t (1,68)=.03, p = .98, M = 101.88 for ADHD children, M = 101.76 for comparison children].

Children's emotional competence

Children's emotion expression. Changes in emotion expression were analyzed using a repeated measures ANOVA, with ADHD status as the between groups factor and the two expression indices, one the number of expression changes and the other the observer's subjective rating of emotion change, as the between subjects factors. (See Table 6.) The two within subjects measures were viewed as two administrations of an overall emotion expression measure. The number of emotion expression changes was unrelated to whether or not children had ADHD [F (1, 59) = 0.01, p = .89]. However, there was a trend that observer's reported a greater degree of emotion change in children with ADHD than comparison children [F (1, 59) = 3.11, p < .10].

Children's appraisal of own emotion. The children were asked to identify how they felt during the videotape stimulus. Overall, the two groups did not differ in accuracy of reporting their facial expression, t (68) = -1.09, p = .28, M = 2.20 for ADHD children, M = 2.69 for non-ADHD children.

Table 4

Relations among child and parent measures of psychopathology

	Parent Measures	
	SCL-90R Total	Adult Conners
Child Measures		
K-SADS Symptoms	.28 $p < .05$	.21 $p < .10$
ADHD Symptoms	.27 $p < .05$	.08 $p = .74$
CBCL Total	.45 $p < .01$	.17 $p = .16$
Conners Rest/Disorg	.15 $p = .22$	.00 $p = .98$
Conners Hyp/Imm	.31 $p < .05$	.20 $p < .10$

Note. K-SADS Symptoms = number of symptoms endorsed by the parents through the entire modified K-SADS interview. ADHD symptoms = number of child's symptoms reported by parents. CBCL Total = CBCL overall T-score. Conners Rest/Disorg = T-score of the restless/disorganized subscale of the Conners child measure. Conners Hyp/Imm = T-score of the hyperactive/immature subscale of the Conners child measure. SCL-90R Total = T-score of the SCL-90R Global Severity Index. Adult Conners = total score endorsed by parents on the modified Conners measure.

Table 5

Relations among child measures of psychopathology

	ADHD Symptoms	CBCL Total	Conners Rest/Disorg	Conners Hyp/Imm
K-SADS Symptoms	.82 $p < .01$	.73 $p < .01$	.57 $p < .01$	.73 $p < .01$
ADHD Symptoms	- -	.73 $p < .01$	.75 $p < .01$	.64 $p < .01$
CBCL Total	- -	- -	.63 $p < .01$	.69 $p < .01$
Conners Rest/Disorg	- -	- -	- -	.70 $p < .01$
Conners Hyp/Imm	- -	- -	- -	- -

Note. K-SADS Symptoms = number of symptoms endorsed by the parents through the entire modified K-SADS interview. ADHD symptoms = number of child's symptoms reported by parents. CBCL Total = CBCL overall T-score. Conners Rest/Disorg = T-score of the restless/disorganized subscale of the Conners child measure. Conners Hyp/Imm = T-score of the hyperactive/immature subscale of the Conners child measure.

Table 6

Measures of children's emotion expression

	ADHD		Non-ADHD	
	M	(SD)	M	(SD)
Number	2.67	(2.75)	3.00	(2.76)
Subjective change	1.21	(0.70)	1.82	(2.23)*

Note. Number = number of emotion expression changes. Subjective change = degree of change reported by observers. *Row group means differ, $p < .10$.

Children's appraisal of others' emotions.

Children's ability to identify the emotion of the stimulus child was assessed through a repeated measures ANCOVA with ADHD status and the condition of the videotape (positive vs. negative) as between subjects factors, and emotion appraisal factors as the within subjects component. Measures included the child's identification of the stimulus tape emotion through words and also through emotion pictures, the desired distance from the stimulus child in the classroom, the number of words written to the stimulus child, and the postcard choice. Each of the within subjects measures was viewed as one administration of measures reflecting emotion appraisal. Age was used as a covariate because traditionally younger children are less adept at identifying emotions. Cognitive functioning was also used as a covariate because it was expected to be related to the number of words written on the card.The two groups did not differ in their ability to identify the emotion of the stimulus child, either in pictures of emotions [$F(1, 51) = .32$, $p = .58$] or in descriptions of emotions [$F(1, 51) = .19$, $p = .67$]. The ability to describe was not affected by the video condition, although there was a main effect for the ability to identify emotion indicating that both groups of children were better able to identify emotions [$F(1, 51) = 4.98$, $p < .05$] and pictures of emotions [$F(1, 51) = 6.11$, $p < .05$] for the positive affect stimulus child.

However, the two groups differed in other areas of appraisal of the videotaped child.

Table 7

Measures of children's appraisal of other's emotions

	ADHD		Non-ADHD	
	M	(SD)	M	(SD)
Video Stimulus				
Picture identification	2.29	(0.84)	2.45	(0.87)
Description	2.51	(1.36)	2.38	(0.86)
Preference for child	1.07	(0.35)	1.41	(0.75)*
Classroom distance	2.90	(2.31)	3.83	(4.03)
Words written	21.63	(14.53)	24.52	(17.74)
Postcard	5.45	(3.06)	5.08	(2.84)
Other measures				
Auditory sensitivity	5.54	(4.60)	7.72	(3.57)*
Faces task	27.43	(3.52)	27.66	(3.21)

Note. Picture identification = degree to which child labeled emotion of video stimulus child. Description = how accurately child identified emotion picture of video stimulus child. Preference for child = child's reported like or dislike for stimulus child. Classroom distance = distance that child placed self from stimulus child in classroom drawing. Words written = number of words on postcard. Postcard = postcard choice of child.

* Row group means differ, $p < .05$.

Table 8

Measures of children's emotional regulation

	ADHD		Non-ADHD	
	M	(SD)	M	(SD)
Teacher distance	5.77	(4.69)	4.45	(3.52)
Off-task	.69	(0.98)	.46	(0.84)
Verbalization	.40	(0.96)	.29	(0.71)

Note. Teacher distance = distance that child placed self from teacher in classroom drawing. Off-task = off-task behavior for child during video. Verbalization = degree of verbalization of child during video.

Children with ADHD were more likely to report liking the stimulus child, regardless of the affect conveyed by the video [$F(1, 51) = 6.15$, $p < .05$). The analysis described above indicated they were also more likely to choose to sit next to the stimulus child in a classroom than comparison children, particularly for the negative affect video condition [$F(1, 51) = 6.79$. $p < .05$]. An ANCOVA which controlled for age and cognitive functioning also found that ADHD children wrote more words to the negative affect child and non-ADHD children wrote more to positive affect children [$F(1, 49) = 1.53$, $p < .05$). These results suggest that the ADHD children were less attuned to the negative affect being displayed by the stimulus child (See Table 7).

A repeated measures ANCOVA with ADHD status as the between subjects factor and the faces emotion identification task and the auditory sensitivity measure as the within subjects measures was used to assess the children's ability to identify children's emotions apart from the video task. Again, age was used as a covariate because children's ability to identify emotions develops with age. In this case, cognitive functioning was not used because it was not expected to be related to this ability. Children with ADHD were less accurate in identifying emotions on the auditory sensitivity task than

children without ADHD ($p < .05$). A similar pattern was not observed on the faces emotion identification task ($p = .94$).

Children's emotion regulation.

Emotion regulation was assessed through a repeated measures ANOVA with ADHD status and videotape condition as the between subjects variables and the degree of off-task behavior and amount of talking as the within subjects variables. (See Table 8.) The within subjects measures were viewed as separate administrations of an overall emotion regulation construct. Age and cognitive functioning were not expected to be related to this task. Children with ADHD were not reported by observers to be any more off-task than comparison children during the videotape [$F(1, 59) = .92$, $p = .34$]. This was not affected by the condition of the videotape. Children with ADHD were also no more likely to speak during the videotape than comparison children [$F(1, 59) = .22$, $p = .64$].

Following this initial examination of the hypotheses related to children's emotional competence according to whether children met criteria for ADHD, analyses of the relations between other, continuous, measures of psychopathology were conducted. Examination of the distribution of the number of ADHD symptoms in all subjects indicated that symptoms are well distributed and continuous throughout all subjects. Some of these analyses clarify the results described above (See Table 9).

Children's appraisal of others' emotions. Overall, children who were more off task during the videotape were less able to identify the emotion being shown. Children whose expressions changed more often were also less able to identify the emotion being shown. In addition, children whose parents were off-task more during the videotape were also less able to identify the emotion being shown. Thus, the link between ADHD and emotion appraisal skills is suggested, but not demonstrated.

Poor performance by children on the various measures of appraisal was also related to poor performance on other measures. Scores on the auditory sensitivity measure are related to scores on the faces identification task. Lower scores on the auditory sensitivity task are correlated with more symptoms of ADHD and higher scores on the Conners Restless/ Disorganized subscale.

Multiple regression with ADHD symptoms as the criterion variable and several measures of identification of emotion indicated that the auditory sensitivity measure was the

Table 9

Relations among child measures of emotional competence

	Description of emotion	Picture ID	Preference for child	Number of changes	Classroom distance	Teacher distance
Description of emotion	-	.40	.01	.14	-.02	.20
	-	$p < .01$	$p = .91$	$p = .26$	$p = .85$	$p < .10$
Picture ID	-	-	.28	.15	-.14	.00
	-	-	$p < .05$	$p = .23$	$p = .26$	$p = .97$
Preference for child	-	-	-	.44	.29	-.14
	-	-	-	$p < .01$	$p < .05$	$p = .24$
Number of changes	-	-	-	-	.09	.04
	-	-	-	-	$p = .49$	$p = .77$
Classroom distance	-	-	-	-	-	.16
	-	-	-	-	-	$p = .18$
Faces task	.21	.16	.11	.03	.05	.00
	$p < .10$	$p = .19$	$p = .36$	$p = .83$	$p = .69$	$p = .99$
Words written	.36	.06	-.13	.15	.04	.18
	$p < .01$	$p = .60$	$p = .31$	$p = .21$	$p = .75$	$p = .13$
Off-task	-.29	.10	.21	.10	.04	-.10
	$p < .05$	$p = .41$	$p < .10$	$p = .42$	$p = .75$	$p = .43$
Postcard	.12	-.10	-.09	.05	.03	.10
	$p = .36$	$p = .45$	$p = .48$	$p = .70$	$p = .84$	$p = .43$
Auditory sensitivity	.17	-.06	-.04	-.00	.05	.03
	$p = .17$	$p = .64$	$p = .77$	$p = .97$	$p = .65$	$p = .78$
Subjective change	-.30	.06	.16	.08	-.08	-.22
	$p < .01$	$p = .60$	$p = .22$	$p = .51$	$p = .55$	$p < .10$
Verb.	-.45	.14	.19	.14	-.12	-.25
	$p < .01$	$p = .25$	$p = .13$	$p = .27$	$p = .31$	$p < .05$

Note. Picture ID = accuracy in labeling emotion of video stimulus child. Description of emotion = accuracy in identifying emotion picture of stimulus child. Preference for child = reported liking of stimulus child. Number of changes = number of expression changes during video. Classroom distance = distance that child placed self from stimulus child in drawing. Teacher distance = distance that child placed self from teacher in drawing. Faces task = faces emotion identification task score. Words written = number of words on postcard. Off-task = off-task behavior for child during video. Postcard = postcard choice of child.

Table 9 continued

	Faces task	Words written	Off-task	Postcard	Auditory sensitivity	Subjective change
Faces task	-	-.05	-.13	.05	.33	-.02
	-	$p = .70$	$p = .32$	$p = .72$	$p < .01$	$p = .85$
Words written	-	-	-.47	-.03	.43	-.22
	-	-	$p < .01$	$p = .85$	$p < .01$	$p < .10$
Off-task	-	-	-	-.08	-.27	.29
	-	-	-	$p = .55$	$p < .05$	$p < .05$
Postcard	-	-	-	-	.15	-.25
	-	-	-	-	$p = .26$	$p < .10$
Auditory sensitivity	-	-	-	-	-	.04
	-	-	-	-	-	$p = .77$
Verb	-.11	-.29	.41	-.30	-.15	.38
	$p = .38$	$p < .01$	$p < .01$	$p < .05$	$p = .24$	$p < .01$

Note. Faces task = child faces emotion identification task score. Words written = number of words on postcard. Off-task = off-task behavior for child during video. Postcard = postcard choice of child. Verb = degree of verbalization of child during video.

Table 10

Multiple regression with auditory sensitivity as the dependent variable

	R	R^2	F(df)	beta	p
Age	.45	.20	F(1,61) = 15.10	.45	< .01
SCL-90R	.46	.21	F(2,60) = 8.17	-.12	< .01
ADHDSX	.53	.28	F(3,59) = 7.79	-.27	< .01
Faces task	.59	.34	F(4,58) = 7.59	.25	< .01

Note. SCL-90R = SCL-90R Global Severity Index. ADHDSX = number of child's ADHD symptoms reported by parents. Faces task = faces emotion identification task.

best predictor of ADHD symptoms. Other predictors entered but not significant in the equation were the child's ability to identify the stimulus child's emotion through words and pictures, the faces emotion identification task, the postcard choice of the child, and the distance the child placed him/herself from the stimulus child in the classroom [$R = .27$, $R^2 = .07$, $F(1,57) = 4.45$, $p = .04$, Beta $= .14$]. There is overlap among some of these measures. When a multiple regression was completed with the auditory sensitivity measure as the dependent variable, the results indicated that better performance on the auditory sensitivity measure is predicted by the age of the subject, the number of symptoms of ADHD, and performance on the faces identification task ($R = .58$, $p < .01$; See Table 10).

Children's emotion regulation. Children who were off-task also had lower scores on the auditory sensitivity task, again suggesting the possibility of inattention. These children also had more emotion changes as reported by the observers and talked more during the video.

Parental emotional competence

Parental emotion expression. Changes in emotion expression were analyzed using a repeated measures ANOVA, with ADHD status of the child and video condition as the between groups measures and the two expressivity indices as the within subjects factors (See

Table 11

Measures of parents' emotional expression

	ADHD		Non-ADHD	
	M	(SD)	M	(SD)
Number of changes	3.62	(2.64)	3.64	(2.11)
Subjective change	1.38	(0.49)	1.32	(0.55)*

Note. Number of changes = parent's number of expression changes during video. Subjective change = Subjective degree of expression change in parent during video.
* Row group means differ, $p < .10$.

Table 11). Again, the two expressivity measures were viewed as separate administrations of an overall expression construct. Emotion expression was assessed during the videotape stimulus by observers who counted the gross number of expression changes and the degree of subjective expression change. The present study did not find that the number of emotion expression changes was directly related to whether or not parents had children with ADHD [$F(1, 61) = .05$, $p = .71$]. However, there was a trend that observers reported a greater degree of emotion change in parents of children with ADHD than comparison children's parents [$F(1, 61) = 3.75$, $p < .10$]. Parents of ADHD children were described by observers as being more positive in emotion expression regardless of the condition of the video [$F(1, 53) = 4.37$, $p < .05$).

Parental appraisal of own emotion. The parents were asked to identify how they felt during the videotape stimulus. Overall, the two groups did not differ in accuracy. [$t(68) = -1.09$, $p = .24$, $M = 1.95$ for ADHD children's parents, $M = 2.41$ for non-ADHD children's parents].

Parental appraisal of others' emotions. Parental appraisal of others' emotions was analyzed using a repeated measures ANOVA with child's ADHD status as the between subjects measure and the parent's identification of the stimulus child's emotion through words and pictures, the parent's reported liking for the stimulus child, and the parent's

Table 12

Measures of parents' appraisal of others' emotions

	ADHD		Non-ADHD	
	M	(SD)	M	(SD)
Video stimulus				
Description of emotion	2.29	(1.87)	2.24	(2.26)
Picture ID	2.61	(1.61)	2.28	(2.28)
Friend for child	1.38	(0.54)	1.46	(0.58)
Preference for child	1.23	(0.49)	1.26	(0.59)
Other measure				
Faces task	26.61	(5.36)	28.59	3.30*

Note. Faces task = parent faces emotion identification task score. Description of emotion = degree to which parent labeled emotion of video stimulus child. Picture ID = how accurately parent identified emotion picture of video stimulus child. Friend for child = does parent want stimulus child to be friends with subject child. Preference for child = parent's reported like or dislike for stimulus child.

* Row group means differ, $p < .10$.

desire for their child to be friends with the stimulus child as within subjects variables (See Table 12). The within subjects measures were viewed as separate administrations of an overall appraisal construct. Overall, this indicated that the two groups of parents did not differ in their ability to identify the emotion of the stimulus child, either in description [$F(1, 53) = 1.50$, $p = .22$] or through picture [$F(1, 53) = 1.34$, $p = .25$), regardless of the videotape condition. There was a main effect for video condition with parents reporting liking the positive affect child better [$F(1, 53) = 11.77$, $p < .01$] and wanting this child to be friends with their child [$F(1, 53) = 17.47$, $p < .01$). There was a trend for parents of ADHD children to perform more poorly on the faces identification task, $t(66) = .98$, $p < .10$.

Parental emotion regulation. Parents of children with ADHD were not reported by observers to be any more off-task than parents of comparison children during the videotape [$t(63) = .51$, $p = .71$, $M = .10$ for parents of ADHD children, $M = .15$ for parents of non-ADHD children]. This was not affected by the condition of the videotape. Because so few parents spoke during the videotape, this variable was dropped from the analyses.

The relations between parent and child measures

Overall, the pattern of results for parents and children suggests some of the mechanisms may be present in children with ADHD and their parents. Further exploration of the match between individual pairs of parents and children is useful.

Emotion appraisal: Children whose parents were off task more during the videotape were less able to identify the emotion being shown in the videotape. Parents showed a similar pattern. Parents who were more off task were less able to identify the emotion shown (See Table 13).

Parents report of liking the child or not was also related to how well their child liked the stimulus child. Parents who liked the child and wanted the two children to be friends had children who wanted to sit close to the stimulus child in school ($r = .25$, $p < .05$).

Relations between the skills of parents and their children were clearer in the faces emotion identification task. Children's performance on the faces task were affected by their performance on other competence measures. However, they are even more strongly related to their parents' performance. Children's scores on the faces task were best predicted by a combination of a parent performance, the auditory sensitivity measure, parents desires for

Table 13

Relations among parent measures of emotional competence

	Faces task	Off-task	Description of emotion	Picture ID	Friend for child	Preference for child	Number of changes
Faces task	-	.02	.07	-.01	-.02	.01	.00
	-	$p = .90$	$p = .60$	$p = .94$	$p = .90$	$p = .91$	$p = .97$
Off-task	-	-	.70	-.27	.41	-.16	-.11
	-	-	$p < .01$	$p < .05$	$p < .01$	$p = .23$	$p = .38$
Description of emotion	-	-	-	-.25	.18	-.08	-.06
	-	-	-	$p < .05$	$p = .15$	$p = .54$	$p = .60$
Picture ID	-	-	-	-	-.03	.30	.17
	-	-	-	-	$p = .82$	$p < .01$	$p = .16$
Friend for child	-	-	-	-	-	.30	-.13
	-	-	-	-	-	$p < .05$	$p = .30$
Preference for child	-	-	-	-	-	-	.01
	-	-	-	-	-	-	$p = .93$
Subjective change	.01	.22	.17	.07	.05	-.09	.68
	$p = .92$	$p < .10$	$p = .16$	$p = .59$	$p = .70$	$p = .49$	$p < .01$

Note. Faces task = parent faces emotion identification task score. Off-task = off-task behavior for parent during video. Description of emotion = degree to which parent labeled emotion of video stimulus child. Picture ID = how accurately parent identified emotion picture of video stimulus child. Friend for child = does parent want stimulus child to be friends with subject child. Parent preference = parent's reported like or dislike for stimulus child. Parent changes = parent's number of expression changes during video. Parent subjective = Subjective degree of expression change in parent during video.

Table 14

Multiple regression with children's faces identification as the dependent variable

	R	R^2	F (df)	beta	p
Parent faces	.33	.11	F (1, 54) = 6.65	.31	< .01
Auditory sens.	.45	.20	F (2, 53) = 6.64	.43	< .01
Friend	.51	.26	F (3, 52) = 6.13	-.34	< .01
Words written	.59	.35	F (4, 51) = 6.98	-.35	< .01

Note. Parent faces = parent faces emotion identification task. Auditory sens. = auditory sensitivity measure total score. Friend = whether or not parent wanted stimulus child to be friends with subject. Words written = number of words written on postcard.

their child to be friends with the video child, and the number of words that the child wrote on the postcard (See Table 14). This result is unrelated to the presence of ADHD in the child. Lower child scores are related to more ADHD symptoms in parents ($r = -.28$, $p < .05$).

Emotion regulation. Off-task behavior in children during the videotape stimulus was related to off-task behavior in their parents ($r = .43$, $p < .01$). Parents who were off-task had children who talked more during the video ($r = .63$, $p < .01$), had children who wrote fewer words on the postcard ($r = -.31$, $p < .05$), and who were less able themselves to identify the emotion of the stimulus child ($r = -.27$, $p < .05$). However, this pattern was not directly related to the presence of symptomatology in parent or child. Therefore, although this pattern suggests a relationship to ADHD, it is inconclusive.

Differences between subjects

Overall, there were few differences between subjects. There were no differences between genders. Younger children wrote fewer words on the postcards ($r = .48$, $p < .01$), chose to sit closer to the teacher ($r = .30$, $p < .05$) and had lower scores on the auditory sensitivity measure ($r = .44$, $p < .01$). These differences were not unexpected

and did not differ across groups. Non-white parents performed more poorly on the faces emotion identification task ($r = -.25$, $p < .05$). The reason for this is unclear. No other ethnic differences were identified.

Chapter Five

Discussion

The purpose of this study was to replicate previous findings about the nature of emotional competence deficits in children with ADHD and to explore the relationship between emotional competence in children with ADHD and their parents. It was anticipated that children with ADHD would struggle with emotion appraisal and identification and would demonstrate more changes of emotion in an experimental situation. It was also expected that parents of children with ADHD would show the same deficits in emotion competence that their children show.

Most striking of the results is the strong relationship between parent and child emotional competence. Overall, children and parents are quite similar, regardless of the presence of ADHD in the child. For instance, parents and children are likely to agree on whether or not they like a videotaped child. The fact that parents' and children's abilities to identify facial expressions are strongly related replicates previous research indicating the prominent role that parents play in the acquisition of emotional competence skills. This relationship is a logical one as parents often coach children on appropriate behaviors and reading the emotions of others. The fact that parent and child off-task behaviors during the videotape are correlated suggests that either modeling of behavior, without active intervention, is important in the acquisition of emotional skills or, possibly, that there is a genetic explanation for the children's skill deficits.

Support was found for the hypothesis that children with ADHD would show a specific pattern of emotional competence. There was a trend toward a greater perception by observers of facial expression change in ADHD children while they watched the videotaped child. Further research is required to assess this dimension of emotional competence for a more direct relationship.

In contrast to the hypotheses, no support was found for children with ADHD being less accurate in identifying emotions in themselves. This is quite possibly due to the fact that there was only one self-report measure of emotion in the procedure. Future research should explore this area more fully and assess this dimension through multiple measures.

The lack of a difference in the overt ability to appraise the emotion of the stimulus child could be due to the high numbers of children accurately identifying the emotion. This

is likely due to the strength of the stimulus child's emotion. A more ambiguous or weaker demonstration of emotion might have shown a difference in the two groups' abilities. However, children with ADHD were less adept at identifying the emotions of others. They were more likely to report liking the stimulus child and to want to sit near that child in class, regardless of the affect shown. This suggests that either they were less attuned to the negative affect of the child and perceived it as more positive than it actually was, or they liked the negative affect better than the comparison children. Children with ADHD were less accurate in identifying emotions on the auditory sensitivity task than children without ADHD, but not for the faces identification task. This indicates support for previous research that reported ADHD children have greater difficulty with live situation tasks than with still drawings.

The two groups of children did not differ in the amount of off-task behavior demonstrated. This could be related to the overall low rate of such behavior, possibly due to the fact that there was an adult present while the children watched the videotape. Unsupervised children may have demonstrated a different pattern of behavior. Another possible explanation for this lack of difference could be the high number of ADHD children who were taking behavior altering medication. Although this would not be expected to be related to emotion appraisal, it could affect the amount of off-task behavior and verbalization in the ADHD children. A future study might investigate this possibility.

Although there was no difference between the two groups in the amount of off-task behavior demonstrated, an indirect link between ADHD and the emotion regulation was suggested. Children who were off-task also had lower scores on the auditory sensitivity task and had more emotion changes as reported by the observers and talked more during the video. This pattern of results appears to be related to intuitive ideas of what these deficit patterns should look like. It appears that children who were inattentive and off-task were less successful at emotion appraisal. However, without the specific link to ADHD no conclusions can be made. This pattern, however, indicates the possibility that future research could demonstrate such a link, particularly if one were to assess the children off of their medication.

Parents of ADHD children demonstrated a similar pattern of results. Again there was a trend toward greater expression change perceived by observers in the parents of

ADHD children, with parents of ADHD children expressing more positive emotion during the videotape across conditions of the tape.

As with the children, the two groups of parents did not differ in their ability to identify their own emotions during the videotape stimulus. It is again possible that this is a problem with measurement. Parents were asked only one time for their emotion and this may not have been a large enough sample of their behavior for stable results.

Parents of children with ADHD did not perform more poorly than parents of comparison children when identifying the emotion of stimulus child. There was, however, a trend for them to perform more poorly at the faces identification task. Parents were not asked to complete the auditory sensitivity measure. Thus, although there appears to be a trend in the expected direction, further research is required to confirm this and establish significance. Parents of children with ADHD were not reported by observers to be any more off-task than comparison children during the videotape

The patterns of emotion skills appear somewhat similar for parents of ADHD children and their children themselves. In the area of emotion expression, parents and children showed the same trend toward having observers rate the ADHD subjects as demonstrating a greater subjective degree of emotion change. In the area of emotion appraisal, children with ADHD performed more poorly on various measures of appraisal. Parents showed as similar trend on the faces identification task. For emotion regulation, the pattern is not directly present between the two groups, however, parents who were off-task were more likely to have children who were off-task. As expected, the pattern in the parents is somewhat less prominent. It was expected that adults would have acquired skills that their children had not yet acquired, regardless of diagnosis.

Although this study found some support for the two hypotheses, the support was not as strong as had been expected. The number of trends coupled with the strong relationship between parents' and children's overall ability suggest that the hypotheses could likely be supported through further research.

There were limitations to the current study. First, the paradigm used to test a large share of the hypotheses was a new one. It is possible that it needs further refinement before it can reliably identify differences between the two groups. The number of relations between ADHD and emotional competence based on this measure suggest that the paradigm holds

promise, but needs some adjustment to better highlight group differences.

The parents also were not asked to complete the auditory sensitivity measure. It is possible that this would have provided more information about parents' emotion appraisal abilities. Further, as already stated, both children and parents were only asked once about their own emotions. Additional sampling about their appraisal of their own emotions may have produced greater information in this area.

Another limitation is the fact that the sample was not large enough to investigate sub-groups that might effect results. For example, it might be useful to separate the emotional competence of children with pure ADHD from those who have ADHD co-morbid with another disorder. Also, the parents were the only source of information about symptoms in both themselves and their children. A future study might consider obtaining further observational data in a more naturalistic setting. It would useful, as well, to seek an outside opinion about the child's symptoms from someone who knows the child well, such as a teacher.

Despite the limitations of the study, there are implications from the research. The relationship between parent and child deficits in emotional competence supports previous research indicating the large role parents play in the development of such skills. However, it goes one step further to suggest that children's deficits are directly related to similar problems in their parents. That is, instead of simply saying that parents who have disorders have children who are less emotionally competent, the present study suggests that parents who have children who are less emotionally competent may not have the skills themselves to be able to teach their children. It may not be that parents who children who are less emotionally competent have failed to teach them appropriate skills: they may have, in fact, taught them their own faulty skills. Of course, this requires further research before any conclusion can be drawn.

Children who have emotional competence deficits may have a hard time getting along in school and in life. If they cannot appraise the emotions of others, then they will not understand why a child may reject them. If the child teases on the playground, for instance, he may not understand why other children will not play with him because he cannot tell when they are annoyed. It is possible to teach children these skills (Bennet & Knight, 1996). However, if the child returns to a home where the parent has similar

deficits, it will before difficult for the skills to take root because of a lack of reinforcement.

Thus, the present study suggests that not only children with such deficits will benefit from instruction, but their parents might as well. It is easy to envision training in emotional competence skills as a part of family therapy for the family of an ADHD child. Parent and child could have the skills reinforced simultaneously, increasing the chances that the child will permanently learn the skills.

Therefore, despite the limitations, the present study is an encouraging first step toward establishing a link between the emotional competence of children with ADHD and their parents. Further, the pattern of results for the children with ADHD themselves indicates support for the pattern of deficits established by previous research.

Appendix A

Parent and Child Consent Forms

Project Title: Emotional Competence in Children and Their Parents

Project Director: Dr. Rita J. Casey

Basic Parental Consent

INTRODUCTION:

You are being asked to participate in a research study of children's emotions and behavior. In this project, we hope to learn how children and their parents respond to everyday situations and whether or not ADHD plays a role in how parents and children react. About 100 parents and their children both with and without ADHD will participate in this project.

PROCEDURE:

If you decide to participate in this project, we will ask you to spend about an hour and a half with us today. During the visit, we will ask you to complete several questionnaires about yourself and your child. You will begin today by completing an interview and questionnaire about how you have been feeling emotionally over the last several months. Then, you will watch a videotape of a child and will be asked to answer questions about it. You will also be asked to participate in an emotion identification task. These two tasks are very similar to tasks your child will complete because we want to see how similarly you and your child respond. Next, we will ask you to participate with your child in a puzzle assembly game. This game shows us how parents and children work together. Finally, we will ask you to complete interviews and a rating scale about your child's behavior over the last few months.

While you are completing the tasks above, your child will be in the next room. He/she will complete a measure of language ability. Then, your child will view the same videotape that you will see and will answer questions about it and will complete an emotion identification task. Your child will also participate in the puzzle assembly game. Finally, your child will be asked how he/she responds to different everyday situations.

All of the information will help us to understand individual differences between children in how they behave or understand their emotions. Should we determine that your child demonstrates more behavior problems than is typical for his/her age, we will discuss those problems with you and suggest resources where you may obtain assistance for your child.

RISKS/SIDE EFFECTS:

There should be few risks or discomforts to you or your child with this procedure other than the possible temporary discomfort of discussion personal information or playing a game.

BENEFITS:

There are no special benefits for you or your child as a result of being in this study, except that you as a parent may become more aware of how your child responds emotionally. In the unlikely event that we learn anything very unusual

about your child that might be a problem to him/her now or in the future, we will call this to your attention. If this happens, we will also give you some suggestions about where to get some help

COST OF PARTICIPATION:

It will not cost you or your child anything to participate in this study, except the time and effort that is spent to get here and do the things that we ask you to do.

COMPENSATION:

Your child will receive a small gift as thanks for coming and helping us. We will also reimburse you for your travel expenses in coming to our lab. All families will also be paid $5 an hour for their participation in the study, including travel time (approximately $15). We will send the overall results of the study to participating families at the conclusion of the project.

In the unlikely event of any injury to your child resulting from the research study, no reimbursement, compensation, or free medical care is offered by Wayne State University.

VOLUNTARY PARTICIPATION/WITHDRAWAL:

Participation in this study is completely voluntary and you may quit any time you want to, If you don't want to be in the study, there is no penalty. You are also free to decline to answer any questions or participate in any activity that you so choose.

It is important for us to have the free cooperation of parents and children. Therefore, if you agree to participate, your child is also free to be in the study or not as he/she wishes. If your child doesn't want to be in the study, we will not be able to include you in the project even if you want to do so. If you do decide to participate, we will give you a signed copy of this consent form to keep.

QUESTIONS:

If you have questions about your participation in this study now or in the future, please contact Dr. Casey, Jill Norvilitis, or Patricia Johnson at 577-4667. If you have any questions about your rights as a research subject, Dr. Peter Lichtenberg, Chairman of the Behavioral Investigation Committee can be contacted at 577-1628.

CONFIDENTIALITY:

All information that we obtain from you and your child will be kept strictly confidential and will be stored in a locked file cabinet in the possession of Dr. Rita J. Casey in the Laboratory of Emotional Development. Any reported results from the information that you give us will not identify you or your child. Individual information about you or your child will be released to other persons only with your written consent.

CONSENT TO PARTICIPATE IN RESEARCH STUDY:

If you wish to participate in this study and give permission for your child to participate in this study, please sign on the appropriate line below. Your signature indicates that you have read or have had read to you tall the information about this research study, including the research procedure, possible risks, side effects, and the likelihood of any benefits to your child or yourself. Furthermore, your signature indicates that you understand the content and meaning of this information, and have had it explained to your

satisfaction. Finally, by signing you indicate that you will be given a signed copy of this consent form.

SIGNATURE OF ADULT
(PARENT) SUBJECT: _____ DATE: _____

SIGNATURE OF WITNESS: _____ DATE: _____

SIGNATURE OF INVESTIGATOR OR
SPECIFIED DESIGNEE: _____ DATE: _____

Project Title: Emotional Competence in Children and Their Parents

Project Director: Dr. Rita J. Casey

Child Consent Form

INTRODUCTION:

Children are like their parents in some ways and different in others. We would like to find out how you and your parent are alike and different. We want to get to know both of you to find out how each of you reacts in everyday situations.

PROCEDURE:

We would like you to talk and play with us today. We will ask you some questions about how you react to everyday things. We have a puzzle game for you to complete with your parent. We will show you a videotape and ask you some questions about it. We might make a videotape of you today while you are here.

VOLUNTARY PARTICIPATION/WITHDRAWAL:

You don't have to do this if you don't want to. If there is something we ask you to do and you don't want to do it, you don't have to. Also, you can quit any time you want to, and it will be OK.

CONFIDENTIALITY:

We also promise that we won't talk about you to anyone else except your parents.

CONSENT TO PARTICIPATE IN RESEARCH STUDY:

If you want to help us and be in our project, write your name on this piece of paper. By writing your name, it means that you want to be in the study.

NAME: _____

SIGNATURE OF CHILD: _____ DATE: _____

SIGNATURE OF INVESTIGATOR
OR SPECIFIED DESIGNEE: _____ DATE: _____

Appendix B

Measures of Parental Psychopathology

Please Note

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Appendix C

Measures of Child Psychopathology

Appendix D

Scripts of the Stimulus Videotapes

Script Assessment Questionnaire

Boy___Girl___ Position on Tape #___

What general emotion was being expressed in this tape?

How strong was the expression?

1.....2.....3.....4.....5.....6.....7.....8.....9.....10

Very weak pretty weak weak strong pretty strong Very strong

How believable was the acting?

1.....2.....3.....4.....5.....6.....7.....8.....9.....10

Not at all -Mostly unbelievable- Not horrible acting- Passing- Very Believable

If the ratings of expression of emotion work out, should I use this take or get rid of it?

Interviewer: O.K. I want to start this with you just saying who you are and why you want to do this.

Child: My name is _____ and I am making this videotape because I want to collect postcards from all over. My mom thought that this would be a good way to have a lot of other kids send me postcards.

Interviewer: Why don't you describe yourself and your interests so everybody can know what sort of things you're interested in. Why don't you start with talking about why you collect postcards?

Child: Well, I have collected things for a long time. My mom says that I collect collections. I collect baseball cards, POGs, interesting-looking erasers-all sorts of stuff. I saw somebody with a postcard collection and thought that it looked neat, but I thought it would be better if the postcards had been sent to him instead of him buying them himself.

Interviewer: So you're not trying to set a record or anything?

Child: No. I just like postcards. I think I'd also like a bunch of pen pals that I could write back and forth to.

Interviewer: Don't you think that it will be hard to be pen pals with all of the kids who write to you?

Child: Of course! But I promise to send everyone who writes to me at least one postcard back. I mean, they're being so nice to help me out.

Interviewer: So what are you looking for in these postcards?

Child: I'd like to find out about other people: what they like to do, if they like school, if they have brothers or sisters or pets, and what they're like.

Interviewer: That's a tall order for one postcard! Why don't you go back to describing yourself?

Child: I'm in fifth grade at Alger School in Grand Rapids. My teacher's name is Mrs. Sherman. She's nice and she asked if she could see the postcards that I get. I have a brother and a sister. We usually get along all right. I have a dog named Rowdy and a cat named Spot.

Interviewer: What do you like to do for fun?

Child: I like to play softball and soccer. In the neighborhood, we like to play Pickle. Sometimes I like to do more quiet sorts of stuff, like play Nintendo and board games. I also like to read a lot.

Interviewer: Do you have a favorite book?

Child: Not really, but right now I like A Wrinkle in Time.

Interviewer: You talked a little about school. What do you like best about it? What is your favorite subject?

Child: My favorite thing about school is seeing my friends everyday. Some of them ride

a bus to school, so I don't get to see them much in the summer. But I like school, too. My favorite subject is science. I think that it is neat to make things

Interviewer: Like what sorts of things?

Child: Last week we made a volcano. First we made the volcano itself out of paper maché. Then we painted it. After that, we put baking soda, food coloring and vinegar in it and watched it go. My mom said that we could try it at home sometime.

Interviewer: That does sound like fun! Do you have a least favorite subject?

Child: I don't really like math. It is just boring; I guess it's o.k.

Interviewer: Well, we're almost out of time. Is there anything else that you would like to add before we finish?

Child: I want to thank all of the kids that are going to write me the postcards. If you're ever in Grand Rapids, you should come over 'cause I'd like to meet you in person. Maybe we could go to the park and play baseball or something. (smiles)

Interviewer: O.K. I want to start this with you just saying who you are and why you want to do this.

Child: My name is _____ and I am making this videotape because my mom made me. She thought that this would get a lot of other kids send me postcards.

Interviewer: Why don't you describe yourself and your interests so everybody can know what sort of things you're interested in. Why don't you start with talking about why you collect postcards?

Child: I have collected things for a long time. My mom says that I collect junk. I like to collect spiders and bottle caps. Mom saw somebody with a postcard collection. She thought that this would be collection that isn't junk. I don't really care one way or the other, but she's making me.

Interviewer: So you're not trying to set a record or anything?

Child: No. I just have to do this. Then she is even going to make me write everybody back.

Interviewer: Don't you think that it will be hard to be pen pals with all of the kids who write to you?

Child: Of course! But I have to send everyone who writes to me at least one postcard back. I can just see all the afternoons I'll have to spend inside writing these stupid letters.

Interviewer: So what are you looking for in these postcards?

Child: I don't care. Whatever they say, I guess. Maybe what they like to do and if they have brothers or sisters or pets.

Interviewer: Why don't you go back to describing yourself?

Child: I'm in fifth grade at Alger School in Grand Rapids. My teacher's name is Mrs. Sherman. She's not bad and she wants to see the postcards that I get. I have a brother and a sister. We usually fight a lot. I have a dog named Rowdy and a cat named Spot.

Interviewer: What do you like to do for fun?

Child: I like to play softball and soccer. In the neighborhood, we like to play Pickle. Sometimes I like to do stuff inside, like play Nintendo. I read sometimes.

Interviewer: Do you have a favorite book?

Child: Not really, but right now I'm in the middle of A Wrinkle in Time.

Interviewer: You talked a little about school. What do you like best about it? What is your favorite subject?

Child: My favorite thing about school is going home. School's all right. I like gym and recess. I like to run around a lot. Sometimes in science we make stuff and that can be o.k.

Interviewer: What sorts of things do you make?

Child: Last week we made a volcano. We made the volcano itself out of paper maché and painted it. After that, we put baking soda, food coloring and vinegar in it and watched it go. My mom said that we could try it at home sometime, but I think it would be dumb to try it outside of school. I mean, what is the point?

Interviewer: Do you have a least favorite subject?

Child: I don't really like math. It is so boring that I fall asleep. (aside) Sometimes I get so bored that I throw paper at the girls.

Interviewer: Well, we're almost out of time. Is there anything else that you would like to add before we finish?

Child: My mother said I had to say thank you to the kids who are writing me. Even though I think this is dumb, if you are ever by my house, maybe you could come over to play.

Appendix E

Videotape Observation Questionnaires and Post-Videotape Interviews for Parents and Children

Observation Instructions and Report for Child

Subject Number____

Have another member of the lab team set up the videotape for you. You are not to know whether or not the child is seeing the positive or negative affect child while you observe. Wear headphones if you can hear the monitor through the glass. You should go behind the glass as soon as the family arrives so that you will also be blind to the diagnosis of the child beforehand. If you figure it out right away, that's o.k. because that is valuable information to us.

As the child watches the videotape, answer the following questions:

How many times did the child's facial expression make a marked change? (Keep a tally)

What was the child's predominant facial expression at/before the start of the tape?

What was the child's predominant facial expression at/after the end of the tape?

On a scale of 1 to 10 where 1 is no change at all and 10 is continuous change, how often did the child's facial expression change?

Did the child do anything unusual during the video (i.e., walk around, ape at the mirror, etc.)?

Without looking at the tape, which condition do you think the child was in (positive or negative)?

Did the child say anything during the tape?___Yes___No
If yes, have the child experimenter answer the following question.

What comments did the child make during the tape? Would you characterize them as positive or negative? What tone of voice was used?

Observation Instructions and Report for Parent

Subject Number____

If they're not too busy, have another member of the lab team set up the videotape for you. You are not to know whether or not the parent is seeing the positive or negative affect child while you observe. Wear headphones if you can hear the monitor through the glass. You should go behind the glass as soon as the family arrives so that you will also be blind to the diagnosis of the child beforehand. If you figure it out right away, that's o.k. because that is valuable information to us.

As the parent watches the videotape, answer the following questions. Parents will do even fewer overt behaviors than the children, so you need to write down details about their facial expressions (did they smile, did they raise their eyebrows or furrow them, did they frown, blush, look excessively bored,etc.).

How many times did the parent's facial expression make a marked change? (Keep a tally)

What was the parent's predominant facial expression at/before the start of the tape?

What was the parent's predominant facial expression at/after the end of the tape?

On a scale of 1 to 10 where 1 is no change at all and 10 is continuous change, how often did the parent's facial expression change?

Did the parent do anything unusual during the video (i.e., walk around, totally not pay attention, etc.)?

Did the child say anything during the tape?___Yes___No
If yes, have the parent experimenter answer the following question.

What comments did the child make during the tape? Would you characterize them as positive or negative? What tone of voice was used?

Without looking at the tape, which condition do you think the parent was in (positive or negative)?

Post-Video Child Interview

First, I want you to pick out the one of these postcards that you want to use to write this boy/girl. Pick out the one that best suits how you feel about him/her. Take your time to write a note on the back to him/her. (WAIT FOR CHILD TO FINISH).

O.K. Now, I want to ask you some questions about the child in the video.

Which of these pictures best shows how the child was feeling? (show strip of five basic emotions-circle which one the child chooses)

Happy Sad Scared Angry Surprised

How do you think that he/she was feeling?

How do you know that he/she felt _____?

How did he/she feel about asking for the postcards? How do you know?

How did he/she feel about school?

Was there anything in particular that the child liked or disliked (about school)?

How do you think that he/she would feel about you? Would he/she like you?

How did you feel while you watched the videotape?

What did you do during the videotape?

Do you like the boy/girl? Why do you like/dislike him/her?

Would you like to play with him/her? What do you think the two of you would do together? Would it be fun? Why or why not?

What would your mom do if you played with this child? Would she like him/her?

Post-Video Parent Interview

O.K. Now, I want to ask you some questions about the child in the video. I am asking some of these same questions of your child, so please bear with me if some of these seem basic to you.

Which of these pictures best shows how the child was feeling? (show strip of five basic emotions-circle which one the parent chooses)

Happy Sad Scared Angry Surprised

How do you think that he/she was feeling?

How do you know that he/she felt _____?

How did he/she feel about asking for the postcards? How do you know?

How did he/she feel about school?

Was there anything in particular that the child liked or disliked (about school)?

How did you feel while you watched the videotape?

What did you do during the videotape?

Do you like the videotaped child?

Would you like this child to be friends with your child? Why or why not?

What would your child do if the videotaped child came over to play? How would your child feel?

What sorts of things do you think that they would do together?

What would you do if you were there when this child came over?

Appendix F

Advertisement for Subjects

Study of Children's Emotions and Behavior: The Laboratory of Emotional Development at Wayne State University seeks children between the ages of 7 and 14 for one-time participation in a research project. We particularly seek children who may have Attention Deficit Hyperactivity Disorder. One parent will participate in a study of children's emotions and behavior. Parents and children will be paid for their time. Please call Jill Norvilitis (313) 577-4667.

Appendix G

Correlation Matrix for Child and Parent Emotional Competence Measures

Key for Correlation Matrix

CACCEMO	Degree to which child labeled emotion of video stimulus child
CACCID	How accurately child identified emotion picture of video stimulus child
CLIKE	Child's reported like or dislike for stimulus child
CNEX	Child's number of expression changes during video
DDM	Distance that child placed self from stimulus child in classroom drawing
DTCH	Distance that child placed self from teacher in classroom drawing
EIC	Child faces emotion identification task score
EIP	Parent faces emotion identification task score
NOWORD	Number of words on postcard
OTBC	Off-task behavior for child during video
OTBP	Off-task behavior for parent during video
PACCEMO	Degree to which parent labeled emotion of video stimulus child
PACCID	How accurately parent identified emotion picture of video stimulus child
PCOC	Postcard choice of child
PFRIEND	Does parent want stimulus child to be friends with subject child
PLIKE	Parent's reported like or dislike for stimulus child
PNEX	Parent's number of expression changes during video
ROTHTOT	Auditory sensitivity total score
SDECC	Subjective degree of expression change in child during video
SDECP	Subjective degree of expression change in parent during video
VERB	Degree of verbalization of child during video

	CACCEMO	CACCID	CLIKE	CNEX	DDM	DTCH
CACCEMO	-	.40	.01	.14	-.02	.20
	-	p < .01	p = .91	p = .26	p = .85	p < .10
CACCID	-	-	.27	.15	-.14	.00
	-	-	p < .05	p = .23	p = .26	p = .97
CLIKE	-	-	-	.44	.29	-.14
	-	-	-	p < .01	p < .05	p = .24
CNEX	-	-	-	-	.09	.04
	-	-	-	-	p = .49	p = .77
DDM	-	-	-	-	-	.16
	-	-	-	-	-	p = .18
EIC	.21	.16	.11	.03	.05	.00
	p < .10	p = .19	p = .36	p = .83	p = .69	p = .98
EIP	.20	.15	.12	-.10	.14	.00
	p < .10	p = .24	p = .36	p = .44	p = .26	p = .99
NOWRD	.36	.06	-.13	.15	.04	.18
	p < .01	p = .60	p = .30	p = .21	p = .75	p = .13
OTBC	-.29	.10	.21	.10	.04	-.10
	p < .05	p = .41	p < .10	p = .41	p = .74	p = .43
OTBP	-.37	.20	.30	-.02	-.16	-.19
	p < .01	p < .10	p < .05	p = .88	p = .20	p = .13
PACCEMO	-.23	-.01	.18	.01	-.10	-.14
	p < .05	p = .94	p = .13	p = .94	p = .43	p = .26
PACCID	.17	-.04	-.02	-.02	.04	.16
	p = .15	p = .71	p = .90	p = .90	p = .75	p = .20
PCOC	.12	-.10	-.09	.05	.02	.10
	p = .35	p = .45	p = .48	p = .70	p = .84	p = .43
PFRIEND	-.34	-.27	-.09	-.21	.05	-.12
	p < .01	p < .05	p = .46	p < .10	p = .67	p = .33
PLIKE	.17	-.18	.13	-.200	.24	.18
	p = .17	p = .14	p = .31	p < .10	p < .05	p = .15
PNEX	.01	-.05	-.08	.12	-.23	-.05
	p = .92	p = .68	p = .50	p = .32	p < .10	p = .67
ROTHTOT	.16	-.06	-.04	-.00	.05	.03
	p = .17	p = .64	p = .77	p = .97	p = .65	p = .78

	CACCEMO	CACCID	CLIKE	CNEX	DDM	DTCH
SDECC	-.31 p < .01	.06 p = .60	.16 p = .22	.08 p = .51	-.08 p = .54	-.22 p < .10
SDECP	-.19 p = .13	-.05 p = .71	-.02 p = .85	.15 p = .20	-.28 p < .05	-.09 p = .47

	EIC	EIP	NOWRD	OTBC	OTBP	PACCEMO
EIC	- -	.34 p < .01	-.04 p = .70	-.13 p = .32	-.29 p < .05	-.03 p = .83
EIP	- -	- -	.06 p = .64	.04 p = .74	.02 p = .90	.07 p = .60
NOWRD	- -	- -	- -	-.47 p < .01	-.31 p < .01	-.18 p = .14
OTBC	- -	- -	- -	- -	.43 p < .01	.22 p < .10
OTBP	- -	- -	- -	- -	- -	.70 p < .01
PACCID	-.13 p = .30	-.01 p = .94	.11 p = .36	-.06 p = .65	-.27 p < .05	-.25 p < .05
PCOC	.05 p = .72	-.34 p < .01	-.03 p = .85	-.08 p = .55	-.33 p < .01	-.22 p < .10
PFRIEND	-.27 p < .05	-.02 p = .89	-.29 p < .05	.24 p < .10	.41 p < .01	.18 p = .15
PLIKE	.05 p = .69	-.01 p = .91	-.09 p = .49	-.11 p = .40	-.16 p = .23	-.08 p = .54
PNEX	.09 p = .48	.00 p = .97	-.05 p = .71	.08 p = .51	-.11 p = .38	-.06 p = .60
ROTHTOT	.331 p < .01	.08 p = .50	.43 p < .01	-.27 p < .05	-.25 p < .05	.01 p = .93
SDECC	-.02 p = .85	.02 p = .88	-.22 p < .10	.29 p < .01	.48 p < .01	.51 p < .01
SDECP	-.12 p = .36	.01 p = .92	-.04 p = .74	.18 p = .14	.221 p < .10	.17 p = .16

	PACCID	PCOC	PFRIEND	PLIKE	PNEX	ROTHTOT
PACCID	-	.25	-.03	.30	.17	-.05
	-	$p < .05$	$p = .82$	$p < .05$	$p = .16$	$p = .67$
PCOC	-	-	-.10	.16	.06	.15
	-	-	$p = .42$	$p = .24$	$p = .64$	$p = .26$
PFRIEND	-	-	-	.30	-.13	-.07
	-	-	-	$p < .05$	$p = .30$	$p = .56$
PLIKE	-	-	-	-	.01	.14
	-	-	-	-	$p = .93$	$p = .27$
PNEX	-	-	-	-	-	.11
	-	-	-	-	-	$p = .38$
SDECC	-.34	-.25	.33	-.19	-.13	.04
	$p < .01$	$p < .05$	$p < .01$	$p = .14$	$p = .31$	$p = .77$
SDECP	.07	-.11	.05	-.09	.68	-.06
	$p = .59$	$p = .42$	$p = .70$	$p = .49$	$p < .01$	$p = .65$

	SDECP
SDECC	.21
	$p < .10$

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Abstract

EMOTIONAL COMPETENCE IN CHILDREN WITH ATTENTION DEFICIT-HYPERACTIVITY DISORDER AND THEIR PARENTS

by

JILL NORVILITIS

December 1997

Advisor: Dr. Rita J. Casey

Major: Psychology (Clinical)

Degree: Doctor of Philosophy

This study investigated the pattern of emotional competence skills found in children with Attention Deficit-Hyperactivity Disorder (ADHD) and their parents. Forty-one ADHD children and 29 non-ADHD comparison children ages 7 to 14 participated with at least one of each child's parents. Parents and children completed measures designed to assess their expression, appraisal, and regulation of emotion. In addition, parents completed measures of psychopathology for both themselves and their children. Children with ADHD were expected to be worse than comparison children at identification and regulation of emotions in themselves and in others. Parents of children with ADHD were hypothesized to show a pattern of results similar to their children. Support was found for the hypotheses.

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