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The Predictive Relationship of Inhibitory Control, Emotion Regulation, Moral Emotions,
and Life Stressors on Behavior Problems in School-Aged Children
of Incarcerated Mothers

A thesis submitted in partial fulfillment of the requirements for the degree of
Master of Science at Virginia Commonwealth University

by

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Abstract

THE PREDICTIVE RELATIONSHIP OF INHIBITORY CONTROL, EMOTION REGULATION, MORAL EMOTIONS, AND LIFE STRESSORS ON BEHAVIOR PROBLEMS IN SCHOOL-AGED CHILDREN OF INCARCERATED MOTHERS

By Geraldine M. Lotze, M.S.

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University

Virginia Commonwealth University, 2006

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Children whose mothers go to prison are at high risk for poor outcomes of many kinds, including externalizing behaviors, internalizing disorders, school dropout, and eventual criminal activity. Inhibitory control, moral emotions, emotion regulation, and stressful life events were examined as predictors of externalizing and internalizing behaviors in children of incarcerated mothers. Participants were 50 children age 6 to 12 years ($M = 9.77$ y, $SD = 1.54$) with mothers currently in prison who attended a faith-based recreational summer camp. Inhibitory control was not impaired in these children, showing that their brains were functioning appropriately in this area of executive functioning. Inhibitory control did not impact emotion regulation as is usually seen, however. As expected, though, poor emotion regulation predicted both internalizing and externalizing behaviors. Lower levels of guilt (a healthy moral emotion) and higher levels of blame (an unhealthy denial of responsibility) predicted externalizing behaviors, while higher levels of shame (an unhealthy self-deprecation) predicted internalizing behaviors. A lower level of guilt also predicted the presence of callous/unemotional traits. Almost

half the children experienced four or more life stressors within the past year; stressors predicted feelings of sadness and anxiety as opposed to externalizing problems, and not problems with emotion regulation. Results indicated that children who experienced the incarceration of their mothers have the cognitive and moral tools with which to regulate their emotions, but they do not always use these tools. Poor emotion regulation puts children at risk of difficulties ranging from psychopathy to long-lasting peer and relationship problems. One possibility is that their behaviors are learned and purposeful; perhaps their home and neighborhood environments modeled and reinforced out-of-control behavior. Suggestions for interventions include increasing the understanding of the impact of emotional self-understanding on self-control and behaviors, using strategies that employ both a cognitive and moral focus.

Introduction

Children whose mothers go to prison are at high risk for poor outcomes of many kinds. Their mothers' incarceration is not the first difficulty these children face, as nearly all live in poverty and with multi-problem families. Family problems of addiction and criminality often stretch across the current and previous generations, affecting aunts, uncles, cousins, and grandparents. The children are at high risk for externalizing disorders, internalizing disorders, school dropout, and eventual criminal activity.

While the particular circumstances are always individual, the underlying mechanisms that influence children's reactions to life's difficulties are the same the world over. For example, years of experience and research have taught us that children's brain functioning is critical. For managing and planning behavior, in particular, executive functioning and the ability to inhibit quick reactions is necessary. Emotions, and the ability to manage emotions, are fundamental to how children get along with others and how they feel about themselves. Humans are moral creatures, and children learn their morality through the influence of family, peers, and their own cognitive development. Stress, and especially a heavy load of multiple stressors, makes it harder to function regardless of how hard a child tries.

All of these factors come together to influence whether a child will have healthy behavior and a good ability to cope, or not. These factors have not been considered previously in combination but will be brought together in the present study.

Review of the Literature

Executive functioning - inhibitory control

Executive functions are those cognitive proficiencies that are necessary for purposeful, goal-directed activities. These skills may include planning a course of action, organizing details, maintaining a mental set, paying attention to the right things, and inhibiting unacceptable actions (Eberle, 2003). Executive functioning is based on brain functioning. The prefrontal region of the brain has been identified as housing these functions, yet it is difficult to isolate frontal lobe development from other regions of the brain. It could be that executive function develops in part as cognitive capacities managed by other regions of the brain develop, such as language, attention, speed of processing, and memory capacity.

A small degree of frontal lobe activity has been measured in infants as young as 6 months of age (Bell & Fox, 1992). But cerebellar-cerebral connections are not myelinated until the second year of life, and tracts connecting specific and associative cortical areas are still maturing from school age into adulthood. The central nervous system appears to grow in spurts, with advances occurring from birth to 2 years of age, 7 to 9 years, and 16 to 19 years of age. Early intentional self-control behaviors are present in infants and toddlers between 18 - 30 months (Isquith et al., 2004), but it is not until children reach age 6 that they can exhibit strategic and *planful* behavior, and not until the age of 12 that children are able to respond with adult levels of executive functioning (Passler, Isaac, and Hynd, 1995; Becker, Isaac and Hynd, 1987; Chelune and Baer, 1986; summarized in Anderson, 1998).

Effortful control is an active inhibitory response made by an individual who is trying to purposely stop herself. It is important to the development of morality and specifically, the development of internalized emotions and conduct often labeled as conscience. Effortful control emerges first out of the process of executive attention, which develops rapidly during the toddler and preschool years (Rothbart et al., 2003). It is a flexible, voluntarily modulated type of control. Effortful control can be contrasted with reactive control, which is based on immediate reactivity to novel stimuli or to stimuli that elicit fear and anxiety. Reactive control is less flexible and less voluntary. Both effortful control and reactive control are temperamentally based capabilities (Eisenberg et al, 2004).

Posner & Rothbart (2000) noted that effortful control first emerges between the ages of 6 and 12 months of age and becomes critical to emotion regulation in the second year and beyond. They noted the involvement of the anterior cingulate gyrus region of the brain in both executive control functioning and in emotion regulation by regulating the amount of subjective distress in response to pain. Along with areas of the prefrontal cortex and basal ganglia (all related to executive functioning), these neurological networks are concerned with the resolution of conflict (Rothbart et al., 2003). The development of the prefrontal cortex in children is linked to the ability to exercise voluntary control by choosing among competing cognitive and emotional computations those that will be dominant at a given moment. By age 2.5, effortful control has become a very stable trait (Kochanska & Knaack, 2003) and, as a trait from 22 - 45 months, it predicted the presence of a conscience at 56 months. Earlier research by Kochanska et al (2000) found that infants' sustained attention at 9 months is related to their effortful

control at 22 months of age. Posner and Rothbart (2000) suggest that the early development of effortful control meshes with the later cognitive development of executive functioning and continues to develop throughout the early school years. They also found that children higher in effortful control were more empathetic and noted a positive relationship between guilt and shame in 6 - 7 year olds and high levels of effortful control and negative affectivity.

Both effortful control and reactive control are involved in adjustment. Effortful control contributes to emotion regulation when a child purposely holds back on the strong impulse to hit or scream or cry, while reactive undercontrol contributes to impulsivity. Both are related to externalizing and internalizing behaviors. Rothbart et al. (2003) found that effortful control appears to be a protective factor in the development of behavior disorders. Rothbart and her colleagues define effortful control as an outcome of executive attention, including the ability to inhibit a dominant response in order to activate a subdominant response, to plan, and to detect errors. Impulsivity and low effortful control were directly related to children's externalizing problems, which supported previous findings that attentional and behavioral regulation were both directly related to externalizing problems. As adjustment problems are often defined as problems in controlling emotion or behavior (externalizing problems), effortful control becomes an important construct in the development of not only emotion regulation, but behavioral outcomes as well (Eisenberg et al., 2004).

As executive attention develops, increasing capacities for self-control can provide a basis for continuing socialization. Although executive functioning appears to be somewhat stable by age 12, there is a strong belief that intervention during the early years

may promote the development of executive functioning in at-risk populations. Recent research suggests that executive functions, including inhibitory control, can be taught and improved upon (Riggs & Greenberg, in press).

Cognitive inhibition can be seen in how quickly a person can purposely inhibit an impulse. Children practice this when they play Simple Simon, Mother May I, or red light/green light. The Stroop Color and Word Test (Stroop, 1935), has long been a measure of cognitive inhibition and will be used in the present study. The Stroop measures the capacity to inhibit overlearned responses in favor of performing novel behaviors in response to changing demands (Wecker et al., 2000; Anderson, 1998).

Emotions and emotion regulation

Emotions are psychological and cognitive regulators of intrapersonal and interpersonal factors (Denham, 1998). They are both conscious and unconscious. From the earliest moments after birth and continuing throughout the lifespan, humans respond and react emotionally.

Emotional experience is a combination of physiological, cognitive, and emotional factors. Emotion first involves physiology. The autonomic nervous system is activated, and the individual can “feel” an emotion. But what happens next is still open to debate. Goleman (1995) suggests that sometimes emotions precede cognition, and other times emotions are preceded by cognition, both in adults and children. Denham (1998) proposes that cognition serves as the mediator through which autonomic nervous system arousal is altered or changed into emotional behavior and consciously labeled as feelings. She emphasizes that with development from infancy, higher brain functioning becomes more important to the emotional experience. Brain research suggests that although there

will always be some automatic emotional experiences throughout the lifespan that do not involve cognition, the cortical path to emotion predominates after about the middle of the first year, and it is at this point that cognition and emotions seem to mesh (LeDoux, 1993).

Functionally, emotions also begin to serve a purpose. Emotional regulation develops as a way to control and manage emotions that are scary and uncomfortable. According to Kopp (1999), emotional regulation is "modulation, toleration, and endurance of emotions." Denham (1998) suggests that emotions need to be regulated when "either the presence or absence of emotional expression and experience interferes with a person's goals" (p.149). Emotion regulation results as a combination of emotional, cognitive and behavioral processes. An emotional response might be to self-soothe, as infants do by sucking when they become emotionally aroused. Infants "sense" an emotion and the sensory components of it—how quickly it occurs and how strong it is. At this point, infants are monitoring the emotion.

Once an emotion is perceived, a decision must be made as to how to interpret and manage it both internally and externally. An internal response might be to cognitively shut out an emotion and ignore it, while an external response might be a parent changing the situation or context in which the emotion is occurring. As a child develops, parents play a lesser role in changing situations and the child herself must figure out how to respond to the emotion. In young children, it is almost impossible to separate the monitoring and perception components of regulating emotions.

The behavioral component of emotion regulation involves modifying the expressions, thoughts, or behaviors related to the emotional experience and organizing

and creating a goal in response to the experience. But this "doing" component can also involve emotional and cognitive aspects. Coping can be emotional, in that behaviors can alter both the expression and experience of the emotion. When successful, this results in social regulation between two people. The crying child can elicit help, the whining child can get what s/he wants, and the laughing child can bring others into the fun. Coping is often context and situation specific.

Cognitive coping involves thinking through goals and behaviors in a particular context. Self-conscious and social emotions may be the result of cognitive coping, or rationalizing responses. Denham (1998) gives an example (p.155): "I'll be a good boy so I won't feel bad any more." As children develop and become more aware of subtle contextual nuances, cognitive coping is occurring. Behavioral coping is simply behaving in response to an emotion, such as lashing out if angry, or choosing to leave the situation. Clearly, it is seldom simple to separate the many aspects of the behavioral component of emotion regulation.

At birth, infants are highly dependent on adults to support their emotion regulation. An infant cries, and parents rush in to offer a bottle, dangle a toy, or walk the floor until the wailing is relieved. According to Posner and Rothbart (2000), parental control of distress is a major task for both the infant and the caregiver in the early months of life. Parents can assist in the development of emotion regulation by altering the environment in which the child is responding emotionally (moving the child away from the frightening, barking dog), by modeling emotion regulation strategies, and by helping them deploy their attention through distraction and refocusing (Denham, 1998; Posner & Rothbart, 2000). Parents can also encourage discussions and language about emotions.

Laible (2004) has examined maternal discourse and found that emotion-laden discourse--that is, specifically talking about feelings--fosters a child's early conscience development, while simple emotional understanding did not. Laible showed that the content of the discourse was of importance, not just the concept of inductive and reason-oriented parenting.

Toddlers still rely on adults, but they develop some of their own emotion regulation strategies such as redirecting attention, self-distracting, and cognitive/symbolic manipulations of a situation through play (Kopp, 1989). Grusec et al. (2000) suggested the importance of the shared history between children and parents, as well as the intense emotions present in this attachment relationship. This emotion-laden relationship creates a steady platform for enhanced levels of cooperation and conflict, distinctive power dynamics, and responsiveness. It is in this context that the young child develops emotional self-regulation.

These strategies become available due to the physical, social, and cognitive development occurring within the child. Therefore, it is important to examine the temperamental and individual contributions that children bring to emotion regulation. According to Block and Block (1980), emotion regulation includes ego resiliency, defined as "the dynamic capacity of an individual to modify his/her modal level of ego-control, in either direction, as a function of the demand characteristics of the environmental context (p.48)." The Blocks emphasize that emotion regulation involves adaptation to changing circumstances and a flexible use of problem-solving strategies. Eisenberg & Fabes (1992) note the temperamental dimension of emotional intensity and voluntary inhibition that act together to impact coping in preschool children. An

individual who is low in emotional intensity and highly regulated may project a flat affect and unsociability, whereas a high intensity, low regulation child may be the problematic child who acts out aggressively. It appears that a “moderate” temperament is easiest to manage. All this takes time. Young children seem to understand that something can be done to control their emotions, and the oldest ones are figuring out some cognitive strategies, but they still have a hard time regulating their emotions.

Children with poor emotion regulation can be at risk for a number of poor outcomes. These children have trouble getting along with both adults and peers and are at a higher risk for future aggressive behavior problems, conduct problems, antisocial development, psychopathy (Frick et al., 2003), and substance abuse in adolescence and into adulthood. These externalizing behaviors are the logical outcome to monitor, as they cause trouble to the family and the outside world as well as marking internal difficulty for the child. Poor emotion regulation can also be linked to internalizing problems. The child who is sad much of the time, who cannot hold back tears or expression of fear, is also showing poor regulation of feeling. Besides the misery of being sad or scared, this child is at risk for teasing and rejection from peers (Shields & Cicchetti, 2001).

Ultimately, the goal of all emotion regulation is to be as "undercontrolled as possible and as overcontrolled as necessary" (Block & Kreman, 1996). The healthy child is able to feel what she is feeling and to act in a way that is spontaneous and genuine. At an exciting ball game, it is healthy to be excited and to jump up and down and scream for the team. Quieter settings demand quieter behavior. Aggressive emotions, in particular, need to be controlled. Children need to inhibit the impulse to hit when they are mad, to argue with adults, or to say mean things to peers. Children must also learn not to show

sadness or disappointment in public—to burst into tears when they get a test back—or they risk humiliation. Emotions need to be regulated, up or down, in accordance with the context.

Moral development

As emotions become regulated and children gain a conscious perception of their emotions and others around them, morals develop. Their moral belief system grows more abstract and less egocentric as it gains in complexity and sophistication. The roles of individual temperament, cognitive development, and parent influence, are defined differently by psychoanalytic, behaviorist, cognitive-developmental, and other theoretical frameworks.

The psychoanalytic theory lead by Freud posits that parents are essential to moral development. Caught in the throes of the Oedipal complex, the child is conflicted with feelings of aggression and sexual attraction to the parent of the opposite sex. Through parental warmth and control, parents establish external boundaries and rules for appropriate behaviors and interactions. As children resolve the Oedipal complex (or, for girls, Electra complex) and identify with their same-sex parent, they eventually internalize the rules established by their parents. In children's desire to please their parents, and in their fear of losing the parents' love, a super-ego develops. The super-ego is sometimes conceptualized as a parent inside the child's mind giving admonishments and warnings. Psychoanalytic theory suggests that this moral self is developed by the age of three (Kochanska, 1993) and that the same-sex parent plays the most important role in moral development (Brody & Shaffer, 1981).

Another theory of moral development comes from behavioral psychology and specifically from social learning theorists. This theory posits that a positive parent-child relationship will result in children internalizing their parents' norms. The internalization of parental norms is based on children modeling their parents' behavior as well as moral inhibitions, which are conditioned avoidance responses (Kochanska, 1993). Skinner believed that moral behavior is "shaped" and maintained by others (Brody & Shaffer, 1981). Since parents are often *the* most important people in young children's lives, they are the people most likely to provide reinforcement and aversive consequences for the child as well as to be the most available models for behavior. Eisenberg and Valiente (2002) share research by Bandura that indicates that children are likely to learn what factors are morally relevant and how much value to attach to each by imitating their parents. Rather than being unconsciously driven, Bandura suggests that children and adults will often act in specific ways to avoid social sanctions as well as to produce self-satisfaction and self-respect, with immoral conduct resulting in self-reproof. In so doing, children can feel a sense of power over their own motivations, thoughts and actions. Parents provide information about "behavioral alternatives, expectations, and possible contingencies for various courses of action, model relevant behaviors, and reinforce and punish the child for different actions" (Eisenberg & Valiente, 2002, p. 113).

Traditional social learning theory also posits that children identify with parents and internalize their moral standards as a means of satisfying the dependency drive and insuring against a loss of parental affections. Parents must be nurturing in order for a child to acquire a strong dependency drive that will result in their internalization of moral standards. The acquisition of morals is predicated on a child's early-existing individual

readiness to imitate. In current research investigating the role of imitation in preschool-age conscience, Forman, Aksan and Kochanska (2004) suggest that moral reciprocity and identification with adult values are the *product* rather than the cause of imitation. They suggest that imitation reflects young children's general receptive stance to socialization. Schneider, Cavell and Hughes (2003) also noted the role of childrens' *interpretations* of adults' socialization efforts as having an effect on how well children will respond to parental socialization efforts.

Social-learning theory views the role of parents as primary agents of socialization. Parents model important behaviors, reinforce and punish the child for "breaking the rules," and provide information about behavioral alternatives, expectations, and consequences for behaviors. Through these means, parents help children gain a sense of control over their own thoughts and actions.

Cognitive-developmental theory, led by developmentalists Piaget and Kohlberg, posits that morality develops as a result of children reorganizing their own patterns of thinking. Therefore, advances in cognition result in advances in moral judgment. For Piaget, children's understanding of morality was based on their beliefs about rules. Children first believe that rules are absolute and unchangeable. Eventually, cognitive change allows the child to see that rules are agreed-upon conventions that can be changed. Parents provide a very limited role in this process. Piaget felt that the young child's moral realism was the product of cognitive immaturity and unilateral respect for parents as power holders. Though Piaget focused primarily on the child's own cognitive structures, he held that peers play a greater role than parents in a child's morality. By virtue of parents' greater status and power, they tend to reinforce the child's unilateral

respect for authority rather than allowing the child to view rules and regulations as arbitrary products of group interaction and develop their own understanding of morality. Kohlberg felt that children followed rules because they were afraid of being punished and *not* because they viewed parents as authority figures. Unlike Piaget who said that morality developed in children by the ages of 10 - 12, Kohlberg says that moral growth proceeds through levels that depend on cognitive abilities that evolve in an "invariant sequence" (Brody & Shaffer, 1981). These levels - preconventional, conventional, and postconventional--reflect the kind of cognitive reasoning that children use to explain their moral beliefs. Parents can provide opportunities for interactions that involve morality, including discussions, conflict resolution, and decision-making, but these same opportunities could be provided in settings without a parent, such as schools and places of worship. Cognitive-developmentalists believe that cognitive development determines moral reasoning, and moral reasoning mediates moral affect and behavior. Unfortunately, the cognitive developmentalists have not gone that final step and actually examined the relationship between moral reasoning and how children behave in real life.

In Hoffman's theory of Moral Internalization, great effort is taken to synthesize the role of external factors with the process of internalization that Hoffman feels is essential for the development of morality. Parents play an essential role in the process (Eisenberg & Valiente, 2002; Kochanska & Aksan, 2004; Maccoby, 1980). Hoffman examined parental discipline and noted the relationship of discipline to a child's moral development. *Power assertion* was discipline that used physical punishment, deprivation, and applications or threats of force. Parents who used a lot of power-assertive discipline had children who were fearful and had a moral orientation based on fear of external

detection and punishment. Parents who punished with *love withdrawal* used expressions of disappointment and disapproval with their children. *Induction* was the discipline technique that most appealed to a child's affection and respect for others. With this technique, the parent explains the reasons for the discipline and relates child's actions to hurting, inconveniencing, or disappointing other people. Hoffman proposed that information shared in inductions is semantically organized, encoded in memory and modified and integrated with other information extracted by inductions in previous disciplinary encounters.

In Hoffman's theory, children play an active role in processing inductive information by focusing on their own actions and consequences (internalization) rather than the parents' rules. When children remember the causal link between behavior and consequences, they may experience the emotions of empathy and guilt associated with those memories, and the emotions may guide motives for behaving within moral norms at a later date (Eisenberg & Valiente, 2002; Kochanska & Aksan, 2004). Hoffman concluded that children both actively process moral messages of their parents *and* exercise a sense of choice and autonomy that is strongly encouraged by inductive parenting techniques. According to Maccoby (1980), Hoffman says that internalized morality is the result of an inflexible conscience, but that there is also a rational morality that develops as children recognize responsibilities to others. Parental discipline techniques, especially induction, are directly related to the internalization of moral reasoning. The other caveat is that parenting discipline techniques can also prevent this from happening! While psychoanalysts focus on moral emotion and moral conduct, cognitive developmentalists focus on moral cognition, and social learning theorists focus

on moral conduct to the exclusion of the other components of conscience. Hoffman focuses on moral emotion, moral conduct, *and* moral cognition.

Most current research agrees that the development of morality occurs bi-directionally. Both the child *and* the parent are involved. Kochanska, et al. (2004) found that there is a two-process model of emerging morality. Security with the parent makes the child more receptive to a parent's particular style, and vice versa--parenting style influences feelings of security felt by a child. They call this a benevolent "system of reciprocity" and noted that parenting style mediates the relationship between a child's feeling of attachment and the development of a conscience. In this particular study, attachment by itself was unrelated to future morality development. Posner and Rothbart (2000) called this interrelationship "developmental plasticity." They found that fearful toddlers whose parents used gentle discipline, as well as fearless toddlers whose parents capitalized on positive motivation in a close relationship, attained comparable levels of conscience.

Eisenberg and Valiente (2002) explain that as important as parents are to moral development, the child is still very much an active player in the process by bringing temperament, individual responses to socialization, cognitive abilities, and style of interaction to the parent-child relationship. Just as children bring individual differences to the model, mothers and fathers contribute independently to variations in child conscience development.

In an earlier work, Kochanska (1993) suggests that temperamental make-up, especially vulnerability to anxiety and impulsivity, may influence parental choice of strategies of moral socialization. She notes that there is a "goodness-of-fit" relationship

that is the reality of the parent-child relationship. An easy-going, compliant child might need only a stern look from mother to comply, while a more rambunctious or aggressive child might require more effortful interventions from the parents. Gfeller (1986) found that parents adjust their parenting styles to match the developmental level of their children, and they do so almost automatically. As with much of human development, the development of morality is a result of the transactional relationship between multiple factors.

Most psychologists agree that the development of morals is the result of a process of internalization, the personal and internal ownership of morality. Theories that depend upon socialization stress that it is through interactions with others that the child develops the internal processes associated with morality. Grolnick (2003) asserts that active parenting techniques rather than a non-confrontational, passive parenting style lead to internalization. Parenting that exerts pressure has the parent taking responsibility for the child's behavior and manipulating compliance. This undermines children's ability to take responsibility for their own behavior. In other words, parenting that prevents internalization inhibits the development of morals. Parents need to apply just the right amount of coercion so that children will attribute compliance to their own drive, not to external sources. To illustrate, Vaden (2002) found a negative relationship between authoritarian parenting styles and moral development in college-aged children. Grolnick (2003) noted that authoritarian and permissive parenting styles restricted internalization in different ways (one via power and the other via lack of involvement), but neither allow children to negotiate, make choices and be given the opportunity to suffer consequences which together foster feelings of supportive autonomy that lead to moral development.

According to Grusec et al. (2000) the parent and child construct each other's moral behavior. Therefore, the child's internalization of moral standards is influenced by parenting style and parenting style is affected by what the child evokes and how the child responds to parental efforts.

Most of the research in development of morality focuses on the mother-child relationship. Kochanska et al. (2004) conducted a longitudinal study examining early attachment and security and the relationship to children's conscience at 56 months. They found that responsive mothering, free of use of power, predicted a higher level of child's conscience. A recent paper by Kochanska et al (2005) examined the relationship between early mother-child mutually responsive orientation (MRO) and conscience. Kochanska concluded that conscience development "unfolds" with distinct pathways that link the parent-child relationship with child future moral emotion, conduct, and cognition. It is not a uni-directional process. Children who are happy in their relationships with their mothers pay more attention to them, look forward to interacting with them, feel secure, and are more eager learners during the socialization process. In their 1995 study, Kochanska et al. found support for the idea that conscience develops as a result of *committed compliance* rather than *situational compliance*. *Committed compliance* occurs when the child appears to endorse, embrace, and accept the parental agenda as his or her own and was strongly associated with shared positive affect in mother-child dyads. This is contrary to Piaget's contention that children comply with parents because they fear them and Kohlberg's argument that parents are not really that important to moral development.

Guilt and shame

Guilt and shame are moral emotions that inhibit socially maladaptive behaviors. They are both negative self-relevant emotions experienced when someone has done something morally or socially unacceptable. Both involve a higher level of cognition, specifically a self-concept (Eisenberg, 2000; Lewis, 1992), since self-awareness and an understanding of standards and rules are necessary for both shame and guilt to occur. These two emotions differ, though, in ways important to the mental health and well-being of children. Shame is beset with problems, and guilt is the healthier emotion,

Shame involves a turning inward of self-evaluation and, in young children, almost a "collapsed" physical response so that body language seems to say, "I'm trying to become invisible" (Denham, 1998). The focus is on the entire self and involves a painful scrutiny and a negative self-evaluation. Individuals feeling shame feel worthless and powerless and, in addition to their own negative self-evaluation, they often feel that they are being negatively evaluated by others. Shame does not stay quiet within an individual though, as it is also related to acting out and aggressive behaviors. Tangney et al. (1996) found that shame influenced avoidant behavior as well as a defensive, retaliative anger and a tendency to project blame outward. The experience of shame itself generates other-related anger and hostility (Tangney et al., 1996; Lewis, 1971; Scheff, 1987).

Guilt is a healthier moral emotion. When individuals feel guilty, they focus on the specific misdeed or failure, not on their own deficiencies. They accept responsibility for the misdeed and seek to make things better by apologizing, undoing, or repairing the harm that might have been done. They are sorry and want to fix the error. The "self" remains intact. Guilt appears to be associated with the tendency to accept responsibility

and a decreased tendency toward interpersonal anger and hostility (Tangney et al., 1996). Individuals who respond to their own misdeeds with guilt also have a greater capacity for interpersonal empathy (Tangney, 1991, 1995).

In her large longitudinal study of children, adolescents, college students and adults, Tangney (1996) found that there is immense stability of tendencies to be guilt-prone or shame-prone, with a consistent link between shame-proneness and anger and aggressive tendencies. There is also a continuum of levels of guilt and shame, with unhealthy levels related to psychopathology in children (Tangney et al., 1995). In his study of children with conduct disorder, Frick et al. (2003) found that lack of guilt was highly indicative of the presence of conduct disorder in youths with callous/unemotional traits.

Developmental theories differ widely in their explanations of how guilt and shame develop and are maintained. The psychoanalytic model proposes that guilt develops when the child turns feelings of anger inward and those guilty feelings become a powerful motivating force in moral development. Eisenberg and Valiente (2002) propose that guilt develops due to parental love-withdrawal and that a child's *temperament* influences the degree to which parenting practices are associated with the development of guilt. Hoffman theorizes that when children remember the causal link between the behavior and consequences, they may experience the emotions of empathy and guilt associated with those memories, and the emotions may guide motives for behaving within moral norms at a later date (Hoffman, 1994; Eisenberg & Valiente, 2002; Kochanska & Aksan, 2004). There is not agreement on how and why healthy guilt, or the lack of it, develops in children or is maintained in adults.

The social and moral emotions of guilt and shame are particularly important because not only are they a way for children to interact with the environment, they also provide an avenue by which children can change the environment around them. But both of these moral emotions come with a cost - too much of one, or not enough of another - can have negative consequences. Too little guilt has been linked to psychopathy, aggressiveness, antisocial behavior, and conduct disorders. Too much shame can make a child anxious, withdrawn, fearful, hostile, and sad. Shame, in particular, is linked with behavior problems of both an externalizing and internalizing nature. The correct balance results in a socially competent, mature, and adaptive individual.

Children of incarcerated mothers—a group at risk

According to recent statistics, there are approximately 1.3 million children with incarcerated mothers in the United States (Mumola, 2000), yet this unique population continues to be understudied. Research has shown that they are at risk for behavioral problems. According to a review of the literature done by Myers et al. (1999), factors such as the age of a child when a mother is arrested and even the possibility of viewing the arrest can have important consequences for a child. High parental recidivism rates also create disadvantages for these children as the child is hopeful and let down, hopeful and let down, in an ongoing demonstration of the parent's unreliability. A study by Phillips and Harm (1997) characterized the problems of children of incarcerated mothers as an "enduring trauma."

Young children may respond by feeling guilty for their mother's incarceration or guilty about not being able to prevent it (Johnson, 1995) while older children may feel

scared, anxious, and sad. Children often respond by acting out through aggression, anger, and engaging in other antisocial behaviors (Myers et al., 1999).

Children of incarcerated mothers have most often experienced a high number of life stressors even prior to their mothers' arrest and incarceration (Amlund-Hagen et al., 2005; Smarsh, unpublished thesis). These children most often have been in the presence of drug use, domestic violence, community violence, and a variety of law-breaking situations. Their mothers, and often other family members, have provided poor models of decision making and moral behavior (Amlund-Hagen et al., 2005; Amlund-Hagen & Myers, 2003; Myers et al., 1999). In their study of traumatized urban youth, Saigh et al. (2002) found that traumatic exposure in the absence of post-traumatic stress syndrome was associated with higher scores on aggression scales and with attention problems in youths ages 8 - 15. Kim et al. (2003) noted that there is a reciprocal process between negative life events and maladjustment. They found that negative life events experienced during early adolescence actually intensified symptoms of sadness, fear, and antisocial conduct, while these outcomes themselves increase the risk for future adversities and life crises.

Purpose of the Study

The purpose of this study was to investigate the predictive value of inhibitory control, emotion regulation, moral emotions, and life stressors on internalizing and externalizing behaviors in a sample of children of incarcerated mothers. It was expected that inhibitory control would have a predictive relationship with emotion regulation, such that as cognitive inhibition increases, indices of positive emotion regulation should also improve. It was also expected that children with more negativity and lability (poor

emotion regulation) and with proneness to the more "negative" moral emotions (shame and blame) would show higher levels of both internalizing and externalizing behaviors, as well as a higher level of callous-unemotional traits. The relationship between callous-unemotional traits and moral emotions had not previously been explored, but as callous-unemotional traits have been associated with an increase in externalizing behaviors and the traits associated with psychopathy, I explored if there was a relationship with moral emotions. I also investigated the impact of exposure to stressful life events on emotion regulation. It was quite possible that each of the relationships that were investigated in this research--cognitive inhibition, emotion regulation, moral emotions, callous-unemotional traits, and life stressors--would yield points of need, as well as resiliency, for children in the at-risk population of children with incarcerated mothers.

Hypotheses

1. Children with greater cognitive inhibition will experience better emotion regulation as measured by both self- and adult ratings.
2. Children with poorer emotion regulation will show higher internalizing and externalizing behaviors.
3. Children with higher shame and blame moral scores, and less guilt, will show higher internalizing and externalizing behaviors.
4. Children who experienced more stressful life events will exhibit poorer emotion regulation and more internalizing behaviors.
5. Children with higher callous/unemotional (CU) traits will score higher on shame, blame, and detachment-proneness, and lower on guilt.

Method

Participants

Participants were 50 children (6-12 years; 31 girls, 62%) with an incarcerated mother (see Table 1). The average age of the children was 9.77 years ($SD = 1.54$), within a range of 6 years 8 months - 12 years 10 months. The children were campers in a week long, faith-based summer camps held specifically for this population of children. A total of 120 children attended the camps and 73 (61%) returned consents to participate. Of those who returned consents, 19 (16%) were currently living with their mothers (who were now released from prison), yielding them inappropriate for this study. Four children were tested but excluded from the study. In one case, a child could not complete the Stroop Test due to low reading ability, two were unable to complete large portions of various measures thereby yielding incomplete results, and one chose not to participate once the assessment process began. Of the remaining sample, 35 (70%) lived with their grandmothers or grandmother and grandfather, while the remaining lived with other family members, including 2 (8%) who lived with their fathers.

Children's camp mentors completed questionnaire assessments about the behavior of each child they were assigned to for the week. Caregiver written consent was obtained for all children, and children were also asked to sign their assent to be interviewed. Mentors signed their consent before rating children's behavior.

Table 1

Children's Demographic Information (N = 50)

	<i>n</i>	<i>Percentage (%)</i>
Age		
6	1	2
7	5	10
8	11	22
9	12	24
10	7	14
11	11	22
12	3	6
Ethnicity		
African-American	27	54
European-American	15	30
Mixed-race	8	16
Living With		
Grandmother	23	46
Grandmother and Grandfather	12	24
Other Aunt (4), Great Grandmother (2), Cousin (2), Sister (1), Grandfather (1) Godmother (1)	11	22
Father	2	8

Measures - Children

Executive functioning - inhibitory control. The Stroop Color and Word Test developed by Ridley Stroop in 1935, but modified by Golden (1978), was used to test inhibitory control (Appendix A). It is a measure of the ability to inhibit overlearned or prepotent responses in the face of conflicting information (Roberts & Pennington, 1996). The Stroop has been widely used in studies of children to examine executive and attentional problems (Golden & Golden, 2002). It consists of three tasks. Word naming is measured by reading the words "red," "green," and "blue," printed in black ink. On the second page, colors are named when shown as for "xxxx" printed in different colors. On the third page, colors are then named when shown as *nonmatching* color words. For example, the word "green" may be presented in blue ink and the respondent is supposed to say "blue." The child must inhibit the natural inclination to read the word "green" and instead say the color of the ink. The measure of Interference in the Stroop is how much slower color naming becomes when word reading interferes with color naming. The child has to inhibit automatic responses when faced with conflicting information (Grodzinsky & Diamond, 1992). It is simple, short (approximately 4 minutes per child) and not based on intelligence.

Moral emotions. The Test of Self-Conscious Affect for Children (TOSCA-C; Tangney, Wagner, Burggraf, Gramzow, & Fletcher, 1990) was used to measure the moral emotions of shame-proneness and guilt-proneness, as well as blaming others and detachment (Appendix B). The TOSCA-C is a self-report, scenario-based instrument designed for 8 - 12 year old children. It was read aloud to all the children. Each scenario is shown in a picture. For each scenario, children rate on a five-point scale the extent they

would think or feel certain responses. For example, children are provided with a scenario such as, "You get a test back in school and you didn't do well." Then they are asked to rate on a Likert scale, 1 to 5, how likely they are to agree with statements representing feelings of guilt (e.g., "I'd feel I should have done better. I should have studied more."), shame (e.g., "I'd feel stupid."), detachment (e.g. "It's only one test."), and blaming others (e.g., "The teacher must have graded it wrong."). Children's proneness to each of the moral emotions is obtained by adding the ratings for each emotion across all of the scenarios.

Piloting of the TOSCA-C with this population indicated that certain items were difficult for the children to understand. The general problem was that the scenarios were too mild and children could not sense the moral tension that was supposed to be evident. For example, scenario 10 is "You invite a friend to sleep over. But when you ask your Mom she says no." was changed to "You invite a friend to sleep over. But when you ask your grandmother, she says "absolutely not" and your friend gets very upset." The response items for this scenario were changed from "Since I already asked my friend, I'd feel kind of embarrassed" to "Since I already promised my friend, I'd feel sick with embarrassment." Another response item was changed from "My Mom's not fair" to "My grandmother's not fair. It's her fault that my friend is upset." Therefore, some items were reworded in order to be stronger and more meaningful to the participants (see Appendix B). The internal reliability (Cronbach's alpha) estimates for the measure were .69 for the shame scale, .84 for the guilt scale, .70 for the blame scale, and .58 for the detachment scale. Due to the low internal consistency coefficient for the detachment scale, it was deemed unreliable for this sample and thus was excluded from analyses.

Internalizing/Externalizing behavior. A subset of questions from the Youth Self-Report (YSR) (Achenbach, 1991) was used to measure internalizing and externalizing problems (Appendix C). The full YSR contains 112 problems and competencies in a standardized format to be completed by youths who are 11 - 18 years of age using a 3-step response scale: 0 (not true), 1 (somewhat or sometimes true), or 2 (very true or often true). It was administered orally to all of the children. At the request of the university IRB, five items were removed due to concern about self-incrimination. These items were: I destroy things belonging to others; I physically attack people; I set fires; I steal from places other than home; I use alcohol or drugs for non-medical purposes. Reliability alphas for the externalizing and internalizing items with this sample were $\alpha = .90$ and $\alpha = .86$, respectively. The scores used were sums of the ratings, 0-2, for the internalizing and externalizing scales. Higher scores indicated more problems.

Callous-Unemotional Traits. The Inventory of Callous-Unemotional Traits (ICU; Frick, 2004) is a 20-item self-report scale designed to assess callous (feeling no sympathy) and unemotional traits in youth (Appendix D). The ICU was derived from the CU (callous/unemotional) scale of the Antisocial Process Screening Device (ASPD; Frick & Hare, 2001). The CU component of the APSD has emerged as a distinct factor in both clinical and community samples (Frick et al, 2000), and has been shown to identify a distinct subgroup of children with conduct problems that are more severe than other children with conduct disorder (Christian et al, 1999). The ICU was constructed based on a factor analysis of parent and teacher ratings on the APSD, using the four items that loaded significantly on the CU scale in both clinic-referred and community samples (Frick et al, 2000). A sample item is "You use or con other people to get what you want."

Children rate themselves as 0 for "not at all true", 1 if "sometimes true", and 2 for "definitely true." At the request of the IRB, one item was removed: You engage in illegal activities. The remaining 19 items were administered orally to the children. The reliability alpha was $\alpha = .75$ for this sample. Higher scores denote higher Callous/Unemotional Trait.

Emotion regulation. The Early Adolescent Temperament Scale - Revised (EATQ-R): Self Report (Ellis and Rothbart, 1999) is a 65-item self report measure designed to assess aspects of temperament related to self regulation in youth ranging in age from 9 - 15 years (Appendix E). It was read aloud for all participants. An example of a question from the EATQ-R is "It frustrates me when people interrupt me when I am talking". Participants choose from 5 Likert-style responses, ranging from (1) "Almost always untrue of you" to (5) "Almost always true for you". Only three sub-scales were used for this study - Inhibitory Control, Aggression, and Frustration. The sub-scales showed good internal consistencies (.69, .80, and .70 respectively) in the initial study by Ellis and Rothbart (1999) and they all correlated highly with the original long form of the EATQ (.93, .91, and .95 respectively). Lengua (2002) used the subscales with 7 - 12 year olds and found a combined sub-scale internal consistency to be .79. The instrument subscales had been used in a previous study done with this population to measure emotion regulation.

In the present study, the internal reliability alphas were .41 for the Inhibitory Control subscale, .74 for the Aggression subscale, and .65 for the Frustration subscale. Due to the low internal reliability of the Inhibitory Control subscale with this sample, this factor was excluded from analyses. When the Aggression and Frustration scales were

combined, the internal reliability was $\alpha = .76$, thus the decision was made to analyze the data using the combined subscales as a measure of emotion regulation. For the children's measure of Emotion Regulation, higher scores indicate *poorer* emotion regulation.

Stressful life events. The Stress Index (Attar, Guerra & Tolan, 1994) is a list of 16 stressful events to which a child responded with "yes" or "no" to having experienced the event in the past year (Appendix F). The list contains 3 subscales: life transitions, circumscribed events, and exposure to violence. This self-report is appropriate for urban, minority, elementary school aged children.

Measures - Adult

Internalizing/Externalizing Behavior measures. The Teacher Report Form (Achenbach, 1991: TRF) measures the competencies and problems of children age 4-18 years (Appendix G). Camp mentors responded with a 3-step response scale: 0 (not true), 1 (somewhat or sometimes true) or 2 (very true or often true) to 63 items relating to the subscales of internalizing and externalizing behaviors. The internal reliabilities for this sample were $\alpha = .87$ for Internalizing behaviors and $\alpha = .97$ for Externalizing behaviors. As with the children's YSR scale, certain items were removed at the request of the IRB to avoid "incriminating" the children in illegal activities.

Callous/Unemotional Traits. The Antisocial Process Screening Device - Teacher Edition (ASPD; Frick & Hare, 2001) is the adult form of the instrument used with the children to measure callous/unemotional traits (Appendix H). Formerly known as the *Psychopathy Screening Device* (e.g., Frick, Bodin, & Barry, 2000) this measure is a 20-item behavior rating scale for adult report of callous/unemotional trait in children. Items are rated 0 if the statement is "not at all true", 1 if it is "sometimes true", and 2 if it is

"definitely true." Factor analyses from a large screening sample found 3 dimensions underlying this rating scale: a 7-item Narcissism dimension, a 5-item Impulsivity dimension, and a 6-item Callous-Unemotional dimension (Frick, Bodin et al, 2000). The Callous-Unemotional dimension was the most stable dimension of the APSD across multiple samples (Frick, Bodin et al, 2000) and it had an internal consistency of .76 in the full screening sample. Parent and teacher ratings on the APSD CU scale were correlated $r = .38$ ($p < .001$) and similar factor structures were evident in the two sets of ratings (Frick, Bodin et al., 2000). At the request of the IRB, one item was removed: Engages in illegal activities. An internal reliability of $\alpha = .76$ was calculated for this sample using Cronbach's alpha.

Emotion regulation. The Emotion Regulation Checklist (ERC; Shields and Cicchetti, 1997) uses a scale of 1 (never) to 4 (always) to evaluate an adult's perception of a child's typical method of managing emotional experiences (Appendix I). The ERC uses 24 items. It is appropriate for impoverished, inner-city children in the 6-12 age range. These items were divided into the subscales of (1) Lability/negativity, a measure of inflexibility, lability, and dysregulated negative affect (e.g. mood swings) and (2) Emotion Regulation, which examines emotional self-awareness, appropriate emotional expression, and empathy. An example of a Lability/negativity statement is "[child] is easily frustrated." The items assess negative emotionality (anger) and lack of emotional flexibility so that higher scores on this subscale reflect greater dysregulation. In contrast, empathy, flexibility and emotional self-awareness are evaluated in the Emotion Regulation subscale, measured by items such as "[child] can say when s/he is feeling sad, angry or mad, fearful or afraid." Therefore higher scores on these items indicated greater

emotional regulation. Internal reliability was $\alpha = .77$ for the Emotional Regulation subscale and $\alpha = .78$ for the Lability/Negativity subscale with this sample.

Procedure

Consent forms were mailed to caregivers as part of the camp registration package, and children brought the consents to camp in an envelope provided for this purpose (Appendix J). Only children with signed consent from their caregivers were interviewed. Most children were delivered to camp by volunteer drivers, so it was not possible to meet with caregivers directly regarding consent.

Each child was interviewed individually. Interviewers were psychology graduate students and faculty who spent the full week at camp with the children. Children had the study explained and signed their assent before proceeding with the interview (Appendix L). Interviews were conducted in a public area within sight of the child's group (for example, at a table near the arts and crafts area) but far enough away so that the child's answers were not overheard. Interviews took between 30-45 minutes.

Camp mentors were adult volunteers who supervised and camped with the children all week; each mentor had 1-2 children. Mentors participated in a training period the Saturday prior to camp during which time they had the guidelines of the study explained, including the behaviors that were to be measured by the study and the importance of completing each questionnaire fully. At the end of the week, mentors were given questionnaires to complete about the children with whom they had worked during the week at camp. Mentors signed consent prior to filling out consent (Appendix K).

The study was approved by the university IRB.

Data analysis plan

A series of hierarchical regressions based on the hypotheses were used to examine the variance contributed by specific factors for predicting internalizing behavior, externalizing behavior, and callous-unemotional traits. Given the limited number of participants available in this unique population, there was not enough power to enter all the variables in one model. The analysis goal was to demonstrate how a combination of inhibitory control, emotion regulation, moral emotions, and life stressors contribute to children's well being.

Data were cleaned and inspected for errors. Specific planned analyses included:

Hypothesis 1: Emotion regulation was the dependent variable in this analysis. To control for gender and age, these factors were put in step 1. Cognitive Inhibition was put in step 2.

Hypothesis 2: Internalizing behaviors and Externalizing behaviors were the dependent variables in this analysis. Gender and age were put in step 1. In step 2, scores on emotion regulation were added. This analysis was run twice--once with Internalizing behaviors as the DV, and a second time with Externalizing behaviors as the DV.

Hypothesis 3: This analysis was run in the following manner. Gender and age went into Step 1 in all analyses, and the IV in step 2 was each of the moral emotions (shame, guilt, and blame). These were run separately for the DVs internalizing, externalizing, and callous/unemotional traits for both the adult and child measures.

Hypothesis 4: Two hierarchical regression analyses were conducted for this hypothesis. In both analyses, gender and age were entered at step 1. Stressful life events

were put in step 2, and emotion regulation was the dependent variable for the first regression, and internalizing behavior the dependent variable for the second regression.

Hypothesis 5: For all analyses, gender and age were put in step 1. The callous-unemotional traits went in step 2. The analyses were run three times with each of the moral emotions as a dependent variable: shame, blame, and guilt.

Results

Descriptive Information

Means, standard deviations, and ranges for all variables are presented in Table 2. The mean scores on child reported emotion regulation measures were for Aggression $M = 1.98$ ($SD = .86$) and for Frustration $M = 3.10$ ($SD = .89$), indicating that children on average answered "once in awhile true of me" to questions assessing aggression and "sometimes true of me" to questions assessing frustration. The mean scores on adult-rated Emotion Regulation ($M = 3.00$, $SD = .56$) and Lability/Negativity ($M = 2.21$, $SD = .67$) indicated that adults viewed positive emotion regulation behaviors "sometimes" and negative emotion regulation behaviors "seldom" during the camp week.

The mean scores on child reported descriptions of callous/unemotional traits ($M = .64$, $SD = .29$) suggested that on average the children felt that the statements were "not at all true" of them. The adults on average reported that on average the callous/unemotional statements were "sometimes true" of the children, $M = .81$ ($SD = .48$).

The mean scores of the moral emotions of guilt, shame and blame indicated that the children on average were "likely" to report guilt ($M = 3.95$, $SD = .92$) and "unlikely" to "maybe" to report shame ($M = 2.60$, $SD = .83$) and blame ($M = 2.49$, $SD = .83$) in response to the hypothetical scenarios.

Table 2

Means, Standard deviations, and Ranges for all Child and Adult Variables (N=50)

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>Range</i>
<i>Child Measures</i>			
EATQ: Aggression	1.98	.86	1.00 - 4.33
EATQ: Frustration	3.10	.89	1.00 - 5.00
Callous-Unemotional Traits	0.64	.29	.05 - 1.32
TOSCA: Guilt	3.95	.92	1.80 - 5.00
TOSCA: Shame	2.60	.79	1.20 - 5.00
TOSCA: Blame	2.49	.83	1.00 - 4.20
YSR: Internalizing	19.18	8.98	3.00 – 45.00
YSR: Externalizing	10.96	9.06	0.00 – 41.00
Number of Life Stressors	4.44	2.72	1.00 - 11.00
<i>Adult Measures</i>			
ERC: Emotion Regulation	3.00	.56	1.88 - 4.00
ERC: Lability/Negativity	2.21	.67	1.07 - 3.79
Callous-Unemotional Traits	0.81	.48	.16 - 1.95
TRF: Internalizing	12.30	9.20	.00 - 35.00
TRF: Externalizing	15.39	15.77	.00 - 55.00

The mean score on the Stress Index was $M = 4.44$ ($SD = 2.72$) indicating that on average children experienced 4 stressors listed in the measure over the past year. More than half the children ($n = 18$) experienced 4 - 9 stressors, while three children experienced 10 - 11 stressors (see Figure 1). Table 3 shows the children's responses to particular items on the Stress Index.

Zero-Order Correlations among Measures

Intercorrelations between all variables are presented in Table 4.

Correlations with gender and age. Gender was not significantly correlated with any of the child reported measures. Gender was positively correlated with the adult reported measure of Emotion Regulation ($r = .40, p < .01$) indicating that higher adult-reported emotion regulation was observed in girls. Gender was negatively correlated with the adult measures of Negativity/Lability ($r = -.41, p < .01$), Callous/Unemotional Traits ($r = -.42, p < .01$) and Externalizing behaviors ($r = -.41, p < .01$) indicating that adults observed these traits and behaviors more often in males than females.

Age was significantly correlated with some child measures, including Callous/Unemotional Traits ($r = .32, p < .05$), the combined emotion regulation scale that included both Aggression and Frustration subscores ($r = .31, p < .05$) and youth self-reported Externalizing behaviors ($r = .36, p < .05$) such that the older children reported more or higher levels of these behaviors than the younger children.

Correlations between sub-scales of child and adult measures. The total number of life stressors correlated only with the child-reported measure of emotion regulation ($r = .29, p < .05$), indicating that the more stressful life events experienced by a child, the more aggression and frustration they felt. Child-reported measures of internalizing,

Figure 1

Number of stressors reported experienced by children (N=50)

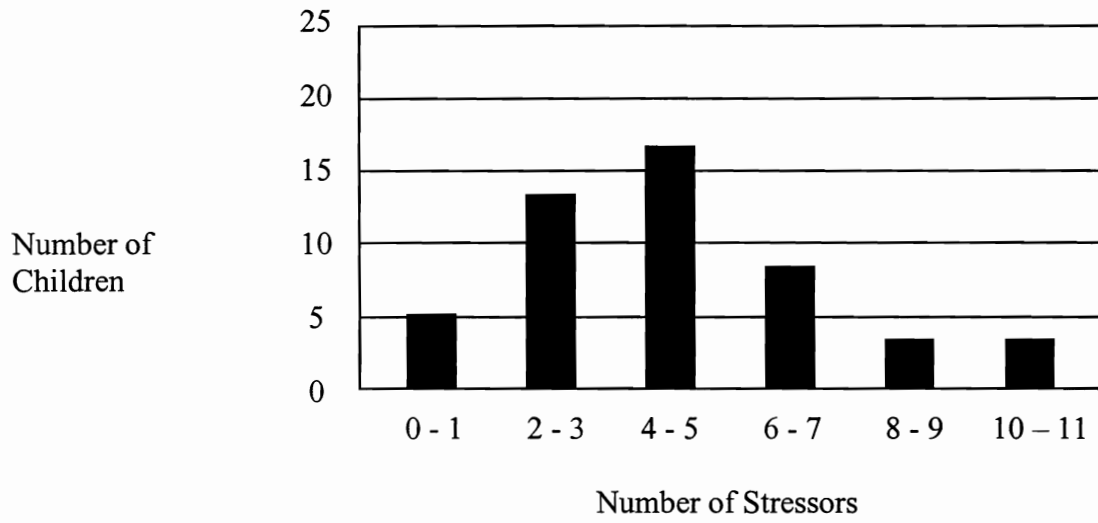


Table 3

Children's responses to the Stress Index (N = 50)

Question	Number Yes (%)
In the past year . . .	
1. Did your family move to a new home or apartment?	18 (36%)
2. Did your family's property get wrecked or damaged due to fire, burglary, or other disaster?	7 (14%)
3. Has anyone in your family gotten married?	17 (34%)
4. Has your family had a new baby come into the family?	24 (48%)
5. Has anyone moved out of your home?	19 (38%)
6. Did a family member die?	21 (42%)
7. Did a close relative or a friend die?	12 (24%)
8. Has a family member become seriously ill, injured badly, and/or had to stay at the hospital?	24 (48%)
9. Has a family member been robbed or attacked?	6 (12%)
10. Has someone else you know, other than a member of your family, gotten beaten, attacked, or really hurt by others?	10 (20%)
11. Have you seen anyone beaten, shot, or really hurt by someone?	9 (18%)
12. Did you change where you sent to school?	18 (36%)
13. Have you seen or been around people shooting guns?	9 (18%)
14. Did you have to go live in a foster home?	3 (6%)
15. Have you been afraid to go outside and play, or have your parents made you stay inside because of gangs or drugs in your neighborhood?	17 (34%)
16. Have you had to hide someplace because of shootings in your neighborhood?	8 (16%)

externalizing, callous/unemotional traits, and emotion regulation (higher scores indicate poorer emotion regulation) were positively and significantly correlated.

Callous/unemotional traits also correlated with the moral emotions of blame ($r = .29, p < .05$) and guilt ($r = -.51, p < .01$) but not shame, therefore children high in callous/unemotional traits were likely to feel blame and a significantly lower amount of guilt when presented with moral decision making. Externalizing behaviors were also correlated in the same directions with blame ($r = .39, p < .01$) and guilt ($r = -.39, p < .01$) which is supportive of the hypothesized directions of these variables. Of the moral emotions, shame is correlated with blame ($r = .36, p < .05$) and guilt ($r = .38, p < .01$) but blame and guilt, themselves, do not correlate.

The adult measures of emotion regulation, lability/negativity, internalizing and externalizing behaviors correlate significantly and in the hypothesized direction.

Cross-informant correlations. Children who reported higher scores on callous/unemotional traits were likely to receive higher ratings on the same subscale by adults ($r = .33, p < .05$). Similar cross-informant correlations were observed for externalizing behaviors ($r = .38, p < .01$) but not internalizing behaviors. There was also a positive correlation between the child emotion/regulation score and the adult lability/negativity score ($r = .38, p < .01$), and *not* the adult emotion regulation score, indicating that these measures are examining similar negative emotion regulation behaviors.

Cross-informant/cross-measure correlations. There was a correlation between child reported callous/unemotional traits and adult scores on lability/negativity

Table 4

*Intercorrelations for Gender, Age, Stroop Interference Scores, Life Stressors, Moral Emotions and Adult and Child**Measures of Emotion Regulation, Callous/Unemotional Traits, and Internalizing and Externalizing Behaviors*

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gender	--														
2. Age	.15	--													
<i>Child Measures</i>															
3. Stroop	.27	-.12	--												
4. Life Stressors	-.07	.16	-.04	--											
5. C/U Traits	-.03	.32*	.92	.15	--										
6. TOSCA-Shame	-.10	-.10	.23	-.08	.18	--									
7. TOSCA-Blame	-.12	.16	-.09	.01	.29*	.36*	--								
8. TOSCA-Guilt	.13	-.07	-.27	-.09	-.51**	.38**	-.08	--							
9. EATQ-A/F .06	.31*	-.02	.29*	.63**	.32*	.26	-.13	--							
10. YSR-Int.	.06	.01	-.05	.27	.37**	.30*	.18	.14	.41**	--					
11. YSR-Ext.	-.01	.36*	.04	.18	.83**	.21	.39**	-.39**	.62**	.42**	--				
<i>Adult Measures</i>															
12. ERC-ER	.40**	.07	.25	-.17	-.15	-.07	.17	.14	-.24	-.06	-.09	--			
13. ERC-N/L	-.41**	.02	-.31*	.19	.45**	.13	.28*	-.21	.37**	.18	.41**	-.60**	--		
14. C/U Traits	-.42**	.06	-.20	.17	.33*	-.04	.28	-.29*	.22	.08	.23	-.72**	.84**	--	
15. TRF-Int.	-.05	-.11	-.13	.14	.20	.08	.06	-.10	.21	.19	.24	-.46**	.38**	.35*	--
16. TRF-Ext.	-.41**	.05	-.26	.13	.45**	.05	.35*	-.30*	.34**	.17	.38**	-.64**	.89**	.89**	.45*

Note. Stroop = Stroop Interference Score; EATQ-A/F = Aggression/Frustration; C/U Traits = Callous/Unemotional Traits; YSR-Int. = Internalizing; YSR-Ext. = Externalizing; ERC - ER = emotion regulation; ERC - N/L = negativity/lability.

*p < .05 **p < .01

$r = .45, p < .01$) and externalizing behavior ($r = .45, p < .01$) indicating that children who reported increased amounts of antisocial behaviors showed more externalizing and negative lability as observed by adults. Similar results were found for the relationship between adult and child-reported externalizing behaviors. Children's emotion regulation was also correlated with adult-observed externalizing behavior ($r = .34, p < .05$). Adults were able to observe many of the same behaviors that children self-reported as problematic and as more aggressive and frustrating. There were no correlations noted between any of the adult measures and the child reported moral emotion of shame, but adult observed externalizing behaviors did positively correlate with child-reported blame ($r = .35, p < .05$) and negatively correlate with guilt ($r = -.30, p < .01$) in the expected direction. These same results were ascertained for the adult measure/child measure correlation of externalizing behavior ($r = .38, p < .01$).

Regression analyses

Hypothesis 1: The goal was to examine the impact of cognitive interference on emotion regulation, controlling for age and gender, for both child-reported and adult observed emotion regulation. See Table 5. Age and gender did not predict significant variance in child-reported emotion regulation. Cognitive interference also did not add significant variance to child-reported emotion regulation when added as Step 2 and controlling for age and gender in Step 1.

For the adult rated model, age and gender did predict significant variance on adult reported emotion regulation scores, $F(2, 47) = 4.47, p < .01, R^2 = .16$, with gender responsible for 46% of the variance in this model (boys were seen as having higher (poorer) emotion regulation). Cognitive interference did not contribute additional

variance to the model. When adult-rated lability/negativity was examined, similar results occurred. Age and gender offered significant variance on these factors, $F(2, 47) = 4.87, p < .01, R^2 = .17$, with gender negatively associated with lability/negativity, $B = -.57$.

Again, boys were rated by adults as having higher, or worse, lability/negativity. When cognitive interference was added in Step 2, there was no additional variance contributed to the model (See Table 5). Thus, cognitive interference did not contribute to children's emotion regulation for either child-rated or the adult-rated emotion regulation.

Hypothesis 1 was not supported by the data.

Hypothesis 2: In all models, gender and age were entered at Step 1 and measures of emotion regulation were added at Step 2 to investigate the impact of emotion regulation on the dependent variables, internalizing and externalizing behaviors, as reported by the children and adult mentors.

Age and gender did not predict variance in child-reported internalizing behaviors, but emotion regulation (combined Aggression and Frustration sub-scores of the EATQ) contributed 19% variance to the measurement of internalizing behaviors, $F(3,46) = 3.56, p < .01, \Delta R^2 = .19$. Age and gender were responsible for significant variance in child-rated externalizing behaviors, $F(2, 47) = 3.54, p < .05, R^2 = .13$, (externalizing behavior was higher for older children and for boys), while emotion regulation contributed 29% additional variance to externalizing behaviors, $F(3, 46) = 11.18, p < .001, \Delta R^2 = .29$, in Step 2 (See Table 6).

When the adult measure of emotion regulation was used to predict adult observed internalizing behavior, age and gender in Step 1 were not significant, but emotion

Table 5

Hierarchical Regressions Testing Cognitive Inhibition as a Predictor of Emotion Regulation

A. Emotion Regulation - Child Measure ($N = 50$)

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.09	
Gender	.02	.21	.01		
Age	.15	.07	.31*		
Step 2:				.09	.00
Gender	.01	.22	.01		
Age	.15	.07	.31*		
Cognitive Inhibition	.00	.01	.01		

B. Emotion Regulation - Adult Measure ($N = 50$)

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.16*	
Gender	.46	.16	.40**		
Age	.00	.05	.01		
Step 2:				.18	.02
Gender	.40	.16	.35**		
Age	.01	.05	.04		
Cognitive Inhibition	.01	.01	.16		

Table continues

Table 5, cont'd.

C. Lability/Negativity - Adult Measure ($N = 50$)

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.17**	
Gender	-.57	.18	-.42**		
Age	.03	.06	.08		
Step 2:				.21	.04
Gender	-.49	.19	-.36**		
Age	.02	.06	.04		
Cognitive Inhibition	-.02	.01	-.21		

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

Table 6

Hierarchical Regression Analysis Examining Emotion Regulation as a Predictor of Internalizing and Externalizing Behavior - Child Measure (N = 50)

A. Internalizing Behavior

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.00	
Gender	.04	.10	.06		
Age	-.00	.03	-.00		
Step 2:				.19	.19**
Gender	.04	.09	.06		
Age	-.03	.03	-.14		
Emotion Regulation	.20	.06	.45**		

B. Externalizing Behavior

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.13	
Gender	-.05	.11	-.06		
Age	.09	.03	.37**		
Step 2:				.42	.29***
Gender	-.05	.09	-.07		
Age	.05	.03	.19		
Emotion Regulation	.29	.06	.57***		

* $p < .05$. ** $p < .01$. *** $p < .001$

regulation did predict significant variance, $F(3, 46) = 13.76, p < .001$ (See Table 7). The adult measure of emotion regulation also predicted adult-observed externalizing behavior, controlling for age and gender in Step 1 ($F(2, 47) = 4.99, p < .01$, with emotion regulation predicting 27% of the variance in externalizing behaviors, $F(3, 46) = 22.93, p < .001, \Delta R^2 = .27$). When adult observed internalizing behavior was the dependent variable, age and gender did not provide significant variance but lability/negativity accounted for 16% of the variance in the model when added in Step 2, $F(3, 46) = 8.69, p < .01$ (See Table 8).

The impact of lability/negativity was even greater on adult-observed externalizing behavior. Age and gender accounted for 18% of the variance on externalizing behavior ($F(2, 47) = 5.03, p < .01$), and lability/negativity accounted for 63% of the variance in externalizing behavior when it was added as Step 2, $F(3, 46) = 144.39, p < .001$. Thus Hypothesis 2 was supported.

Hypothesis 3: The relationships between moral emotions (guilt, shame, and blame) and child-reported internalizing and externalizing behaviors were examined. In all hierarchical regression analyses, age and gender were entered at Step 1, with one of the moral emotions added as Step 2. Age and gender did not contribute significant variance on child reported internalizing behavior ($F(2, 47) = .08, p < .92$, in the model (See Table 9). Shame accounted for 10% of the increase in internalizing behavior, $F(3, 46) = 5.00, p < .05$. Neither blame nor guilt accounted for significant variance in child-reported internalizing behavior. When child-reported externalizing behavior was the dependent variable, age and gender accounted for 13% of the variance of

externalizing behaviors in each model ($F(2, 47), p < .05$). with boys and older children reporting more externalizing behavior. When each of the moral emotions was considered separately in Step 2, shame did not predict externalizing behavior, but blame predicted more externalizing behavior, $F(3, 46) = 6.8, p < .01$, as did lower scores on guilt, $F(3, 46) = 8.13, p < .01$ (See Table 10).

The predictive value of moral emotions to the measures of callous/unemotional traits was also examined using child-reported measures of these traits (See Table 11). Age and gender did not predict unique variance on child-reported callous/unemotional traits when these variables were put in Step 1. Neither shame nor blame predicted significant variance, but lower amounts of guilt predicted 23% additional variance to callous/unemotional traits, $F(3, 46) = 16.08, p < .001$.

Hypothesis 3 was supported.

Hypothesis 4: The relationship of stressful life events to emotion regulation and externalizing/internalizing behaviors was explored (See Table 12). In the first model, age and gender were entered in Step 1 and number of life stressors was entered in Step 2. When child-reported emotion regulation was the DV, age and gender did not contribute significant variance, nor did the number of life stressors. When child-reported internalizing behaviors was the dependent variable, age and gender did not provide unique variance, but life stressors contributed 8% of the unique variance to the outcome variable in the model, $F(3, 46) = 3.96, p < .05$.

Table 7

*Hierarchical Regression Analysis Examining Emotion Regulation as a**Predictor of Internalizing and Externalizing Behavior - Adult Measure (N = 50)*

A. Internalizing Behavior

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.01	
Gender	-.02	.08	-.03		
Age	-.02	.03	-.11		
Step 2:				.24	.23***
Gender	.09	.08	.17		
Age	-.02	.02	-.10		
Emotion Regulation	-.24	.07	-.52***		

B. Externalizing Behavior

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.18	
Gender	-.49	.16	-.42		
Age	.04	.05	.11		
Step 2				.45	.27***
Gender	-.23	.14	-.19		
Age	.04	.04	.12		
Emotion Regulation	-.58	.12	-.57***		

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 8

Hierarchical Regression Analysis Examining Lability/Negativity as a Predictor of Internalizing and Externalizing Behavior - Adult Measure (N = 50)

A. Internalizing Behavior

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.02	
Gender	-.67	.84	-.12		
Age	-.36	2.64	-.02		
Step 2:				.17	.16**
Gender	-.86	.78	-.15		
Age	2.92	2.69	.16		
Lability/Negativity	5.71	1.94	.43**		

B. Externalizing Behavior

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.18	
Gender	1.22	1.50	.11		
Age	-14.70	4.67	-.42		
Step 2:				.80	.63***
Gender	.47	.74	.04		
Age	-2.03	2.55	-.06		
Lability/Negativity	22.06	1.84	.87***		

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 9

Hierarchical Regression Analysis Examining Moral Emotions as Predictors of Internalizing Behavior - Child Measure (N = 50)

A. Shame

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.00	
Gender	.04	.10	.06		
Age	-.00	.03	-.00		
Step 2:				.10*	.10*
Gender	.06	.36	.09		
Age	.01	.03	.02		
Shame	.13	.06	.32*		

B. Blame

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.00	
Gender	.04	.10	.06		
Age	-.00	.03	-.00		
Step 2:				.04	.05
Gender	.06	.10	.09		
Age	-.01	.03	-.04		
Blame	.08	.06	.20		

Table continues

Table 9 cont'd.

C. Guilt

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.00	
Gender	.04	.10	.06		
Age	-.00	.03	-.00		
Step 2:				.02	.02
Gender	.03	.10	.04		
Age	.00	.03	.01		
Guilt	.05	.05	.14		

* = $p < .05$. ** = $p < .01$

Table 10

Hierarchical Regression Analysis Examining Moral Emotions as Predictors of Externalizing Behavior - Child Measure (N = 50)

A. Shame						
Variable	B	SE	β	R^2	ΔR^2	
Step 1:				.13*		
Gender	-.05	.11	-.06			
Age	.09	.03	.37			
Step 2:				.19	.06	
Gender	-.03	.11	-.04			
Age	.10	.03	.39			
Shame	.11	.07	.24			
B. Blame						
Variable	B	SE	β	R^2	ΔR^2	
Step 1:				.13*		
Gender	-.05	.11	-.06			
Age	.09	.03	.37			
Step 2:				.24	.11**	
Gender	-.01	.10	-.01			
Age	.08	.03	.30			
Blame	.16	.06	.34**			

Table continues

Table 10 cont'd.

C. Guilt

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.13*	
Gender	-.05	.11	-.06		
Age	.09	.03	.37		
Step 2:				.26	.13**
Gender	-.01	.10	-.01		
Age	.08	.03	.33		
Guilt	-.15	.05	-.37**		

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

Table 11

*Hierarchical Regression Analysis Examining Moral Emotions as Predictors of
Callous/Unemotional Traits - Child Measure (N = 50)*

A. Shame

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.11	
Gender	-.05	.08	-.08		
Age	.06	.03	.33		
Step 2:				.15	.04
Gender	-.04	.08	-.06		
Age	.07	.03	.35		
Shame	.08	.05	.21		

B. Blame

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.11	
Gender	-.05	.08	-.08		
Age	.06	.03	.33		
Step 2:				.16	.05
Gender	-.03	.08	-.04		
Age	.05	.03	.29		
Blame	.08	.05	.23		

Table continues

Table 11 cont'd.

C. Guilt

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.11	
Gender	-.05	.08	-.08		
Age	.06	.03	.33		
Step 2:				.34	.23**
Gender	-.00	.07	-.00		
Age	.05	.02	.29		
Guilt	-.15	.04	-.49**		

* = $p < .05$. ** = $p < .01$

Table 12

Hierarchical Regression Analysis Examining Stressful Life Events as a Predictor of Emotion Regulation, Internalizing, and Externalizing Behaviors - Child Measure

(*N* = 50)

A. Emotion Regulation

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.09	
Gender	.02	.21	.01		
Age	.15	.07	.31		
Step 2:				.16	.06
Gender	.05	.21	.04		
Age	.13	.07	.26		
Stressful Life Events	.07	.04	.25		

B. Internalizing Behaviors

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.00	
Gender	.04	.10	.06		
Age	-.00	.03	-.00		
Step 2:				.08	.08*
Gender	.06	.10	.09		
Age	-.01	.03	-.05		
Stressful Life Events	.03	.02	.29*		

Table continues

Table 12 cont'd.

C. Externalizing Behaviors

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.13	
Gender					
Age	-.00	.03	-.00		
Step 2:				.15	.02
Gender	.06	.10	.09		
Age	-.01	.03	-.05		
Stressful Life Events	.03	.02	.29*		

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

Hypothesis 5: The effect of child-reported callous/unemotional (C/U) traits on moral emotions was examined. Age and gender were not significant in the model. Nor did C/U traits contribute additional variance when shame was the DV. Age, gender, and C/U traits were also not significant when blame was the DV.

When guilt was the DV, age and gender were not significant, but C/U traits contributed 25% of the variance to guilt, $F(3, 46) = 16.08, p < .001$. As predicted, these results indicate that children who report increased callous/unemotional traits respond with less guilt in moral decision-making scenarios (See Table 13).

Table 13

Hierarchical Regression Analysis Examining Callous/Unemotional Traits as a Predictor of Children's Moral Emotions (N = 50)

A. Shame						
Variable	B	SE	β	R^2	ΔR^2	
Step 1:				.02		
Gender	-.14	.24	-.09			
Age	-.04	.08	-.08			
Step 2:				.06	.05	
Gender	-.12	.23	-.07			
Age	-.08	.08	-.16			
C/U Traits	.62	.42	.23			
B. Blame						
Variable	B	SE	β	R^2	ΔR^2	
Step 1:				.02		
Gender	-.14	.24	-.09			
Age	-.04	.08	-.08			
Step 2:				.10	.06	
Gender	-.22	.24	-.13			
Age	.05	.08	.10			
C/U Traits	.72	.43	.25			

Table continues

Table 13 cont'd.

C. Guilt

Variable	B	SE	β	R^2	ΔR^2
Step 1:				.02	
Gender	-.14	.24	-.09		
Age	-.04	.08	-.08		
Step 2:				.28	.25***
Gender	.19	.24	.10		
Age	.05	.08	.09		
C/U Traits	-1.71	.43	-.53***		

$p < .05$. ** $p < .01$. *** $p < .001$

Children with incarcerated mothers are exposed to numerous factors and experiences that make them a unique group of at-risk children. They also often exhibit more problematic behaviors than their peers, but the factors that impact the development of problem behaviors are still not clear. Problem behaviors can be more externalized and directed at others, such as struggles with inappropriate anger and aggression, fighting, lying and stealing, and other antisocial behaviors. In contrast, children affected by maternal incarceration can also struggle with higher rates of problematic internalized behaviors, such as higher rates of anxiety, worry, fear, and sadness than their peers. In both cases, these behaviors can lead to problems in personal, social, and academic domains (Hinshaw, 1992). But it is also recognized that not every child who experiences maternal incarceration shows problems. Cognitive, emotional and moral processes were examined in an attempt to understand some of the factors involved in the externalizing and internalizing behaviors expressed by a majority of this at-risk group of children.

Inhibitory Control. Inhibitory control was greater in older children, which is expected in child development due to prefrontal lobe maturation. This supported the proposed moderate but linear developmental trend noted by Zoelch, Seitz and Schumann-Hengsteler (2005) in their research demonstrating developmental trends of the central executive subfunctions in children ages 5 – 10 years.

We had expected that inhibitory control was impaired in these children, and that would help explain their high number of externalizing problems, but that was not the case. Instead, we found that the mechanism whereby children suppress a strong response tendency, which the Stroop so accurately measures, appears to be intact. The children functioned similarly in the area of inhibitory control to children who have not

experienced the incarceration of their mothers. Like children unaffected by maternal incarceration, these children can exercise effortful control over their emotions and behaviors.

There was no significant impact of inhibitory control on emotion regulation, either as reported by the children or observed by the adults. That is, the Stroop measure was not correlated with emotion regulation. This was surprising. Research on the behavioral relationship between inhibition and emotion regulation regularly finds that the two are closely related (Denham, 1998; Rothbart, et al, 2003; Kain & Perner, 2005; Oberauer, 2005). Individuals need to be able to inhibit or activate behaviors in response to emotional situations, a result of which is socially appropriate behavior. It is unusual that inhibitory control in this sample of children was unrelated to their success in emotion regulation.

Emotion Regulation. As expected, children's ability to regulate their emotions was related to their problem behavior. Adults observed that children who were less able to regulate their emotions engaged in significantly more observable problem behaviors. Children's self-ratings indicated that poor emotional regulation was related both to externalized and internalized problem behaviors.

Emotion regulation did not improve in the older children, which should have happened. Poor emotion regulation, including feelings of aggression and frustration, were greater for the older children. The adults observed more externalizing problems in the boys than girls, but they did not observe poorer emotion regulation in older children. It could be that the adults were simply evaluating the behavior of the children with all of the children at the camp, not just the age group with whom they had the most direct contact.

The ability to regulate and control emotions and behavioral responses in emotional situations is an indicator of successful childhood development. According to Denham (1998), emotion regulation develops in children as a result of cognitive development and socialization. Children's emotion regulation changes from their dependency on adults when they are toddlers and preschoolers, to their development of independent coping behaviors that help regulate their own emotions. Problems in emotion regulation have consistently been linked to negative outcomes. In this study, the relationship between poor emotion regulation and increased negative outcomes was quite clear. The children of incarcerated mothers who are having a difficult time controlling their emotions are also reporting more problematic behaviors, both within themselves and directed against others. For this sample we are still left with the perplexing disconnect between inhibitory control and emotion regulation. The typical development of increasing inhibitory control is usually paired with increasing emotion regulation; this relationship was not found, though, in this sample.

Since cognitive development in terms of increasing inhibitory control appears to be on track, perhaps socialization is a likely place to look for what is going on in emotion regulation (or lack thereof). It may be that the models they have at home or in their neighborhoods do not show them "how to act" and how to appropriately keep their negative emotions in check. We do not have data to prove this point, but it seems likely. Children will naturally observe others and how they cope with their own and others' emotions. Dunn and Brown (1994) found that children's emotional understanding was poorer in families with higher levels of negative affect or distress. Therefore, children

who are surrounded by poor models of emotion regulation may be more at risk for developing poor emotion regulation capabilities.

Socialization of emotion regulation also occurs through direct teaching about emotions. Denham (1998) suggests that effective parents "coach" about emotions through verbal discourse and conversations, using phrases such as "it's not nice to laugh at that boy who's sad" and "I know you're angry that you weren't invited to his party, but you still can't hit your friend." Children also need to be taught directly about their own emotions and the emotions of others around them. The direct teaching about emotion display rules and how to regulate emotional arousal -- both positive and negative emotions -- is an important avenue through which children learn to regulate their emotions. Talking about prosocial behavior and emotional regulation has even been found to be significant above and beyond the negative effects of low socioeconomic status for the development of emotion regulation in African American pre-schoolers (Gardner, 2006). On the other hand, ignoring, denying, or dismissing children's emotions predicts emotional dysregulation (Eisenberg, Fabes & Murphy, 1996). It is possible that children with incarcerated mothers lack the opportunities to experience and model a repertoire of appropriate emotional responses. In addition, it is possible that they have not been socialized enough about identifying and managing their own emotions to regulate them appropriately.

Emotion regulation can also be learned from peers. Emotion coping strategies are related to social competence, and social competence will impact peer relationships. Children who can regulate their emotions are more likely to be successful in peer relationships. But when children are poor in emotion regulation, they will likely be

rejected and regarded negatively by their peers. Poor emotion regulation in children is highly related to externalizing and antisocial behavior into adolescence (McDowell, et al, 2002). It is also likely that "rejected" children may befriend other children who are on the social fringe of their peer groups. Berndt and Keefe (1995) noted that as youth associate with more disruptive friends, they become more disruptive themselves. Myers et al. (1999) found that children with incarcerated mothers often turn to "deviant" and troublesome peers because they don't feel that they fit in with the "good" kids. As a possible result, when these children watch their peers handle emotional situations, they likely will be observing uncontrolled and maladaptive emotional responses. Sadly, they may learn to respond in similar manners in order to maintain the friendships with the more maladjusted peers. The cycle of poor emotion regulation is perpetuated through social experience.

Socialization and attachment may also interact to affect emotion regulation. Recent research has examined the relationship of parent-child attachment and socialization factors to externalizing behaviors. The socialization factors of harsh parenting and lack of parental involvement and/or supervision of their children's activities have been shown to be familial predictors of antisocial and problematic behaviors in children and adolescence (Frick & Jackson, 1993). As children enter school, parental supervision becomes more dependent on children's cooperation. This level of cooperation is usually a direct outcome of the parent child mutual interpersonal orientation. Children have also developed a "model of self" (one's worthiness to be loved and protected) that is an outcome of attachment and maternal relationship. Together, the feelings of self worth, quality of supervision, and socialization, impact a child's exposure to risk factors that

may negatively impact them, such as problematic peer interactions and even substance abuse (Guttman-Steinmetz & Crowell, 2006). It is proposed that the caregiver's inability to provide the "safety net" to protect a child from environmental risks along with the child's indifference to parental and societal values leads to the development of externalizing problems. Children with incarcerated mothers often feel alone and isolated. In this study, the children and adults reported that poor emotion regulation predicted both externalizing and internalizing behaviors. They are also exposed to a significant number of life stressors that impact their internalizing behaviors more so than externalizing problematic behaviors. Not having the "safety net" that is supposed to be provided by their mothers may render these children helpless and dysregulated in their emotional responses and place them at greater risk for developing problem behaviors.

Moral Emotions. Each of the moral emotions investigated in this study—guilt, shame, and blame—had a relationship with externalizing or internalizing behaviors. Blame and shame predicted a higher number of problematic behaviors. Children who tended to respond to moral situations with feelings of blame engaged in more "acting out" and negative behaviors (externalizing). Children who reported feelings of shame expressed greater feelings of anxiety, fearfulness, and sadness (internalizing). The children who reported shame withdrew and internalized their feelings, while it was blame that was associated with more problematic and observable externalizing behaviors.

As predicted, guilt had a negative relationship with externalizing problematic behaviors. Higher levels of guilt predicted lower amounts of observable problem behaviors. Higher levels of guilt also predicted lower amounts of a specific cluster of callous/unemotional traits that are considered to be antisocial behaviors, including lying,

teasing, and acting without thinking about the consequences. In both cases, children reporting healthy guilt also were the children able to control their behaviors.

Although the relationship between the moral emotions and internalizing and externalizing behaviors was predicted, it is important to understand the impact these feelings can have on the children who are experiencing them. Guilt is viewed as an adaptive moral emotion (Tangney, 1995). A person who feels guilty after wrongdoing accepts responsibility and wants to make amends. The internal discomfort is real, and it is something that can be relieved by efforts to apologize and make things right. Higher amounts of guilt are associated with more prosocial and altruistic behavior. Shame and blame, in contrast, cause difficulties. The focus of shame is on the self, with resultant feelings of powerlessness and psychological pain. Shame is associated with less of an ability to empathize and to inhibit interpersonal aggression. The resulting behavioral responses to shame-proneness are to avoid, escape, or to hide. Tangney also proposed that blame - redirecting anger outside the self- could be highly correlated with shame as one possible response to shame-proneness; our study did not find this relationship, however. Previous studies have also found that shame-proneness is highly correlated with proneness to anger in both boys and girls, and even further, that this anger is managed in an "unconstructive fashion" (Tangney, 1995, p1140).

The moral emotions of guilt, shame and blame have the same effects on children with incarcerated mothers as with their peers whose mothers are not in prison. Feelings of guilt appear to be highly adaptive in helping children control their behavior. When the children experience feelings of shame, they withdraw into themselves. Too much shame is associated with children disengaging from their surroundings and continuing in the

direction of self-blame and condemnation. It is difficult to change behavior when a child feels worthless. And even taking the responsibility off oneself and putting it on others - as with blame - only results in short-term positive feelings. Like shame, feelings of blame do not help a child to adjust, change, and learn from mistakes.

Stressful Life Events. Children in this study experienced a high number of stressors in the previous year. Almost half (44%) of the children experienced 4 or more stressful life events, an outcome that is consistent from previous studies of this group of children (Amlund-Hagen, Myers & Mackintosh, 2005; Smarsh, 2000). Forty-eight percent experienced the addition of a new baby into the family and the serious illness and/or hospitalization of a family member. Forty two percent experienced the death of a family member, and 24% said they were afraid to go outside and play in their own neighborhoods. More than one-third (36%) changed where they went to school in the past year.

Children who had more stressors also had more internalizing problems. But the number of stressful life events did not predict their ability to regulate their emotions or their externalizing behaviors. It appears that the cumulative effect of the stressors was for children to feel anxious and withdrawn rather than acting out. The result is a feeling of powerlessness in light of the large array of stressors that are not within the control of the children. In some ways, internalizing behavior may be a more adaptive response to the environment in which the children live as compared to externalizing behaviors, which are often precursors to getting into trouble and delinquency. Sadly, it is likely that increases or decreases in environmental risk factors are rare, as "stability" rather than change appears to be the rule, not the exception, for at-risk children (Sameroff, et al., 1998).

Limitations of the Present Study. The goal of this study was to examine some of the factors that might help predict the documented high levels of internalizing and externalizing behaviors exhibited by children who have an incarcerated mother. As with any study, there were limitations in that only selected factors were examined. Within child factors, such as temperament, emotionality, and intelligence were not explored and it is likely that these, too, would have an impact on problematic behaviors. Early developmental histories were also not collected as the person likely to be most knowledgeable about these matters, the mother, was incarcerated. Additional demographic information, such as length of time mother has been incarcerated, who the child is living with, age at time of mother's arrest, and other details, might have helped answer some questions about factors impacting emotion regulation as well as the presence of internalizing and externalizing behaviors.

Data for this study were collected from camp participants and their mentors. The fact that their caregivers would even send the children in their care to a camp for a week indicates that the children are living in a supportive home environment. Families who learn about the camp must fill out applications and mail them in. They must cooperate with the transportation plans. They must have the children packed and ready to be picked up on the right day. Therefore, those children who are likely living in the most at-risk and difficult situations after their mother's incarceration are not likely to be camp participants. There may be sample bias towards children who are living in the most stable of alternative home environments.

Some researchers propose that it is simplistic to examine only one aspect of executive functioning, in this case cognitive inhibition, to explain behavioral problems.

They suggest that EF is too complex and involves metacognitive processes that cannot be demonstrated through examination of a single EF function (Zelazo & Muller, 2002).

While this makes some sense, there is ample current neurological and cognitive evidence suggesting that the ability to inhibit prepotent responses is of foremost importance in regulating both behaviors and emotions. There is also some discussion as to the differences between cognitive and behavioral inhibition. The Stroop test has been used as a reliable and valid measure of cognitive inhibition for many years. Other measures such as the Tower of Hanoi and the Wisconsin Card Sorting Task have also been used to measure cognitive inhibition, but there were some limitations that made using these measures in a camp setting impossible.

Contributions of the Study and Implications for Further Investigation. This study has shown that children who experience the incarceration of their mothers have the cognitive and moral tools with which to regulate their emotions, but that they still struggle with emotion regulation. Poor emotion regulation puts children at tremendous risk of developing difficulties ranging from psychopathy to long lasting peer and relationship problems. But knowing that the children have the capacity to change is important. Further investigation into the areas of resilience may yield inroads to impacting the emotional competence in children affected by maternal incarceration. One possibility might be to offer direct instruction in emotion regulation strategies.

Children of incarcerated mothers have a tendency to withdraw and internalize their feelings in responses to the stressors that they are experiencing rather than acting out. This may actually prove to be a form of resiliency for these children, albeit a process that is painful for them. Children who act out and get into trouble are labeled as deviant

and delinquent. By keeping their emotions internalized, children may be surviving the emotions that are affecting them. It may also be important to identify these children in order to offer them support in the school and community setting. It is not realistic to assume that children who experience maternal incarceration will be easily identifiable because they get in trouble. The implications and expected outcomes for children with internalizing behaviors are often as maladaptive and long-lasting as those that occur for children with increased externalizing behaviors.

Findings of this study correlate highly with recent investigations in the effectiveness of violence prevention programs and the potential importance of emotion regulation in program outcomes. Investigators are concluding that a model of intervention framed within a social cognitive model is not having the hoped for effects of changing violent behavior (Taub, 2001; Orpinas, Kelder, Frankowski, Murray, Zhang &McAlister, 2000; Farrell & Meyer, 1997). Researchers in this area are concluding that youth need interventions that include direct instruction and experience with emotion regulation. Lemerise and Arsenio (2000) support these findings with a modified model of social competence. They have proposed that emotional processes (i.e. emotionality, emotion regulation, moods, emotion recognition and empathic responsiveness) should be woven into a social information processing model. They suggest that a failure to understand the emotional content of children's knowledge structures (cognition) will limit our ability to intervene and effect change in behavioral outcomes (Lemerise & Arsenio, 2000). Therefore, continued work in the area of emotion regulation strategies as avenues through which to reduce the levels of externalizing and internalizing behaviors for children who experience the incarceration of their mothers may parallel the need for such instruction in

violence prevention work. For both, the goal is to improve the psychological well-being and social functioning of all children, especially those most at-risk.

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Appendix A

Stroop Color and Word Test : Children's Version for Ages 5* - 14

The STROOP is a copyrighted measure and may not be reproduced here. The Stroop can be ordered from:

Western Psychological Services
12031 Wilshire Blvd.
Los Angeles, CA 90025-1251

Appendix B

Instructions for the TOSCA-C

I will read about some situations that might happen to you once in a while. Then, I will read some different ways that people might think or feel.

Really imagine that you are in the situation now and imagine how you might think or feel. After I read each statement, point to the circle that describes how likely the statement would be true for you. The largest circle means that you are very likely to think or feel that way and the smallest circle means that you are not at all likely to respond that way.

Sample

You wake up very early one morning on a school day.

- a. I would eat breakfast right away.**
- b. I would check over my homework before I left for school.**
- c. I would not feel like getting out of bed.**

Remember that everyone has good days and bad days. Everyone sometimes does things that they wouldn't normally do. **There are no right or wrong answers to these questions.**

1. Your aunt is giving a big party. You are carrying drinks to people and you spill one all over the floor.



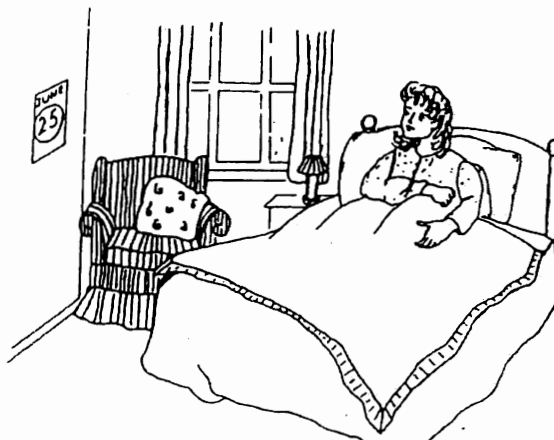
	1	2	3	4	5
	not at all likely	unlikely	maybe (half & half)	likely	very likely
a) I should have been more careful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) My aunt wouldn't mind that much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) I would run upstairs to be away from everybody.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) The tray was too heavy. It wasn't my fault.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. You get a test back in school and you didn't do well.



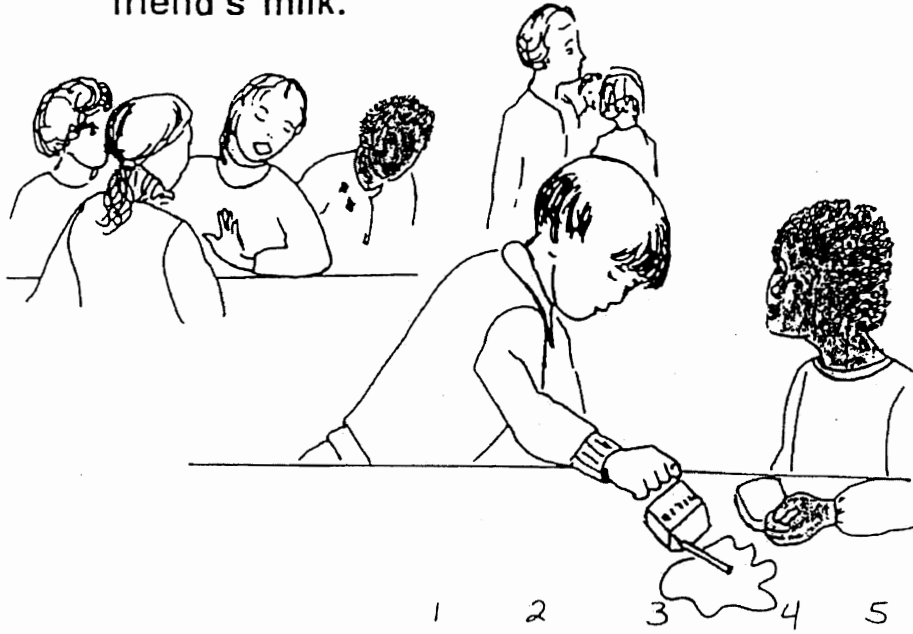
	1	2	3	4	5
	not at all likely	unlikely	maybe (half & half)	likely	very likely
a) I'd feel that I should have done better. I should have studied more.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) I'd feel stupid.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) It's only one test. It doesn't really matter.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) The teacher must have graded it Wrong. It wasn't my fault.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. You wake up one morning and remember it's your mother's birthday. You forgot to get her something.



	1	2	3	4	5
	not at all <u>likely</u>	<u>unlikely</u>	maybe (half & half)	<u>likely</u>	very <u>likely</u>
a) It's not the gift that matters. All that really matters is that I care.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) After everything she's done for me, how could I forget her birthday.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) I'd feel irresponsible and thoughtless.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) Someone should have reminded me. It wasn't my fault.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. You trip in the cafeteria and you spill your friend's milk.



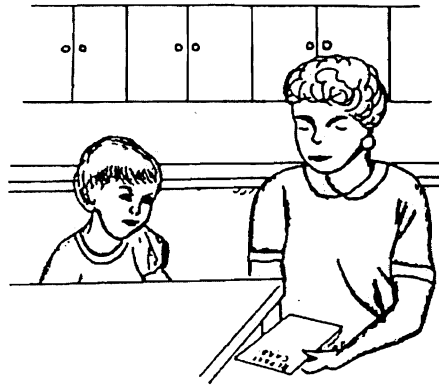
	1	2	3	4	5
	not at all likely	unlikely	maybe (half & half)	likely	very likely
a) I'd be thinking that everyone is watching me and laughing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) I'd feel sorry, very sorry. I should have watched where I was going.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) I wouldn't feel bad because milk doesn't cost very much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) I couldn't help it. The floor was slippery. It wasn't my fault.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. You accidentally break your aunt's vase.
Your aunt scolds your little cousin
instead of you.



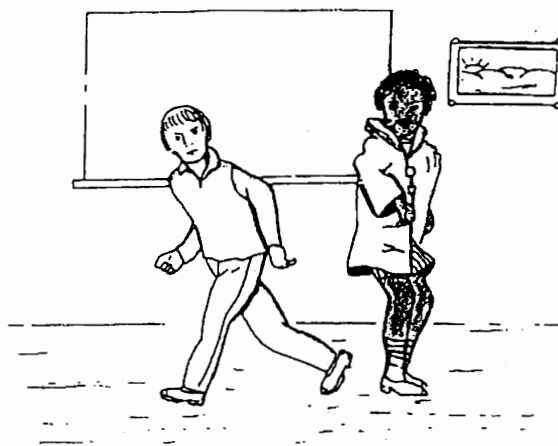
	1	2	3	4	5
	not at all likely	unlikely	maybe (half & half)	likely	very likely
a) If I didn't tell the truth, something inside would bother me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) No one is going to like me if my cousin tells on me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) She only <u>scolded</u> him; it's no big deal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) She should find out what happened before she starts yelling. It wasn't my fault she yelled at him.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Your report card isn't as good as you wanted. You show it to your mother when you get home.



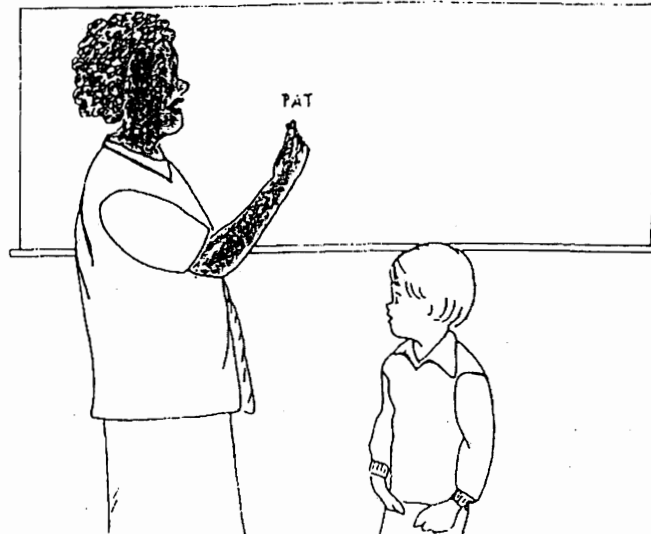
	1	2	3	4	5
	not at all likely	unlikely	maybe (half & half)	likely	very likely
a) Everyone gets bad grades once in a while. it's no big deal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) I really didn't deserve the grades, it wasn't my fault.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Now that I got a bad report card, I'm worthless, no good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) I should listen to everything the teacher says and study harder.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. You and your best friend get into an argument at school.



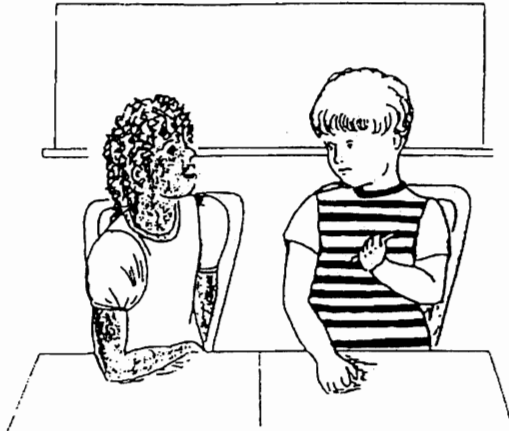
	1	2	3	4	5
	not at all likely	unlikely	maybe (half & half)	likely	very likely
a) It was my friend's fault, not mine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) We do it all the time and we always make up.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) I would feel sorry and feel like I shouldn't have done it. I'd make up with my friend.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) I'd probably feel real lousy about myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Your teacher writes your name on the board for chewing gum in class.



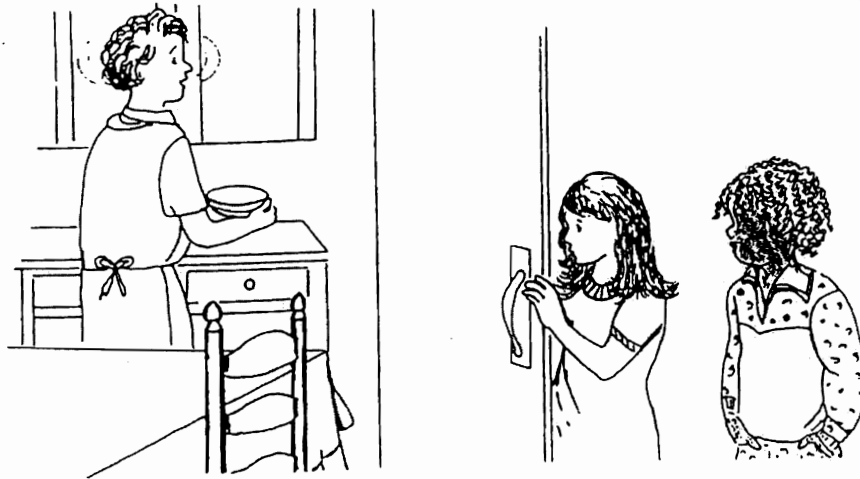
	not at all likely 1	unlikely 2	maybe (half & half) 3	likely 4	very likely 5
a) That my teacher was unfair to write my name on the board.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) I'd slide down in my chair, embarrassed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) If I was chewing gum it would serve me right because it's a rule not to chew gum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) I wouldn't mind. People at school chew gum all the time, so it doesn't really matter.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. You and your friend are talking in class and you get in trouble.



	1	2	3	4	5
	not at all likely	unlikely	maybe (half & half)	likely	very likely
a) That I shouldn't have talked in the first place. I deserve to get in trouble.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) We were only whispering and that's not a big deal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) The teacher is mean and unfair.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) I'd feel like everyone in the class was looking at me and they were about to laugh.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. You invite a friend to sleep over. But when you ask your grandmother, she says “absolutely not” and your friend gets very upset.



	not at all <u>likely</u> 1	<u>unlikely</u> 2	maybe <u>(half & half)</u> 3	<u>likely</u> 4	very <u>likely</u> 5
a) Since I already promised my friend, I'd feel sick with embarrassment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) My grandmother's not fair. it's her fault that my friend is upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) I'd feel sorry I asked my friend before I asked my grandmother. Next time I'll ask grandmother first.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d) My friend just needs to get over it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix C

Youth Self Report

Below is a list of items that describe kids. For each item that describe you *now or within the past 6 months*, please circle the **2** if the item is *very true or often true* of you. Circle the **1** if the item is *somewhat or sometimes true* of you. If the item is *not true* of you, circle the **0**.

1. I argue a lot	0	1	2
2. I like animals	0	1	2
3. I brag	0	1	2
4. I feel lonely	0	1	2
5. I cry a lot	0	1	2
6. I am pretty honest	0	1	2
7. I am mean to others	0	1	2
8. I try to get a lot of attention	0	1	2
9. I destroy my own things	0	1	2
10. I disobey at school	0	1	2
11. I don't feel guilty after doing something I shouldn't	0	1	2
12. I am jealous of others	0	1	2
13. I am willing to help others when they need help	0	1	2
14. I am afraid I might think or do something bad	0	1	2
15. I feel that I have to be perfect	0	1	2
16. I feel that no one loves me	0	1	2
17. I feel that others are out to get me	0	1	2
18. I feel worthless or inferior	0	1	2
19. I get in many fights	0	1	2
20. I hang around with kids who get in trouble	0	1	2
21. I would rather be alone than with others	0	1	2
22. I lie or cheat	0	1	2
23. I am nervous or tense	0	1	2
24. I can do certain things better than most kids	0	1	2
25. I am too fearful or anxious	0	1	2
26. I feel dizzy	0	1	2
27. I feel too guilty	0	1	2
28. I feel overtired	0	1	2
Physical problems without known medical cause:			
29. Aches or pains (not stomach or headaches)	0	1	2
30. Headaches	0	1	2
31. Nausea, feel sick	0	1	2
32. Problems with eyes (not if corrected by glasses)	0	1	2
33. Rashes or other skin problems	0	1	2
34. Stomach aches or cramps	0	1	2
35. Vomiting, throwing up	0	1	2

Youth Self Report - page 2

36. I can be pretty friendly	0	1	2
37. I like to try new things	0	1	2
38. I would rather be with older kids than with kids my own age	0	1	2
39. I refuse to talk	0	1	2
40. I run away from home	0	1	2
41. I scream a lot	0	1	2
42. I am secretive or keep things to myself	0	1	2
43. I am self-conscious or easily embarrassed	0	1	2
44. I can work well with my hands	0	1	2
45. I show off or clown	0	1	2
46. I am shy	0	1	2
47. I have a good imagination	0	1	2
48. I stand up for my rights	0	1	2
49. I steal at home	0	1	2
50. I am stubborn	0	1	2
51. My moods or feelings change suddenly	0	1	2
52. I enjoy being with other people	0	1	2
53. I am suspicious	0	1	2
54. I swear or use dirty language	0	1	2
55. I like to make others laugh	0	1	2
56. I talk too much	0	1	2
57. I tease others a lot	0	1	2
58. I have a hot temper	0	1	2
59. I threaten to hurt people	0	1	2
60. I like to help others	0	1	2
61. I cut classes or skip school	0	1	2
62. I don't have much energy	0	1	2
63. I am unhappy, sad, or depressed	0	1	2
64. I am louder than other kids	0	1	2
65. I try to be fair to others	0	1	2
66. I enjoy a good joke	0	1	2
67. I like to take life easy	0	1	2
68. I try to help other people when I can	0	1	2
69. I keep from getting involved with others	0	1	2
70. I worry a lot	0	1	2

Appendix D

Inventory of Callous-Unemotional Traits (ICU)
(Youth Version)

Instructions: Please read each statement and decide how well it describes you. Mark your answer by circling the appropriate number (0-2) for each statement.

	Not at all True	Sometimes True	Definitely True
1. You blame others for your mistakes.	0	1	2
2. You care about how well you do at camp.	0	1	2
3. You act without thinking of the consequences.	0	1	2
4. Your emotions are shallow and fake.	0	1	2
5. You lie easily and skillfully.	0	1	2
6. You are good at keeping promises.	0	1	2
7. You brag a lot about your abilities, accomplishments, or possessions.	0	1	2
8. You get bored easily.	0	1	2
9. You use or "con" other people to get what you want.	0	1	2
10. You tease or make fun of other people.	0	1	2
11. You feel bad or guilty when you do something wrong.	0	1	2

Youth ICU page 2

	Not at all True	Sometimes True	Definitely True
12. You do risky or dangerous things.	0	1	2
13. You act charming and nice to get things you want.	0	1	2
14. You get angry when corrected or punished.	0	1	2
15. You seem to think that you are better or more important than other people.	0	1	2
16. You do not plan ahead, or leave things to the "last minute."	0	1	2
17. You are concerned about the feelings of others.	0	1	2
18. You do not show feelings or emotions.	0	1	2
19. You keep the same friends.	0	1	2

Appendix E

EATQ – R: Self-Report

1. If I'm mad at somebody, I tend to say things that I know will hurt their feelings (A5)
 2. When I'm angry, I throw or break things (A9)
 3. It's hard for me not to open presents before I'm supposed to (IC10-R)
 4. If I get really mad at someone, I might hit them (A13)
 5. When someone tells me to stop doing something, it's easy for me to stop (IC14)
 6. I tend to be rude to people I don't like (A22)
 7. It bothers me when I try to make a phone call and the line is busy (F25).
 8. The more I try to stop myself from doing something I shouldn't, the more likely I am to do it (IC26-R)
 9. I get very upset if I want to do something and my parents won't let me (F36).
 10. It's easy for me to keep a secret (IC43)
 11. I get irritated when I have to stop doing something that I am enjoying (F47).
 12. When I'm really mad at a friend, I tend to explode at them (A50)
 13. It really annoys me to wait in long lines (F56).
 14. I pick on people for no real reason (A58).
 15. I get very frustrated when I make a mistake in my school work (F60).
 16. It frustrates me if people interrupt me when I'm talking (F62).
 17. I can stick with my plans and goals (IC63)
 18. I get upset if I'm not able to do a task really well (F64).
-

Appendix F

Life Events: Self-Report

These questions ask about things that happen in people's lives. Please answer yes or no to the following questions.

During the last year:

1. Did your family move to a new home or apartment? (T)
 2. Did your family's property get wrecked or damaged due to fire, burglary, or other disaster? (C)
 3. Has anyone in your family gotten married? (T)
 4. Has your family had a new baby come into the family? (T)
 5. Has anyone moved out of your home? (T)
 6. Did a family member die? (C)
 7. Did a close relative or a friend die? (C)
 8. Has a family member become seriously ill, injured badly, and/or had to stay at the hospital? (C)
 9. Has a family member been robbed or attacked? (V)
 10. Has someone else you know, other than a member of your family, gotten beaten, attacked, or really hurt by others? (V)
 11. Have you seen anyone beaten, shot, or really hurt by someone? (V)
 12. Did you change where you went to school? (T)
 13. Have you seen or been around people shooting guns? (V)
 14. Did you have to go live in a foster home? (T)
 15. Have you been afraid to go outside and play, or have your parents made you stay inside because of gangs or drugs in your neighborhood? (V)
 16. Have you had to hide someplace because of shootings in your neighborhood? (V)
-

Appendix G

Teacher Report Form
(Camp Mentor)

Instructions: Below is a list of items that describe campers. For each item that describes the camper now, please circle the **2** if the item is **very true or often true** of the camper. Circle the **1** if the item is **somewhat or sometimes true** of the camper. If the item is **not true** of the camper, circle the **0**. Please answer all items as well as you can, even if some do not seem to apply to this camper.

0 = Not True (as far as you know) 1 = Somewhat or Sometimes True 2 = Very True or Often True

1. Complains of loneliness	0	1	2
2. Cries a lot	0	1	2
3. Fears he/she might think or do something bad	0	1	2
4. Feels he/she has to be perfect	0	1	2
5. Feels or complains that no one loves him/her	0	1	2
6. Feels others are out to get him/her	0	1	2
7. Would rather be alone than with others	0	1	2
8. Nervous, high-strung, or tense	0	1	2
9. Overconforms to rules	0	1	2
10. Too fearful or anxious	0	1	2
11. Feels dizzy	0	1	2
12. Feels too guilty	0	1	2
13. Overtired	0	1	2
14. Physical problems <i>without known medical cause:</i>			
a. Aches or pains (not stomach or headaches)	0	1	2
b. Headaches	0	1	2
c. Nausea, feel sick	0	1	2
d. Problems with eyes (not if corrected by glasses)	0	1	2
describe: _____			
e. Rashes or other skin problems	0	1	2
f. Stomachaches or cramps	0	1	2
g. Vomiting, throwing up	0	1	2
15. Refuses to talk	0	1	2
16. Secretive, keeps things to self	0	1	2
17. Self-conscious or easily embarrassed	0	1	2
18. Shy or timid	0	1	2
19. Stares blankly	0	1	2
20. Feels hurt when criticized	0	1	2
21. Sulks a lot	0	1	2

Mentor Report Form - page 2

22. Underactive, slow moving, or lacks energy	0	1	2
23. Unhappy, sad, or depressed	0	1	2
24. Overly anxious to please	0	1	2
25. Is afraid of making mistakes	0	1	2
26. Withdrawn, doesn't get involved with others	0	1	2
27. Worries	0	1	2
28. Argues a lot	0	1	2
29. Defiant, talks back to staff	0	1	2
30. Bragging, boasting	0	1	2
31. Cruelty, bullying or meanness to others	0	1	2
32. Demands a lot of attention	0	1	2
33. Destroys his/her own things	0	1	2
34. Disobedient at camp	0	1	2
35. Disturbs other campers	0	1	2
36. Doesn't seem to feel guilty about misbehaving	0	1	2
37. Easily jealous	0	1	2
38. Gets in many fights	0	1	2
39. Hangs around with others who get in trouble	0	1	2
40. Lying or cheating	0	1	2
41. Talks out of turn	0	1	2
42. Prefers being with older children or youths	0	1	2
43. Disrupts class discipline	0	1	2
44. Screams a lot	0	1	2
45. Showing off or clowning	0	1	2
46. Explosive and unpredictable behavior	0	1	2
47. Demands must be met immediately, easily frustrated	0	1	2
48. Steals	0	1	2
49. Stubborn, sullen, or irritable	0	1	2
50. Sudden changes in mood or feelings	0	1	2
51. Swearing or obscene language	0	1	2
52. Talks too much	0	1	2
53. Teases a lot	0	1	2
54. Temper tantrums or hot temper	0	1	2
55. Threatens people	0	1	2
56. Tardy to camp activities	0	1	2
57. Unusually loud	0	1	2

Appendix H

APSD
(Mentor Report)

Instructions: Please complete the background information above. Then read each statement and decide how well it describes the child. Mark your answer by circling the appropriate number (0-2) for each statement. Do not leave any statement unrated. If a behavior has not been observed during the time you've spent with the child at camp, please select "0".

	Not at all True	Sometimes True	Definitely True
1. Blames others for his/her mistakes.	0	1	2
2. Is concerned about how well he/she does at camp.	0	1	2
3. Acts without thinking of the consequences.	0	1	2
4. His/her emotions seem shallow and not genuine.	0	1	2
5. Lies easily and skillfully.	0	1	2
6. Is good at keeping promises.	0	1	2
7. Brags excessively about his/her abilities, accomplishments, or possessions.	0	1	2
8. Gets bored easily.	0	1	2
9. Uses or "cons" other people to get what he/she wants.	0	1	2
10. Teases or makes fun of other people.	0	1	2
11. Feels bad or guilty when he/she does something wrong.	0	1	2

APSD (Mentor) page 2

	Not at all True	Sometimes True	Definitely True
12. Engages in risky or dangerous activities.	0	1	2
13. Can be charming at times, but in ways that seem insincere or superficial.	0	1	2
14. Becomes angry when corrected or punished.	0	1	2
15. Seems to think that he or she is better or more important than other people.	0	1	2
16. Does not plan ahead, or leaves things to the "last minute."	0	1	2
17. Is concerned about the feelings of others.	0	1	2
18. Does not show feelings or emotions.	0	1	2
19. Keeps the same friends.	0	1	2

Appendix I

Emotion Regulation Checklist (ERC)
Mentor-ReportMentor Report

1. Is a cheerful child (ER)
 2. Exhibits wide mood swings (child's emotional state is difficult to anticipate because s/he moves quickly from positive to negative moods) (LN).
 3. Responds positively to neutral or friendly overtures by adults (ER).
 4. Transitions well from one activity to another; does not become anxious, angry, distressed, or overly excited when moving from one activity to another (LN-R).
 5. Can recover quickly from episodes of upset or distress (for example, does not pout or remain sullen, anxious, or sad after emotionally distressing events) (LN -R)
 6. Is easily frustrated (LN).
 7. Responds positively to neutral or friendly overtures from peers (ER).
 8. Is prone to angry outbursts/tantrums easily (LN).
 9. Is able to delay gratification (LN -R).
 10. Takes pleasure in the distress of others (for example, laughs when another person gets hurt or punished; enjoys teasing others) (LN).
 11. Can modulate excitement in emotionally arousing situations (for example, does not get carried away in high-energy play situations, or overly excited in inappropriate contexts) (LN -R).
 12. Is whiny or clingy with adults (neither sub-scale, does not load on either factor).
 13. Is prone to disruptive outbursts of energy and exuberance (LN).
 14. Responds angrily to limit-setting by adults (LN).
 15. Can say when s/he is feeling sad, angry or mad, fearful or afraid (ER).
 16. Seems sad or listless (ER -R).
 17. Is overly exuberant when attempting to engage others in play (LN).
 18. Displays flat affect (expression is vacant and inexpressive; child seems emotionally absent) (ER -R).
 19. Responds negatively to neutral or friendly overtures by peers (for example, may speak in an angry tone of voice or respond fearfully) (LN).
 20. Is impulsive (LN).
 21. Is empathic towards others; shows concern when others are upset or distressed (ER).
 22. Displays exuberance that others find intrusive or disruptive (LN).
 23. Displays appropriate negative emotions (anger, fear, frustration, distress) in response to hostile, aggressive, or intrusive acts by peers (ER).
 24. Displays negative emotions when attempting to engage others in play (LN).
-

Appendix J

Dear [Parent or Caregiver]

This letter is to tell you about a research project planned for children at the All God's Children camp. I am a Developmental (Child) Psychologist on the faculty of Virginia Commonwealth University. I am also on the planning committee for the All God's Children Camp and have worked with the children at camp since its first year.

You have a choice as to whether your child takes part in the research, and so I want to tell you more so that you can decide.

How is this project done?

Each child (whose family has agreed and signed consent) will sit down with me or one of my graduate students in a public place during the day at camp and be interviewed, one at a time. The children will answer a list of questions, and we will write down the answers. This will take about 30-45 minutes. Then, the child will go back to camp activities. It has been our experience that most children enjoy being interviewed at camp.

We will also ask the children's mentors (the adults who come to camp to help care for the children) to answer questions about the children.

What are we trying to learn?

This study is to help us understand normal healthy children who have experienced their mothers going to jail or prison. We are interested this year in how children think about events to which they might have emotional or moral reactions such as guilt or shame. For example, we will be asking the children how they might feel after accidentally breaking an aunt's vase or tripping in the cafeteria and accidentally spilling a friend's milk. A "thinking" task looks at how each child is able to inhibit or stop one response and say or do something else. For example, the word "green" will be presented in blue ink, and the child is supposed to say "blue." We will use questionnaires to ask children about life events and about behavior problems they see in themselves. We also want to learn how adults who have had the chance to spend time with the children see them in a group with other children. We will therefore ask the mentors to tell us how they see the children get along with each other and how well they play together. We will NOT

be asking any questions about their mothers or caregivers, and we will not ask any questions about incarceration or their reactions to their mothers' incarceration.

Here is some information you need to know.

If you prefer that your child not take part, we will respect that. **Your child will only take part if you give consent.** Your child gets to come to camp and participate in all the camp activities, even if you say 'no' to the research project. We believe that this research is safe and that there is little to no risk in taking part. We will give a place on the consent form to check 'yes' or 'no' for your child's participation. Your child's answers will be confidential, which means private. No names will be attached to the answers. We will keep all the study materials in a safe and private place. Your child is also free to choose whether to take part and even to quit after starting if not enjoying it. Your child will not receive any direct benefits from the research. It may help us better understand other children.

If you have questions, please contact me, Dr. Barbara Myers at (804) 828-6752 (office) or by e-mail (bmyers@vcu.edu). I will be glad to talk with you and answer your questions. If I am not at my desk when you call, please leave your name and number and I will return your call. If you have general questions to ask about your child's rights as a research participant, or if you feel that your child has been injured by participating in this research project, we have a special office at VCU called the Office of Research Subjects Protection (804-828-0868). You may keep this letter, so if you think of questions now or later, you can contact me or the Office of Research Subjects Protection.

Please sign the consent form, indicating 'yes' or 'no' to whether you'd like your child to take part. Please also ask a witness—any adult you know—to sign the consent form on the witness line. This gives assurance that this is truly your consent and your signature.

Please put both the Consent Form and the camp Health Form in the envelope provided and *send them to camp with your child.*

If your child has medication for use during camp, please put the medicine and the instructions in the same envelope. Please send prescription medications in the original bottle from the pharmacy with the child's name on it.

Please do not mail the envelope to us but instead send it to camp with your child. We will collect the envelope as the child arrives at camp and keep it in a safe and private place. You may keep this letter and the copy of this consent form. Thank you very much.

Yours truly,

Barbara J. Myers, Ph. D.
Assoc. Professor of Psychology
Virginia Commonwealth University

Parent/Caregiver Camp Study Consent Form

Child's name (please print)

2nd child's name (if two come to camp)

I am legally permitted to give consent for this child.

_____ *I give consent for this child to take part in the research project described in this letter.*

_____ *I do NOT give consent for this child to take part in the research project described in this letter. I understand that the child still gets to participate in the All God's Children Camp.*

Your signature

Date

Witness signature

Date

Please sign and send to camp with your child in the large envelope provided. Put the camp medical form and your child's medications in the same envelope. Please keep a copy of the consent for your records.

Appendix K

Dear [Camp Mentor]

This letter is to tell you about a research project planned for children at the All God's Children camp. I am a Developmental (Child) Psychologist on the faculty of Virginia Commonwealth University. I am also on the planning committee for the All God's Children Camp and have worked with the children at camp since its first year.

You have a choice as to whether you take part in the research, and so I want to tell you more so that you can decide.

How is this project done?

We would like for you to answer some questions that will help us understand children's well being. After you have come to know your children well, we will ask you to fill out questionnaires about the children. We will only ask you to answer questions about the children whose caregivers have given their consent. The questionnaires will take about 15-25 minutes to complete per child. We will explain the questions and how to complete the questionnaires.

We will also interview the children/ Each child (whose family has agreed and signed consent? will sit down with me or one of my graduate students in a public place during the day at camp and be interviewed one at a time. The children will answer a list of questions, and we will write down the answers. This will take about 30-45 minutes. Then, the child will go back to camp activities. It has been our experience that most children enjoy being interviewed at camp.

What are we trying to learn?

This study is to help us understand normal healthy children who have experienced their mothers going to jail or prison. We are interested this year in how children think about events to which they might have emotional or moral reactions. We will ask the children questions about their emotional regulation, life stressors, and how they behave at camp. In addition, we will give them a "thinking" task that looks at how each child is able to inhibit or stop one response and say or do something else. For example, the word "green" will be presented in blue ink, and the child is supposed to say "blue." Besides talking to the children, we want to learn how adults who have worked with the children

see them. We will therefore ask you as mentors to complete questionnaires only on the children you have mentored and gotten to know well, not all the children in your cabin or day group. For each child, you are asked to fill out 3 questionnaires - one on emotional regulation, and two on types of behaviors. We will not ask any questions about you, the mentor.

Here is some information you need to know.

If you prefer not to take part, we will respect that. If you choose to participate, **your answers will be confidential, which means private.** No names will be attached to the answers. We believe that this research is safe and that there is little to no risk in taking part. You are free to quit even after starting. You and the children will not receive any direct benefits from the research. It may help us better understand other children.

If you have questions, please contact me, Dr. Barbara Myers at (804) 828-6752 (office) or by e-mail (bmyers@vcu.edu) or in person at the camp. I will be glad to talk with you and answer your questions. If I am not at my desk when you call, please leave your name and number and I will return your call. If you have general questions to ask about your rights as a research participants, or if you feel that you have been injured by participating in this research project, we have a special office at VCU called the Office of Research Subjects Protection (804-828-0868). You may keep this letter, so if you think of questions now or later, you can contact me or the Office of Research Subjects Protection. Please keep a copy of the signed consent for your records.

Please sign and date the consent form if you would like to take part. Please also ask a witness --another adult -- to sign. We will collect the consent form and keep it in a safe and private place. Thank you very much.

Yours truly,

Barbara J. Myers, Ph. D.
Assoc. Professor of Psychology
Virginia Commonwealth University

Camp Study Mentor Consent Form

Mentor's name (please print)

_____ *I consent to take part in the research project described in this letter.*

Your Signature

Date

Witness signature

Date

P.I.'s signature

Date

Appendix L

Child Assent Form

I agree to help out with this research project. I know that I will be asked questions about my feelings and beliefs. These are questions with no right or wrong answers, so it's not a test. It's a chance for me to say what I think and feel. My answers will be confidential, which means that nobody else will get to see my answers. My name will not even be written on the answer sheet -- only a code number. If I do not want to answer a question, I can say "pass." If I decide in the middle that I want to stop, I can do so. If I don't understand something, I can ask questions to make it clear. I would like to take part in this project.

Child's signature

Date

Witness signature

Date

P.I.'s signature

Date