

Self-Regulation Strategies Used by Preschool Boys:
A Multiple Case Study

by

Lisa Joy Blodgett
B.A./B.Ed., University of Lethbridge, 1997

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A Descriptive Case Study

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Abstract

This multiple case study examined the self-regulation strategies used by 6 preschool-aged boys. The participants in this study were selected based on criterion of an undercontrolled behavior style. The researcher gained this description of the children via parental perceptions and naturalistic videotaped observations. Using these videotaped observations of natural play in the preschool environment, the researcher gained insights into the self-regulatory behaviors of these boys within their solitary play, and their peer and adult interactions. The across-case patterns revealed that the boys' behavior included a large proportion of prosocial and constructive coping responses. The data also suggested that the boys demonstrated deficits in their language strategies, especially within distressing or challenging peer situations where their negative emotion seemed to disrupt their use of skilled responses. Similarly, the boys were only observed using aggressive and negatively emotional responses subsequent to their failed attempts at peer interactions. The findings of this study can assist educators and parents in providing early education practices and play experiences that promote the development of socially competent language, emotional regulation, and peer initiation strategies.

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Chapter 1: Introduction

Overview

According to Mustard and Picherack's (2002) provincial report on early childhood development, almost 25% of young children throughout British Columbia are identified at risk. Children in this report were identified at risk based on prenatal and perinatal care. Quality early childhood care experiences are paramount to providing a foundation for these children's successful development. There is a growing need to improve the long term social, emotional and academic outcomes of young children. Mustard and Picherack recognize that early childhood education can support children and families. In order to provide this support, caregivers must be equipped with an understanding of children's social development, and preschool children's self-regulatory practices.

With a large number of 4-to 5-year-old children attending preschools, an opportunity exists for educators to help children develop positive social and emotional skills. Zahn-Waxler et al. (1994) suggest that disruptive behavior and difficulties with social competence at this age may reflect more than a developmental stage; these behaviors may reflect difficulties with interpersonal and regulatory skills. With an improved awareness of the self-regulatory strategies used by these children, educators and parents would be equipped with preventative knowledge to enable identification of problems and to provide instruction according to children's needs. While caregivers face the developmental challenges of preschool-aged children, they will be supported by a better understanding of children's behavior.

As a teacher and school counselor, I am aware of the relationship between a child's behavioral regulation, and his or her social acceptance and success in school. By early adolescence, children who are characteristically overactive, disruptive and inattentive are often

dealing with academic problems. In addition, if these children are impulsive and defiant, they are faced with removal from the classroom and frequent trips to the principal's office for disciplinary reasons. Finally, the child may also be aggressive or negatively emotional, which hinders his or her social relationships with peers, teachers and parents. In the late elementary and middle school years, educators must address these social and behavioral difficulties before focusing on academic success.

In my role of school counsellor and behaviour support teacher at an elementary school, I have observed that early indicators of emotional and behavioral regulatory problems are present during the primary school years. While observing younger children interacting on the playground, children who are identified as needing behavioral support seemed to repeatedly employ ineffective regulatory strategies in conflict situations, and show poor initiation skills in peer groups.

In light of these disheartening developmental trajectories, I am motivated to better understand the development of these behavioral patterns beginning with children's early school and peer experiences. Beyond an awareness that inappropriate behavior leads to relationship problems, I believe that educators and parents need to better understand the repertoire of strategies that are necessary to initiate and maintain positive social interactions.

During my Masters program in Special Education, I have worked as a research assistant on a large qualitative study of early childhood self-regulation that included 150 preschool-aged children (Blodgett, Boyer, & Turk, 2005; Boyer, Blodgett, & Turk, 2004; Boyer, 2005; Boyer, Blodgett & Turk, 2007; Boyer, in press). As a part of this sizeable project, I was engaged in conducting parent and educator interviews and videotaping children's play in the preschool environment. During close daily observation of the children's play, I recognized noteworthy

patterns of self-regulatory behavior across 3, 4 and 5-year-old children, as well as across genders. In reviewing the research literature, I would suggest that developmental research is lacking in its examination and description of these behaviors. Also, during my formal and informal conversations with the caregivers of preschool children, I was intrigued by their awareness of young children's behavior as well as by their questions concerning children's dysregulated behaviors. It seemed that this field of study offered opportunities to provide meaningful knowledge to caregivers about their children's social and emotional development.

It is important to study self-regulation within preschoolers who display an undercontrolled behavioral style (such as aggressive, overly emotional, overactive, disruptive, impulsive behavior), as this early dysregulated behavior foreshadows later problems with delinquency and externalizing or internalizing behaviors (Caspi & Silva, 1995; Eisenberg, Fabes, Guthrie, & Reiser, 2000; Eisenberg et al., 2003). In their transition to elementary school, children who display this undercontrolled behavior also frequently face obstacles with peer relationships and classroom expectations (Ladd, 1990). Research indicates that temperamental characteristics related to emotionality and inhibition show relative stability across childhood (Goldsmith et al., 1987), along with the behavioral patterns associated with this undercontrolled behavioral style (Caspi & Silva, 1995). In addition, overactive and inattentive preschoolers have been described as "being at high risk of meeting diagnostic criteria for disruptive disorders in school age" (Hughes, White, Sharpen, & Dunn, 2000, p. 169). Many studies of children's regulatory behavior have found that boys exhibit less inhibitory control and more impulsivity, in comparison to girls (Kochanska, Murray, Jacques, Koenig, & Vandergeest, 1996; Kochanska, Murray, & Harlan, 2000). In this study, the researcher will select a sample of preschool boys who exhibit features of

an undercontrolled behavioral style in order to explore these cases, with more depth and breadth, their social responses and self-regulatory skills within natural preschool play experiences.

The preschool child's social world is complex, full of emotional and physical challenges. During the course of a typical morning at preschool, the child will likely need to enter a play group, initiate and maintain dialogue, coordinate play through roles and turn-taking, meet external demands, deal with issues of sharing materials, and handle provocation and other interpersonal conflicts. Therefore, within social interactions "peers determine opportunities for self-regulation and present some of the regulatory challenges children need to negotiate" (Grolnick & Farkas, 2002, p. 106). Many studies have explored how young children think and what they do, but direct observational research of these disruptive, impulsive and undercontrolled preschoolers is "practically nonexistent" (Hughes et al., 2000, p. 169). The child's ability to regulate and the child's selection of social responses are linked to the emotional and social factors inherent within a situation (Fabes et al., 1999). Consequently, researchers have identified the need to investigate the "response profiles" used by young children within naturally-occurring situations (Wood & Gross, 2002, p. 16). This research will use observations of natural play in order to explore and define the self-regulatory strategies used by preschool boys. The boys will be selected as cases for study based on their display of features of an undercontrolled behavioral style, derived from parent descriptions and researcher observations. With the intention of moving away from using merely formal observations and adult reports of behavior, this study's observations will capture the boys' holistic behaviors within a natural setting. With a qualitative approach, this work will examine and support the theoretical propositions of Eisenberg's (1993, 1999, 2000, 2003) and Kopp's (1982, 1989) research on

social behavior and self-regulation which have been investigated through other research methodologies.

A review of relevant literature confirms that preschoolers' self-regulation is an important area of development that contributes to our understanding of the social behaviors of young children, and to the prevention of later negative social outcomes. With the purpose of informing both research and practice, this descriptive study of preschoolers' self-regulatory strategies will contribute to a body of knowledge concerning children's characteristics, development and social behaviors that are linked to positive social outcomes. Understanding more about children's self-regulation offers great potential for effective intervention and prevention within early childhood education. Kopp (1989) explains that understanding children's regulation strategies "provides a perspective on the increasing interrelatedness of action, motivational and cognitive systems. And, by more fully recognizing the complexity of early behavior, we move to more sophisticated design and measurement strategies" (p. 344).

This chapter presents the research problem and the purpose of the study, creating a framework for the further discussion of theory and methodology within subsequent chapters. This chapter also includes definitions of central terms which are integral to understanding the direction of this study. As a part of a larger qualitative study of preschool children's self-regulation (Boyer, 2004), this research has a general focus and delimitations that are directed by the larger investigation and these are also presented within this chapter.

Statement of the Problem

The problem of the study is expressed by the following question:

- 1) How do boys, ages 4-6, who exhibit undercontrolled behaviors, employ self-regulation strategies during natural play experiences within the preschool environment?

Purpose of the Study

The general purpose of this descriptive study is to examine self-regulation strategies of preschool boys who exhibit features of an undercontrolled behavioral style. These children's behavior is described or observed as being synonymous with overactive, defiant, disruptive, inattentive, aggressive, impulsive, or negatively emotional behavior. Videotaped observations of natural play in the preschool environment are used to identify these behavioral characteristics. Transcripts from parents' interview questions are also used to confirm these temperamental characteristics. A specific purpose of this study is to describe the repertoire of self-regulatory skills of these 4 to 6-year old boys, and to observe their problem-solving responses to challenging or distressing situations. This description of behavior will show the children's social skills deficits and strengths, which can help caregivers to guide children's early social and emotional development and can increase parents and educators' understanding of children's self-regulatory strategies. This study will contribute to current knowledge on play, social competence and peer rejection, and will contribute to more informed early intervention and education practices to assist preschool and elementary children who are struggling with social play and peer acceptance.

Definitions of Terms

Aggression:

Calkins, Gill, Johnson and Smith (1999) describe several types of aggression:

Hostile aggression (the target child has physically harmed another child for no particular purpose other than to express some negative emotion), instrumental aggression (the target child has physically harmed another child in the service of obtaining a desired object or

goal), verbal aggression (insults, taunts), and physically stopping the action(s) of the other child. (p. 319)

Defiance:

“noncompliance by overt refusal, with angry, defiant or negative affect; includes temper tantrums, whining” (Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987, p.801).

Dysregulation:

“individuals who experience intense levels of negative emotionality may become overwhelmed and subsequently behave more impulsively, negatively, and less constructively” (Fabes et al., 1999, p. 432)

As observed within the preschool environments in the present study, the children’s dysregulated behaviors were noted as considerably uncommon responses among the children, such as hitting peers within sharing situations. Parents also described their children’s dysregulated behavior as a child’s intensifying anger in response to an adult’s demand, such as when a child will “throw himself on the floor, kick his legs and whine...” (Parent interview, Child 90). Another parent explained that her child’s response to adult demands is that “he’ll get really loud so he shuts me out” or “he’ll laugh at me, throw things at me, spit at me” (Parent interview, Child 36). Other examples of dysregulated emotion can be observed in a child’s response to a frustrating situation, such as the child’s tendency to “give up quite easily” (Parent interview, Child 92) or to cry, throw toys or hit peers. This intense and hasty display of emotion is characteristic of a child who exhibits dysregulated behavior.

Emotion regulation:

the process of initiating, maintaining, modulating or changing the occurrence, intensity, or duration of internal feeling states, emotion-related psychological processes, and the behavioral concomitants of emotion (e.g., facial expressions) in the service of accomplishing goals. (Eisenberg, Cumberland, Spinrad, Fabes, Shepard, Reiser, et al., 2001, p. 1114)

Non-compliance:

“ignoring or disobeying authority figure” (Zahn-Waxler et al., 1994, p.105).

Kuczynski & Kochanska (1990) describe a differentiated model of four forms of children’s noncompliance: passive noncompliance, direct defiance, simple refusal and negotiation.

Self-regulation:

the ability to comply with a request, to initiate and cease activities according to situational demands, to modulate the intensity, frequency, and duration of verbal and motor acts in social and educational settings, to postpone acting upon a desired object or goal, and to generate socially approved behavior in the absence of external monitors.

(Kopp, 1982, p. 199-200)

Social competence:

“frequently defined as a complex set of behavioral and cognitive skills used to direct and facilitate social behavior...conceptually and empirically linked to the ability to regulate behavior and emotions” (Murphy & Eisenberg, 1996, p. 105).

Temperament:

“constitutionally based individual differences in reactivity and self-regulation” (Rothbart, Ahadi, & Hershey, 1994, p. 22)

Rothbart, Ahadi et al. define reactivity as “arousability of affect, motor activity, and related responses, assessed by threshold, latency, intensity, time to peak intensity and recovery time of the reaction” (1994, p. 22). These authors define self-regulation as “processes such as attention, approach-withdrawal, behavioral inhibition, and self-soothing, serving to modulate reactivity” (p. 22).

Undercontrol:

Defined by very high scores on Lack of Control... this group is distinguished from the remaining groups by high scores on a constellation of items that capture both irritability and distractibility... these children had difficulty sitting still, were rough and uncontrolled in their behavior, and labile in their emotional responses. (Caspi & Silva, 1995, p. 489)

“These children are active, have high energy levels (‘vital, energetic, lively’), express desires immediately (‘unable to delay gratification’), and have difficulty maintaining a prolonged focus on a single activity” (Hart, 1997, p. 200).

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In observing preschool-aged children, teachers and parents (and indeed, researchers) would characterize undercontrolled behavior as a child’s extremely agitated and active play behavior, a

child's inability or unwillingness to follow rules and routines, and a child's frequent display of heightened joy, sadness or anger. It is especially important to recognize that the child's undercontrolled behaviors are atypical if compared to same-aged peers. In the present study, one parent described her child's behavioral style as typically "extremely enthusiastic" and "extremely upset" (Parent interview, Child 36), and another parent explained that her child "needs to be engaged... or he is just off the wall" (Parent interview, Child 77). In the present study, the researcher witnessed examples of the participants' undercontrolled behaviors, such as rule-breaking and disruptive responses during transition times, active noncompliance of adult demands, aggression or over-excited play within peer interactions, very quick mood changes- from happiness to intense anger, extremely short episodes of play with any one peer or activity, and/ or commonly interacting with peers using a loud voice or excessive laughter.

Delimitations of the study

The following limitations will be imposed by the researcher:

- 1) The study will be limited to preschool boys, ages 4 to 6-years.
- 2) The study sample will be limited to boys who exhibit undercontrolled behaviors, displayed as overactivity, defiance, disruptiveness, inattention, aggression, impulsivity, and negative emotionality, as seen in videotaped 30 minute observations and as described by parents in interviews.
- 3) The study will be limited to the following variables:
 - a. Strategies of self-regulation used by 4 to 6-year-old boys during initiating, modulating and ceasing behaviours.
 - b. Preschool play experiences, which may include challenging, distressing or conflict situations involving the child, and possibly adults and other children.

- 4) The study will be limited to data collected from a larger self-regulation study of preschool children (Boyer, 2004). This data was collected between October, 2003 and June, 2004 from participating preschools in a mid-sized city on the Canadian Westcoast.
- 5) All variables, conditions or populations not so specified in this study will be considered beyond the scope of this investigation.

Assumptions

The following assumptions were expected to prevail throughout this study:

- 1) The graduate research assistants were able to capture natural play experiences in the preschool videotaped observations.
- 2) The parent participants were honest in their responses to the relevant questions within the parent interviews, and their answers were representative of their child's behaviors.
- 3) Behaviors recorded in the videotaped sessions at the preschool were similar in quality and characteristic of these boys.
- 4) Boys, ages 4 to 6-years, are developmentally autonomous, able to understand others' perspectives and can cognitively choose to regulate their behaviors in response to external stimulus, opportunities or demands (Kopp, 1982).
- 5) Boys who exhibit characteristics of an undercontrolled temperament are at risk for later peer rejection and long term negative outcomes because of their social skills deficits (Campbell, 2002; Coie, Dodge, & Kupersmidt, 1990; Newcomb & Bagwell, 1996).

Summary

The compelling nature of this research study is apparent with regard to the developmental needs of young children, their families and their caregivers. The problem and purpose of this study involve young children's self-regulatory behavior as it relates to their social and emotional

skills. Research can support early childhood educators and parents by providing a more complete understanding of young children's social behaviors, particularly for children who exhibit dysregulated behavior. To set a context for the study, the assumptions and delimitations of the research were outlined. In addition, a brief discussion introduced the significance of exploring and describing the self-regulatory strategies used by undercontrolled, preschool-aged boys. To support this research, the following chapter will provide a comprehensive review of the current understanding of the early development of self-regulation and temperament, and the relationship of these to social behavior. In addition, the review of literature will include a discussion of the implications of this research along with suggestions for further study. These future directions validate the importance of the present study and assist in the selection of a qualitative approach for this research. Chapter 1 also briefly conveyed the importance of observing children's social behavior within their natural play contexts and these aspects of the current study will be examined in Chapter 3, with a description of the case study's procedures for sampling, data collection and data analysis.

Chapter 2: Review of the Literature

Overview

Self-regulation is a core developmental goal of the preschool years (Kochanska, Murray & Harlan, 2000; Kopp, 1982). The child's ability to follow rules and regulate emotions at home, at school, and among peers depends on the process of internalizing rules, and is partly determined by the child's constitutional inhibitory and attentional control. Although the self-regulation research in this age group is limited, temperamental dimensions and developing cognitive abilities have been associated with children's social competence. The lessons learned from this field have implications for children's later social and academic outcomes. Self-regulation research in young children offers an opportunity to identify these children's behavioral skills and deficits in order to develop appropriate early childhood intervention and prevention programs.

This review will outline the current understanding of self-regulation of young children and will present the areas in need of more detailed description and investigation. In considering preschoolers' self-regulation, this review will describe the social, cognitive and behavioral growth which is at the core of preschool children's development. To provide a basis for understanding the research literature, a complete list of central terms and their definitions have been included in Appendix A. This research is guided by a comprehensive review of the theories of self-regulation and temperament, and their development during early childhood. Next, the dimensions of temperament are explained with an emphasis on their connection to self-regulation and children's social behavior. As a component of both self-regulation and temperament, emotionality and its regulation play a large role in this review. Finally, preschool children's play and other peer interactions are examined with regard to children's display of social behavior and the development of self-regulation. The framework of this review was structured to demonstrate

the associations between self-regulation, temperament and social behavior in undercontrolled preschool-aged boys. The purpose of making these connections lies within the description of behaviors associated with undercontrolled personality styles. An improved explanation of young children's repertoires of self-regulatory strategies may provide a better understanding of the needs of undercontrolled children.

Developmental Issues in Preschoolers

During the preschool years, between ages 3 to 5, children experience significant growth in their cognitive and social skills. They experience the development of more complex reasoning and language skills, the emergence of self-awareness, perspective taking and empathy, the ability to balance their own needs with the needs of others, an increased understanding of the physical world, the cognitive capacity for abstract and symbolic representation of events, an increased capacity for cooperative play, an awareness of social conventions, and an improvement in self-control and emotion regulation (Campbell, 2002; Dunn, 1988; Howes, 1996; Kopp, 1982). This social development is related to the child's biological predispositions in activity level, sociability, attention control, affect regulation, and reactivity (Campbell, 2002).

The child's developing memory is linked to neurological development and increases in language skills and symbolic understanding (Campbell, 2002). Although preschoolers are able to more accurately recall personal experiences, their memory is still very concrete and tied to their own direct experiences. However, 3-year-old children are increasingly able to communicate about their emotions and relationships, and can speak more directly about environmental events and other abstract issues within their experiences (Winsler, Diaz, Atencio, McCarthy, & Adams-Chabay, 2000). The development in language ability allows the child to make sense out of the environment and interact with others. Consequently, language delays have been found to

negatively influence adult and peer relationships, and have detrimental effects on the child's participation in social play and other peer interactions (Campbell, 2002).

Through these experiences and social interactions, the development of memory and language is paralleled by a growth in self-awareness (Kopp, 1982). At this time, the preschool age child has begun to internalize adult standards and show an understanding of appropriateness and socially acceptable behavior (Kochanska, Coy, & Murray, 2001). Children's self-awareness is initially evident in their increased assertion of autonomy, an expression of emotional development which is usually accompanied by irritability, difficult and oppositional behavior, tantrums and crying (Campbell, 2002). Following these "terrible two's", the 3-year-old has a growing interest in the environment, accompanied by the early stages of social comparison and an awareness of the thoughts and feelings of others. Preschoolers also increasingly exhibit self-evaluative emotions (such as pride and shame) in response to their own behaviors.

As the child begins to understand his or her own feelings and the causes of those feelings, the child becomes more adept at reading social cues and others' facial expressions of emotion (Dunn, 1998). The child's understanding of the "theory of mind", or an awareness of others' internal states, also corresponds to growth in cognitive capacity for memory, attention and abstraction, across ages 2 to 3 (Thompson, 1998). However, 4-year-olds perform much better than 3-year-olds on "theory of mind" tasks, demonstrating their understanding of others' perspectives, experiences, knowledge, and false beliefs (Campbell, 2002). This social understanding is essential to children's use of nonaggressive goals and self-regulatory strategies during cooperative and pretend play (e.g., taking turns, playing roles, sharing) (Krasnor & Rubin, 1983).

The development of self-regulation in the preschool years corresponds with the child's increased memory and language skills and a growth in self-awareness and perspective taking (Kopp, 1982). Through an internal awareness and the internalization of social rules, the preschool child is increasingly able to comply with adult expectations, monitor their own behavior, and engage in positive cooperative peer interactions.

Self-Regulation Research and Young Children

Overview of Self-Regulation Theory

Researchers have examined many elements of self-regulation, including compliance, conscience, impulsivity, internalization, inhibitory control, and delay of gratification. These studies suggest that self-regulation is shaped by biological and social aspects, and continues to develop through childhood. During this development, the child becomes more able to comply with caregiver demands, and control attention, emotion and behavior (Bronson, 2000).

Kochanska et al. (2001) explain this process as a movement from *situational* to *committed* compliance, whereas Kopp (1982) discusses the development through phases of *self-control* to *self-regulation*. Kopp discusses self-regulation as relating to affective-motivational systems and verbal communication. Kopp also suggests that self-regulation is mediated by internal cognitive processes and therefore is also influenced by both maturation and experience. Grolnick and Farkas (2002) speak of two central theories of the development of self-regulation. The social-cognitive theory of self-regulation proposes that children are actively involved in learning and become less dependent on other agents to manage or modulate their behavior (see also Kochanska, Murray, Jacques, Koenig, & Vandegest, 1996). The sociocultural theorists suggest that self-regulation develops through social interactions, gradually enabling the child to plan and

monitor behavior to attain personal or situational goals (Campbell, 1997; Krasnor & Rubin, 1983; Newcomb & Bagwell, 1995).

The Development of Self-Regulation

As the child's cognitive capacity progresses, the ability to manage emotions and behavior develops as a continuum throughout childhood. Kopp (1982) is very specific about identifying this continuum as occurring within *phases* of development, as there are no boundaries but "gradual transitions" (p. 201). Furthermore, Kopp suggests that this process begins in infancy with reflexive or neurophysiological responses, and then progresses through the phases of sensorimotor modulation, control, self-control and self-regulation. Kopp explains that development of control through to self-regulation is marked by changes in cognitive ability and the eventual shift from external demands to internal control. At age 2, the child has knowledge of social rules but is limited in the cognitive capacity for delay of gratification and flexibility. Behaviorally, a significant difference is evident when the child passively knows the expectations and when the child can actively use this knowledge in his or her responses (Bullock & Lutkenhaus, 1988). As well, at this time, language is increasingly functional and social. Representational thinking and a sense of self are also emerging, enabling the child to understand the perspectives of others. By age 3, an improved memory helps the child recall caregiver expectations. The 3-year-old child has developed "flexibility of control processes that meet changing situational demands" (Kochanska et al., 2001, p. 1091) and can modulate behavior to produce an outcome or change behavior to make corrections (Bullock & Lutkenhaus, 1988).

Finally, by age 4, the child is beginning to internally monitor and modify behavior based on their understanding of social rules. The child's self-regulation involves planning, growth in conscience development, increased impulse control, and a greater understanding of socially

acceptable behavior (Campbell, 2002). According to Grolnick and Farkas (2002), *compliance* occurs when the child follows a directive or rule and *self-regulation* occurs when the child chooses an appropriate behavior without being explicitly asked. At age 4, self-regulation is evident in children's overt behavior, as they will more frequently apologize for misbehavior, show self-evaluative emotions (e.g., shame and guilt), and are able to recognize others' transgressions. At this time, social learning from caregivers and peers facilitates the child's growing self regulation (Kochanska, Murray & Harlan, 2000). Both Kopp (1982) and Kochanska et al. (2001) discuss an interactional process of development involving parental characteristics and demands, situational rules and the child's self-regulatory skills. Among these parental factors influencing a child's developing self-regulation, Grolnick and Farkas (2002) also mention parental involvement, caregiver support of the child's autonomy, and the structure of the environment.

Compliance

In a longitudinal study of the development of self-regulation from toddlerhood to the preschool years, Kochanska et al. (2001) observed children's behavior in "Do" and "Don't" contexts. These authors explain that "children's behavior in Do contexts involves sustaining an unpleasant, tedious activity, whereas their behavior in Don't contexts involves suppressing a prohibited but pleasant activity" (p.1092). Their findings revealed that, when children were required to self-regulate their own behavior, it was harder for them to sustain activity than to suppress it. The authors report that self-regulatory development shows the greatest growth for internalized regulation (or committed compliance) within the Don't context, and that this dimension is more influenced by the child's individual temperamental inhibitory systems. Children who demonstrate problem behaviors such as impulsivity and disruptiveness struggle

with refraining and suppressing activity and these characteristics are linked to their individual temperament. Kochanska et al. suggest that future research with this age group must explore children's behavior in other Do and Don't contexts, and should address other dimensions of temperament such as approach and emotionality.

Inhibition

Reed, Pien and Rothbart (1984) explain that 4-year-olds have the cognitive and attentional abilities to initiate, modulate and cease a response, to delay gratification, and to use verbalizations to inhibit a response. The child's abilities to sustain attention and delay responses are voluntary processes. In contrast, internal inhibition is the "involuntary reaction to novel or intense stimuli" including fear or distress, approach or withdrawal, impulsivity and emotionality (Reed et al., 1984, p.132). With the purpose of identifying the inhibitory mechanisms used by 4-year-olds, Reed et al. examined the voluntary and internal inhibition of 40 children. In this study, separate inhibitory response tasks were used to independently measure verbal regulation, motor inhibition and internal inhibition. These authors found a correlation between the voluntary and internal dimensions of inhibition, $r = .62$ ($p < .01$), showing the link between temperamental dimensions and voluntary control. Their results also showed effects of age which support the proposition that internal inhibition develops earliest, preceding verbal regulation.

Kochanska et al.'s (1996) longitudinal research suggests that the relationship between internal and voluntary inhibitory systems plays a role in socialization. According to their laboratory observations of preschoolers, the child's scores of temperamental inhibition, measured at age 2 to 3-years, moderated the child's internalization of rules and display of voluntary control at age 4 to 5-years. Furthermore, Kochanska et al. explain that, on the whole, inhibitory control and impulsivity show a general stability across the toddler and preschool years. These findings of

stability are important for further investigations which must explore the control strategies and mechanisms that are relevant to socialization processes and children's later social behavior.

Emotional and Behavioral Regulation

Kochanska et al. (2000) suggest that the "ability to inhibit effortfully a prepotent behavioral or emotional response or to perform a modulated or different response is required in many developmental processes, such as self-regulation, expression of emotions and socialization" (p.220). Kopp (1989) suggests that emotion regulation is, in fact, central to the child's self-regulation as the child must learn to respond to distressing situations with controlled negative emotion in accordance with social expectations. It is through the experiences of frustration in early childhood that emotion regulation is learned (Stifter et al., 1999). Kopp explains that caregivers guide and support the child's developing emotional regulation by setting social standards and teaching regulatory strategies. Emotion regulation likely precedes compliance, as negative affect and reactivity can interfere with young children's capacity to set aside their own desires in order to comply with external demands (Stifter et al., 1999).

According to Kopp (1989) emotion regulation relates to an individual's behavioral scheme and pattern of reactivity, where different mechanisms are used to modulate emotional responses. Rothbart, Derryberry and Posner (1994) discuss the connection between emotion and regulation within neural systems, but they do not identify the regulatory behaviors that serve to modulate emotional arousal. Kopp suggests that the processes involve the basic cognitive associations related to emotional cause and effect, but also include more complex processes of planning and self-monitoring within different contexts and interactions. This "planful" emotional regulation emerges slowly corresponding with the child's growing cognitive capacities for representation and flexibility (Kopp, 1989, p. 345). The growth in language skills is also fundamental to this

process as the child begins to communicate emotions, use self-assertion, and talk about causes and expectations within their social interactions. After age 2, children seek less physical comfort in distressing situations (Gilliom, Shaw, Beck, Schonberg & Lukon, 2002), and less frequently use transitional objects such as blankets and toys to modulate their emotions (Kopp, 1989). By age 3, children are beginning to “comfort themselves, manage their anxieties, frustrations, and distresses without the help of caregivers and peers” (Kopp, 1989, p. 349). Preschoolers are increasingly able to meet expectations for emotion regulation because they have developed self-awareness and the necessary cognitive abilities, but Kopp also emphasizes that these children are motivated to regulate their negative emotions because of their desire for relatedness with peers and caregivers. As such, peer relations may be a “powerful context” for learning emotional regulation (Kopp, 1989, p. 349).

Socially competent responding is not only related to the child’s individual differences in regulation but also to situational factors, especially in emotionally-charged interactions (Fabes et al., 1999). Calkins, Gill, Johnson and Smith (1999) examined social competence and regulatory strategies in 2 year-old children. These authors suggested that young children exhibit four behaviors which reflect regulation strategies: aggression/ venting, distraction, self-orienting and attention-orienting to focal object. When young children’s social skills are emerging, these authors suggest that the relation between regulatory strategies and social competence is strongest when predicting aggressive behavior or conflict with peers, especially in situations where children are experiencing negative affect. Stifter et al.’s (1999) research suggests that, at 30 months of age, children use different regulatory strategies depending on the emotional quality of the situation. In a longitudinal study, Gilliom et al. (2002) investigated the regulation strategies used by boys from low income families. The authors assessed the boys’ anger responses in a

laboratory frustration task at age 3- and-a-half, and subsequently gathered teacher ratings of the children's self-control at age 6. Although this study was limited by its low income population sample, the results have implications for future research using samples with a wider range of demographics. For example, the authors found that 3-year-old children who shifted their attention away from the frustration task displayed less anger in the situation, and those same children at age 6 were rated as exhibiting more cooperative and less externalizing behavior. Children who gathered information about the frustrating situation showed a decrease in their anger, whereas children who focused their attention on the frustration displayed increased anger. As such, the authors suggest that "emotions can disrupt or enhance skillful responding to environmental challenge" (Gilliom et al., 2002, p.222). It is possible that there are long-term negative implications for children who have limited emotional regulation strategies. As Gilliom et al. report, those children who had a greater number of strategies in their repertoire were better adjusted at school entry according to teachers' and parents' ratings. Further research must be done to describe the response "profiles" of children who are having problems with regulation (Wood & Gross, 2002, p. 16), especially in terms of the strategies used by children in a variety of emotional situations in natural contexts. Researchers must also investigate the sequences of strategies that children employ, and the effectiveness of those patterns (Gilliom et al., 2002).

Self-Regulatory Strategies

Stifter et al. (1999) discuss the importance of assessing early regulatory skills, as they "set the stage for developing behavioral control" (p. 28). Mischel, Shoda and Rodriguez (1989) expound on the idea that there are advantages, beginning in early childhood, if a child has the capacity to reduce frustration and persist in his or her efforts. In their study of 6 to 12-year-old boys at a summer residential treatment facility for children with behavior problems, they found that boys

who had stronger self-regulatory skills, such as delay of gratification, were rated as less aggressive in observations by adult supervisors. Wood and Gross (2002) studied 75 children in Grades 3 and 4 who were grouped based on ratings of aggressive behavior and rejected peer status, as assessed by peers' social status nominations and teachers' social behavior ratings. Their investigation revealed that rejected-aggressive children had "limited repertoires" of social responses for conflict situations and that, in behavioral response tasks, these children generated and selected significantly more hostile responses than the average group (p.16). Wood and Gross propose that the selection of aggressive strategies is due to a problem of cognitive access to alternate responses.

Attention is a central component of self-regulation (Ahadi & Rothbart, 1994), and the individual's temperamental capacity for shifting or focusing attention has been found to moderate emotional and behavioral reactivity (Reed et al., 1984; Gilliom et al., 2002). Developmentally, Mischel and Ebbesen (1970) found that 3 to 5-year-old children are able to use distraction as a self-regulatory strategy in a frustrating delay situation in a laboratory setting. However, by age 6, these distraction tactics become more task-oriented and effective (Mischel, & Mischel, 1983). Children who are more successful with these strategies are likely, 10 years later, to be more socially competent, verbally fluent, attentive, planful, optimally controlled, and more able to pursue goals, to resist temptation, to tolerate frustration and cope with stress (Mischel et al., 1989). The findings from this longitudinal study have strong implications for identifying and teaching self-regulatory strategies in early childhood to reduce later risks.

Kuczynski and Kochanska (1990) stress the importance of studying the elements which comprise children's competence and their research examines the developmental changes in children's compliance strategies. In their longitudinal study of children between toddlerhood and

age 5, the researchers reported that the use of direct defiance and passive noncompliance decreased with age, but negotiation which is a more skillful noncompliance strategy, increased. In contrast, the use of negotiation strategies was not significantly linked to later perceptions of problem behaviors. In this observational work, the authors utilized episodic coding of mother-child interactions within a naturalistic apartment setting. Although immediate compliance to parental demands was the most frequent response for all children, the researchers found that 5-year-old children, who were perceived as having more problematic behavior, had used more unskilled noncompliance at the earlier assessment. To enhance our understanding of preschoolers' social behavior, further research must explore the development of noncompliance strategies used by children within peer interactions.

In another longitudinal study designed to uncover the developmental patterns of self-regulatory strategies, Winsler et al. (2000) studied 3 and 4-year-old children's use of speech during structured, individual problem-solving tasks. In their sample of 72 preschoolers with behavior problems, they found that children "at risk" used more overt private speech in challenging tasks. As such, they propose that preschoolers with language problems are at risk for later behavior problems because they lack the ability to internalize control of their own behavior. They emphasize that speech is a "primary mechanism" in the development of self regulation (Winsler et al., 2000, p. 876). This research exemplifies the potential significance for a deeper understanding of preschoolers' differential use of self-regulatory strategies.

Gender Differences

Beyond the developmental differences evident throughout childhood, researchers have reported gender effects in studies of self-regulation and social behavior. Kochanska et al. (2001) explain that their findings support a "large body of evidence that females' ability or willingness

to self-regulate exceeds that of males” (p.1106). More specifically, their results show that boys and girls show no differences in situational compliance, but throughout the 14 to 45 month age range, boys displayed lower committed compliance when they were required to refrain or suppress an activity (*Don't* contexts). During Effortful Control tasks, Kochanska et al. (2000) found stable differences in performance between boys and girls, where boys consistently obtained significantly lower inhibitory scores. They report discrepancies in boys' and girls' scores across behavioral, social and cognitive inhibition tasks. In a 1996 study of children's inhibition, Kochanska et al. found that gender effects were present in their behavioral measures and mothers' reports. Overall, boys were rated as lower in inhibitory control and higher in impulsivity.

Within Gunnar, Sebanc, Tout, Donzella, and van Dulmen's (2003) study of temperament and rejection, they report that teachers described boys as “more surgent, more aggressive, and poorer in effortful control than girls” (p.351). During an investigation of emotional intensity and coping strategies, Eisenberg et al. (1993) explain that undercontrolled, emotionally reactive boys' had lower social competence ratings by teachers and observers ($M = -.959$) than other boys ($M = -.063$). However, undercontrolled girls received competence ratings that were not significantly different from controlled girls ($M's = .401$ and $.448$). When the authors extended this analysis to teacher's sociometric ratings of popularity, peer status was also related to boys' regulation skills and emotionality. For both boys and girls, emotional reactivity was negatively related to instrumental coping and positively related to aggression although girls scored higher on constructive coping ratings and lower on emotional reactivity than boys. In reference to teacher reports used in their 2003 study, Eisenberg et al. once again reported gender differences, as girls were rated higher “on effortful control, ego control, social status, popularity and socially

appropriate behavior and lower on negative emotionality” (p. 766). Overall, a strong case is presented where boys’ higher levels of impulsivity and lack of control may contribute to their display of more disruptive and aggressive behavior. Eisenberg et al. (1993) suggest that girls may be socialized to engage in constructive coping “regardless of temperamental predispositions” (p. 1434).

Temperament in Childhood

Theoretical Overview of Temperament

Theorists and researchers are vigorously exploring the dimensions of temperament in infancy and childhood, and are exploring how these dimensions map onto, and predict, the Big Five adult personality traits (Ahadi & Rothbart, 1994; Martin, Wisenbaker, & Huttunen, 1994; Rothbart, Ahadi, & Evans, 2000). As a general point of agreement in theory, temperament refers to individual constitutional differences in characteristics and reflects general behavioral patterns of the individual (Thomas & Chess, 1980; Ahadi & Rothbart, 1994). In a review of factor analytic studies, Martin et al. (1994) explain that the following five temperamental factors have some consistency in instrumentation and construct validity: activity level, negative emotionality, task persistence, adaptability/ agreeableness, and inhibition. In addition, Goldsmith suggests that behavioral patterns should be measured with regard to the temporal qualities (latency, frequency, duration) and intensity (threshold, rise and recovery, peak) of the responses (Goldsmith et al., 1987). Most theorists employ activity and emotionality as temperamental dimensions, and factor analysis research of other variables also suggests that reactivity and sociability are valid dimensions used in several models (Goldsmith et al., 1987).

Most temperament theorists agree that all of the child’s temperamental characteristics are not present in infancy, but that temperament emerges and changes alongside the child’s developing

neural systems, which includes growth in motor and cognitive processing (Goldsmith et al., 1987). From a review of diverse theories of temperament, the general consensus among theorists was that early temperament characteristics are influenced by both biology and socialization within the course of the child's interaction with the environment (Goldsmith et al., 1987). For this reason, Rothbart et al. (2000) emphasize that temperamental patterns must be assessed across a range of situations because of individual and contextual variation in affect, motivation and attention systems which are at the core of temperament.

Rothbart's Developmental Theory of Child Temperament

Rothbart and her colleagues present a developmental model of temperament, wherein reactivity and self-regulation play key roles in its expression (Rothbart et al., 2000). Reactivity is defined as "arousability of affect, motor activity, and related responses, assessed by threshold, latency, intensity, time to peak intensity and recovery time of the reaction" (Rothbart, Ahadi, et al., 1994, p. 22). Additionally, self-regulation is defined as "the processes functioning to modulate this reactivity, including behavioral patterns of approach and avoidance, attentional orientation, and selection" (Rothbart, Derryberry, et al., 1994, p. 84). Rothbart explains that temperament involves patterns in activity, emotionality and attention, and that both effortful and reactive processes are involved within temperament systems. The reactive processes involve inhibition or approach related to emotional arousal, whereas attention regulation (Effortful Control) reflects the individual's voluntary will and motivation and also includes the ability to shift attention and inhibit behavior.

Within this theory, temperament relates to the individual's underlying physiology and the associated maturational changes. However, the individual's temperamental characteristics show periods of stability within each developmental period, and periods of change between

developmental periods, resulting from ongoing interactions between the developing child and the social environment (Goldsmith et al., 1987). As a result of these shifts, Rothbart and her colleagues have developed instrumentation, congruent with the adult Big Five personality traits, to assess both infant and child temperament (Rothbart, Ahadi, et al., 1994). Using dimensions derived from this adult and infant research, the Children's Behavior Questionnaire (CBQ) was then developed to assess temperamental characteristics of children 3 to 7-years of age (Rothbart, Ahadi, Hershey & Fisher, 2001). This parent report measurement contained 16 dimensions, and was further clustered into three temperamental factors: Extraversion/ Surgency, Negative Affectivity and Effortful Control (Rothbart et al., 2000). As such, Rothbart's theory is compatible with the statements by Martin et al. (1994) mentioned earlier, since agreeableness and activity level are addressed within Extraversion/ Surgency, and Effortful Control attends to both inhibition and persistence qualities.

Dimensions of Temperament

Effortful Control. Developmentally, Effortful Control is the latest acquired temperament characteristic, developing primarily during the preschool and early childhood years (Rothbart, Derryberry, et al., 1994). Kochanska et al. (2000) explain that Effortful Control is "an individual difference variable that might integrate many diverse areas of early functioning" (p. 220) and it has a biological link to executive functioning, planning and the detection of errors. Effortful Control is central to children's internalization of caregivers' standards (Kochanska et al., 1996) and is related to the development of the adult trait of Conscientiousness (Rothbart, Derryberry et al., 1994). Individual variation in Effortful Control is demonstrated by "differences in the ability to voluntarily sustain focus on a task, to voluntarily shift attention from one task to another, to voluntarily initiate action, and to voluntarily inhibit action" (Ahadi & Rothbart, 1994, p. 196).

Within the neural system, researchers place Effortful Control within the anterior cingulate gyrus, which is a site theoretically related to attention, emotion and motor processes (Rothbart et al., 2000). The ability to shift and focus attention has been found to moderate both the reactive processes of approach and emotionality (Reed et al., 1984; Gilliom et al., 2002). Accordingly, preschool children who exhibit antisocial behavior have been found to score lower on such attentional executive functioning tasks (Hughes, White, Sharp, & Dunn, 2000). Ahadi and Rothbart explain that this executive functioning assists in the selection and inhibition of behavioral responses and is integral to all other temperament systems.

Surgency. Ahadi and Rothbart (1994) suggest that Surgency is reflected in behavioral impulsivity, activity level and sensation-seeking, and may be related to the intensity of an individual's emotional responses. Typically, children who score higher on Surgency ratings, have problems with low inhibition and increased anger and frustration (Ahadi & Rothbart, 1994). Gunnar et al. (2003) substantiate the link between Effortful Control and approach tendencies (Surgency). Using groups of aggressive and inhibited preschoolers, Gunnar et al. measured children's cortisol level as an indicator of activity in "stress sensitive physiological systems" (p. 346), relating to negative emotionality and surgency. The authors show that children, who received higher surgency and lower Effortful Control scores on the CBQ ratings, had higher cortisol levels than the highly regulated (less impulsive) children. They also found that preschool children who demonstrated more aggression, according to teacher reports, were rated as less controlled and more surgent on temperamental ratings than their less aggressive peers. Their findings of temperamental and behavioral ratings indicate that aggression and Surgency are positively correlated $r = .51$ ($p < .01$), and Surgency and poor Effortful Control have a positive relationship $r = .44$ ($p = .001$). Further exploration is needed regarding the relationship of

Surgency and Effortful Control in children, drawing on observations of children's daily experiences as opposed to the sole use of adult temperament ratings. Rothbart et al. (2000) emphasize the importance of this correlational research, claiming that attentional and behavioral control problems may originate with a strong approach tendency, such that "the initial strength of action 'acceleration' creates difficulties for any 'braking' effects of Effortful Control" (p. 130).

Emotionality. With age, children's emotional reception develops and their emotional expressions become increasingly integrated with their cognitive understanding. As these emotional reactions become connected to motor and cognitive coping strategies, a process of "short-circuiting" occurs wherein the child develops patterns of emotional responding (Goldsmith et al., 1987, p. 517). Both negative and positive emotional reactivity are connected to the attentional responses of the Behavioral Inhibition System (BIS) and the Behavioral Activation System (BAS) (Rothbart, Derryberry et al., 1994). Within the brain's structure, basic emotional circuitry within the limbic system is influenced by the attentional control system. In fact, fear and Effortful Control work together as "inhibitory temperament systems" which assist in suppressing and sustaining behavior (Kochanska et al., 2001, p. 1092). Negative emotions impact approach tendencies in opposing directions, as anger increases and fear diminishes approach behaviors (Rothbart, Derryberry et al., 1994, p. 108). Rothbart, Derryberry et al. (1994) also explain that low negative emotionality is correlated with high Effortful Control across studies of both children and adults.

As one of Thomas and Chess's (1977) temperament dimensions, the adaptability factor in temperament theory also seems to overlap with ratings of emotionality (Martin et al., 1994). An easy or adaptable child would need to manage emotional arousal levels through attentional control, and a difficult child would have higher reactivity, emotionality and lower regulation.

Eisenberg et al. (2001) found that children who are characterized by high internalizing and externalizing scores, according to teacher and parent assessments, tend to be higher in emotionality and lower in their regulation of emotional arousal in laboratory measures. Specifically, in their sample of 4 to 8-year-olds, children with internalizing problems had higher scores on sadness, whereas those children who had externalizing problems received high scores on both anger and sadness. Children's "unregulated anger and frustration" may often cause them to be disruptive, defiant or aggressive (Eisenberg et al., 2001).

Temperament and the Developing Personality

Caspi and Silva (1995) propose that early individual differences in personality descriptors shape a characteristic pattern of responding to the environment, and that the origins of later personality exist within these temperamental traits. Using a sample of 800 participants from the Dunedin Multidisciplinary study, the authors used cognitive and motor tasks and behavioral ratings to assess over 800 children every 2 years, beginning at age 3. In their 15-year longitudinal study, Caspi and Silva report that they found a general continuity in temperamental styles across childhood. In order to explore the long term consequences of these behavioral patterns, Newman, Caspi and Moffitt (1997) utilized the same sample to ascertain the self-reported functioning of 900 participants across contexts and relationships at age 21. Their findings show that children who were rated as undercontrolled at age 3, are at greatest risk for poor adjustment and increased conflicts in social relationships during early adulthood.

Other developmental researchers have employed Block and Block's (1980) conception of three behavioral styles: ego resilients (optimally controlled), overcontrolled, and undercontrolled. Ego resiliency "refers to the tendency to respond flexibly rather than rigidly to changing situational demands, especially frustrating and stressful encounters" (Robins, John, Caspi,

Moffitt, and Stouthamer-Loeber, 1996, p.159). Overcontrol refers to “excessive containment of impulses, delay of gratification, inhibition of action and affect, and insulation from environmental distractors”, and undercontrol refers to “insufficient modulation of impulse, the inability to delay gratification, immediate and direct expression of motivation and affects, and vulnerability to environmental distractors” (Block & Block, 1980, p.43). Hart, Hofmann, Edelstein and Keller (1997) examined the validity of these behavioral styles within a sample of 7 year old children. This 8-year longitudinal study also explored the significance of these styles in terms of later successful friendships and academic achievement. Their findings show that overcontrolled children were more socially withdrawn during adolescence, and undercontrolled children displayed increased aggression in their teenage years according to teacher behavior ratings. However, the optimally controlled children had better school achievement, better concentration and better friendship strategies in adolescence. Robins et al. studied a sample of 300 adolescent African American and Caucasian boys and found 18% of the sample fit the undercontrolled personality type. They reported that undercontrolled adolescents scored lower on the Wechsler Intelligence Scale for Children-Revised ($M=96$) than ego-resilients ($M=104$), and were twice as likely (9%) to report their engagement in serious delinquent acts than ego-resilients (4%). These undercontrolled boys “showed a clear antisocial pattern; they were impulsive, self-centered, manipulative, confrontational, and outgoing, and seemed likely to act out” (Robins et al., 1996, p. 163).

Block and Block (1980) have suggested that aspects of temperament interact with the environment to produce a limited number of personality types. They identified those personality types in young adults, using the California Adult Q-Set (CAQ) and in young children using the California Child Q-Set. These assessments are composed of 100 personality descriptors, centered

on the constructs of ego resiliency and ego control. In their work, ego-resiliency refers to the ability to "modify one's behavior in accordance with contextual demands" (Block & Block, 1980, p. 48), and ego-control refers to the individual's "degree of impulse control and modulation" (Block & Block, 1980, p. 41). These constructs reflect regulatory processes that affect an individual's behavior in varied situations. In comparison, Ahadi and Rothbart's (1994) Big Five temperament dimensions describe the behavioral differences that result from the individual's regulatory capacities. Taken together, these systems "allow us to explicate the psychological nature of personality types at two levels, one focused on regulatory mechanisms and the other on manifest behavior" (Robins et al., 1996, p. 160). Additionally, these constructs fit with Kopp's (1982) understanding of self-regulation, in terms of the individual's ability to delay actions and impulses, and the ability to initiate, modulate and cease activities in accordance with situational demands. Research will benefit from the combination of Rothbart's dimensions of temperament and the descriptors of an undercontrolled behavior style, in order to study maladjusted behavior as it relates to developing self-regulation.

Temperamental Qualities of Undercontrol

Block and Block (1980) explain that the undercontrolled child is "a restless, externalizing, impulsive, easily disrupted child, a syndrome that fits more than a little the description of the hyperactive child" (Block & Block, 1980, p. 88). These children have poor ego-resiliency and poor ego control. In accordance with this description of poor modulation and control, Eisenberg, Fabes, Guthrie and Reiser (2000) explain undercontrolled behavior as "low in inhibitory control and high in impulsivity; the underutilization of adaptive attentional and activational control, and proactive or problem-focused coping strategies" (p. 140). In Caspi and Silva's (1995) work, undercontrolled children are characterized as more irritable, more inattentive, less controlled,

rougher during play and less able to sit still. Within their sample of 800 children, 13% were identified as undercontrolled, and 62% of these undercontrolled children were male. Hart et al. (1997) also describe these children as highly active and energetic, immediately expressing and responding to their desires, and having problems sustaining attention on a single activity for long periods of time. Eaton (1994) explains that this high activity level, which is a temperamental characteristic, is linked to undercontrol as well as inattention and aggression. Eaton argues that children move from “mostly moving to mostly talking” in normal development, and therefore overactivity is seen as a problem behavior by the time the child is 3 to 5-years-old (p. 182).

Kopp (1982) suggests that these problems with impulsivity and poor regulation can originate from neurological abnormalities, maturational imbalances, poor language development, or caregiver insensitivity. Children who are characteristically overactive and undercontrolled are frequently viewed as immature because of their underdeveloped regulation skills (Eaton, 1994), are more likely to display frustration, aggression and anger (Rothbart, Derryberry, et al., 1994), and often face later peer rejection because of their disruptive, overemotional behavior (Coie et al., 1990). Campbell (2002) points out that “in early childhood, the bulk of problems about which adults complain are characterized by undercontrol, and these problems can be construed as failures to develop internalized standards of socially appropriate behavior and/ or to use these standards to guide behavior” (p. 57). For the undercontrolled child, a continuing struggle with self-regulatory strategies and poor modulation of emotion and impulse, leads to later academic difficulties and social problems with peers (Coie et al., 1990; Calkins et al., 1999; Eisenberg, Fabes, Guthrie, & Reiser, 2000).

*Linking Temperament and Self-Regulation to Social Behavior**Reactivity and Regulation*

Since reactivity and regulation are central to the definition of temperament, researchers have focused on the interrelationships of the two constructs, especially in terms of their effects on children's social behavior. Most studies of temperament have focused on attentional regulation or behavioral inhibition and many have assessed temperament through the intensity and frequency of displayed emotional arousal or reactivity (Caspi & Silva, 1995; Eisenberg et al., 2000; Fabes et al. 1999; Gunnar et al., 2003). Currently, there is a cluster of research regarding temperamental reactivity and negative emotionality, and the influence of these factors on the regulation of social behavior (Marakovitz & Campbell, 1998; Fabes, et al., 1999; Eisenberg et al., 2003; Spinrad et al., 2004). In fact, Rothbart et al. (2000) theorize that behavior is regulated through both reactive emotion systems (i.e. fearfulness) and through self-regulated attention (Effortful Control).

As dispositional traits, types of emotionality and affect regulation relate differently to social behavior. Eisenberg et al. (2001) report that children with internalizing problems had low Effortful Control, low impulsivity (or high involuntary control), and had a "temperamental proneness to negative emotion" such as sadness and fear (p.1129). Conversely, children with externalizing problems had higher anger and impulsivity scores, and scored lower on attentional regulation, inhibitory control, and effortful regulation in comparison to both the internalizing and control groups. The authors suggest that both groups of disordered children likely have problems regulating their negative internal affect, but the children with externalizing problems would react with more impulsivity and overt behavior. Although the causal nature of the relationship is undetermined, both emotion and regulation are central to social behavior. Eisenberg et al. (2003)

suggest that individual differences in Effortful Control, which are present at age 5, are positively related to social competence indicators across childhood and adolescence. However, they also give emphasis to negative emotionality as a moderator of this relationship.

Regulating Emotionality

Research does suggest that temperamental characteristics, especially Effortful Control, can help to regulate other dimensions of temperament. In a study of 6 and 7-year-old children, Rothbart, Ahadi, et al.(1994) propose that Effortful Control may serve to regulate reactivity to reduce aggression. By using scores of anger/frustration and temperament previously gathered for these children from related studies, these researchers analyzed the correlations between temperament and other behavioral traits. They found that Effortful Control has a negative correlation with negative emotionality. Accordingly, they demonstrate that Surgency, which is a temperamental reactive approach tendency, relates to aggressive behavior. As such, a lack of Effortful Control contributes to a predisposition for aggressive social behavior (Rothbart, Ahadi, et al. 1994; Spinrad et al., 2004).

Kochanska et al. (2000) explain that there are “direct effects of temperament on adjustment” (p. 231). In a longitudinal study, the authors used a behavioral battery and observational assessment tasks to measure Effortful Control in early development. The authors suggest that the child’s ability to inhibit a prepotent response, or perform a moderated response is required for behavioral and emotional regulation, suggesting that different capacities for Effortful Control and emotional reactivity have implications for social outcomes. In fact, their results show that children with higher ratings on Effortful Control at 22 months were slower to anger, and displayed less intense anger or joy at 33 months.

Cole, Zahn-Waxler and Smith (1994) found that preschoolers' increased display of anger correlated with the frequency of disruptive behavior, within an observed "disappointment" task, and this was especially true for boys $r = .36$, ($p < .01$). Additionally, they report that boys' display of negative emotion negatively correlated with their self-regulatory behavior $r = -.44$ ($p < .005$). The authors suggest that although boys may be socialized toward an increased display of anger, disruptive boys may "learn gender specific social standards but fail to implement them in well-regulated ways" (p. 843). As a result, those boys who have a tendency for disruptive behavior may develop regulation patterns that contribute to later social problems.

From a study of preschool children, Eisenberg, Fabes, Nyman, Bernzweig and Pinuelas (1993) conclude that social behavior is likely an outcome of emotional reactivity and the regulation of negative emotionality. Using a sample of 4 to 6-year-olds, these authors investigated the relationship of emotionality and regulation to children's anger reactions and constructive coping in natural situations. They discovered that children who were rated as higher in emotional intensity and lower in regulation displayed less constructive coping in anger situations. Using a sample of children ages 8 to 12-years, Eisenberg et al. (1996) designed another study to investigate the relationship of children's constructive coping to their prosocial nominations by peers. They reported that "children who are dispositionally well-regulated (particularly if also low in negative emotionality) are better able than other children to attend to social situations and others' needs, as well as to regulate negative emotional reactions" (p. 989). Following these results, Eisenberg et al. (1997) explored the prediction of social competence or problem behavior from individual differences in emotionality and regulation, using the same protocols for regulatory coping styles. The authors followed 77 children from preschool to elementary school, and found that children who were higher in regulation and low in negative

emotionality, were also consistently rated low in problem behavior across a 2 to 4-year time period. It is interesting to note that these findings revealed that problem behavior is better predicted by negative emotionality than overall emotional intensity. More research is needed to investigate how young children who exhibit problem behaviors, attend to social situations and regulate their negative emotions.

The importance of temperament to developing self-regulation and social competence is supported by Fabes et al. (1999), who claim that socially competent behavior is “determined in part by an individual’s dispositional level of regulatory control” and is linked to children’s emotional expressions and intentions (p. 432). The authors propose a model where high negative emotional arousal negatively influences children’s ability to regulate their social behavior and respond competently. This hypothesis is supported by Stifter et al. (1999) who also claim that children employ different regulatory strategies depending on the emotion associated with the situation. Fabes et al. utilized observations of preschoolers in naturally occurring free-play, where they coded the child’s display of negative emotions and the degree to which the child’s actions led to positive interactions. These results were correlated with teacher ratings of temperament and the analysis shows that children with higher Effortful Control scores displayed less negative emotion during more intense peer interactions. This study presents important evidence that the emotional quality of situations and tasks do influence children’s social responses.

Cole, Teti and Zahn-Waxler (2003) also explored the salience of the emotional qualities of an activity in relation to preschool children’s emotional regulation. In their sample of 85 preschoolers, the authors found that children who demonstrated externalizing symptoms had the most difficulty with emotion regulation and displayed more anger and distress during a

frustrating “wait” task. Future research must reflect on the context and intensity of interactions when considering children’s social behavior and emotional responses.

Temperamental Influences on Self-Regulatory Strategies

In accordance with the evidence that individual differences in self-regulation and emotionality are related to a child’s strategy selection, Murphy and Eisenberg (1996) explore how children cognitively and behaviorally regulate anger. They present the idea that a child who is overwhelmed by negative emotion is likely to enact a social strategy that is not indicative of the child’s social goal. Using a sample of 7 to 9-year-old children, they describe children’s reported use of aggression, avoidance, adult-seeking, or non-abusive verbal strategies within conflict situations (p. 111). They present findings which show aggressive boys place less value on affiliative goals and more value on dominant or hostile goals. However, their research also suggests that children who score higher in social functioning measures, report less anger and more use of constructive strategies in conflict. These findings are corroborated in Stifter et al.’s (1999) research, where toddlers who were high in reactivity and who had poor regulatory strategies to modulate emotions, were more likely to display defiance. Stifter’s research employed a laboratory observation with toddlers, while Murphy and Eisenberg interviewed children in elementary school regarding their conflict strategies. In order to examine the validity of these findings, additional research is needed to examine these behaviors within naturally-occurring peer interactions. It would be beneficial to examine the strategy use of preschool-aged children to further explore the antecedents and the continuity of these strategies.

Hughes et al. (2000) maintain that the social problems of these hard to manage children “owe more to failure of behavioral regulation than to problems in social understanding per se” (p. 178) since scores on executive functioning tasks have been linked to children’s capacities for selecting

responses (Rothbart, Derryberry, et al., 1994). Within a study of “hard to manage”, aggressive preschoolers, Hughes et al. investigated children’s social strategies within natural dyadic friendship interactions and how children’s executive functioning relates to their social strategies. The researchers sent a questionnaire to parents of preschoolers to gather a sample of children who scored above the 90th percentile on hyperactivity and conduct disorder; this target group was composed of 24 boys and 16 girls aged 3-years, 6 months to 4-years, 6 months. According to their results, low scores on planning tasks are correlated with children’s increased displays of negative emotion, and consequently, the hard to manage group had significantly lower scores on these tasks than a control group. In addition, during observations of natural peer play, these disruptive preschoolers exhibited more anger regarding unintentional actions by peers and engaged in less helping behavior in response to peers’ distress. However, the study did not find group differences in violent talk or in rates of reactive or proactive aggressive responses. The authors suggest that the link between children’s executive functioning and their emotional displays and social responses should be explored with a larger more representative population spanning various natural contexts.

In order to better understand young children’s patterns of responses, Zahn- Waxler et al. (1994) explored the relationship between emotionality and patterns of dysregulation. Using a sample of 4 to 5-year-old children who displayed externalizing symptoms, the authors examined children’s potential strategies for managing conflict and distressing situations. In addition to rating expressed affect, the researchers coded each child’s strategy selection as either prosocial, aggressive, manipulative or avoidant. The children’s responses to hypothetical situations were also coded under the following verbal or behavioral strategies: prosocial, reparation, affiliation, compliance, avoidance, angry enactments, aggression, or noncompliance. In hypothetical

situations of distress or conflict, children's emotional dysregulation was predicted by their attention-deficit, or oppositional symptoms. Although these disruptive preschool children generated numerous prosocial choices, they demonstrated more anger and selected more dysregulated or aggressive strategies in real conflict situations than their average peers. The findings show that, in emotionally-charged situations, aggressive strategies were predicted by antisocial symptoms, partial $r(85) = .24$, $p < .05$, and by oppositional symptoms, partial $r(85) = .22$, $p < .05$. The authors recommend further research into the behavioral sequences within children's interactions in order to better understand how children use these strategies to solve problems within their social interactions.

Research on Preschool Play Experiences

Development of Peer Interaction

Children's cognitive development facilitates a growth in social interactions in the toddler and preschool years. At ages 2 to 3, children are engaged in basic games, imitations, and turn-taking (Howes, 1987). By the end of the second year, children are able to communicate more effectively, and can coordinate play around themes, goals and plans (Hartup, 1996). During the early preschool years, Howes explains that children begin to participate in social pretend play and utilize their cognitive abilities of perspective-taking and symbolic representation. As cooperative play advances beginning at age 3, children form additional friendships, begin to discriminate between the meanings and roles of their relationships and learn the social rules associated with pretend play. Throughout the toddler and preschool years, children transition from playing with groups of peers to a select peer group. However, the proportion of dyadic play decreases with age and the amount of social pretend play among familiar peers, increases (Rubin

et al., 1999). Preschoolers may still enter into solitary play, but it is typically constructive or exploratory in nature (Rubin, Coplan, Nelson, Cheah, & Lagace-Seguin, 1999).

By ages 4 to 5, children are more likely to perform imaginary roles (e.g. fireman, doctor) within cooperative play and this stage of play involves growth in perspective taking, planning action and using representational props (Campbell, 2002). Social pretend play becomes more regular, complex and long-lasting in 5-year-olds, as children's language and social skills develop (Campbell, 2002). Preschoolers show evidence of understanding social conventions and affective expression during pretend play, such as their use of voice changes and exaggerated emotions while acting in different roles (Corsaro, 1985). The most significant change in play at this time is the difference in the cognitive quality of the interactions. Campbell claims that "children who are unable to engage in pretend play may lack certain symbolic or language abilities, raising concerns about cognitive-developmental delays; or they may be showing signs of social withdrawal and emotional constriction" (p. 51).

Social-Cognitive Importance of Play

Mutual friendship is important to children's social development, as early as the preschool years (Lindsey, 2002). Repertoires of social skills and behaviors are ascertained through children's contact with their environment through "observation, trial and error, exploration, direct first-hand experiences, and discovery" (Muuss, 1982, p. 500). For instance, during preschoolers' cooperative play, children practice relevant social and cognitive skills such as role-taking and reciprocal communication, which are associated with successful play initiation and sociability ratings (Howes, 1987). The cooperative experiences within peer interactions provide "both a context and a mechanism" for growth in cognitive development and the practice of social competencies (Brown, Holcombe, & Odom, 1996, p. 20; see also Piaget, 1926/2003). Rubin et

al. (1999) suggest that children's early friendships provide a context to investigate the "effects of their behaviors on themselves, their peers, and their environments" (p. 459). Although preschool children tend to be increasingly cooperative in their interactions, they also begin to engage in more conflicts with their friends. Within these interactions, children are learning social and emotional cues (Costin & Jones, 1992), and practicing with emotional and behavioral regulation (Newcomb & Bagwell, 1995). Alongside their growing awareness of social rules and others' perspectives, preschoolers are developing the capacity and skills for using nonaggressive social control strategies (Krasnor & Rubin, 1983). Although social proficiency is required to initiate play and form a friendship, the child may strengthen these social skills (such as problem-solving and emotional regulation) and advance cognitively within friendship conditions that maintain a relationship.

The Effects of Self-Regulation on Play

Entry strategies. Those children who have difficulty with gaining entry into play and with developing friendships most likely exhibit inappropriate behavioral responses, causing them to be rejected by their peers (Lindsey, 2002). Popular children are more skilled at initiating and modulating positive interactions. They enter play through initial regard, followed by communicating and sharing in the frame of reference of the peer group, without disrupting the activity (Putallaz & Wasserman, 1990). They are also able to respond appropriately, with clear speech, to the social questions of peers (Rubin et al., 1999). Popular children, who respond positively to peers' initiations, are approached more frequently by peers than less accepted children; in turn, these accepted children receive more positive responses when they attempt to initiate interactions (Mize, Ladd, & Price, 1985). According to Gill and Calkins (2003), when an aggressive child misperceives a social situation and fails to decipher his or her role or

responsibility, the resulting behavior is a display of impulsivity and a lack of emotional control which likely impedes further social interaction with peers. In this way, a child's social competence, and ultimately peer acceptance, is dependent on his or her selection of social overtures, initiation tactics and recognition of interpersonal cues in a given play circumstance (Rubin, Booth, Coplan, Krasnor, & Lynch, 1994). During observations of groups of 3- and 4-year-old children, Corsaro (1981) found that just over half of a typical child's initial entry attempts were refused or ignored by the group. Therefore, the child's emotional and behavioral regulatory strategies in response to this denial are essential because "once an attempt has failed, the child may need to negotiate, compromise, and consider others' viewpoints in subsequent strategies" (Krasnor & Rubin, 1983, p. 1555). Mize and Ladd (1990) argue that preschoolers' fluency in self-regulatory strategies, in addition to their ability to select positive and effective strategies, affects their peer relationships. These authors suggest that early intervention programs should assist children in "translating their social knowledge into positive behavioral sequences" (p. 341).

Social participation. An exploration into play behavior in 5-year old children revealed that different types of nonsocial play are associated with various child characteristics (Coplan, Gavinski-Molina, Lagace-Seguin, & Wichmann, 2001). In Coplan et al.'s study, reticent and solitary play behaviors were coded during free play using the Play Observation Scale, and these scores were correlated with teachers' ratings of social competence and behavior problems. These authors report that reticent play (onlooker or unoccupied behavior) was negatively related to externalizing problems $t(74) = -2.18, (p < .05)$. Finally, solitary-passive play was negatively associated with adjustment ratings for boys but positively associated with adjustment for girls. Solitary-active play, which reflects immaturity, impulsivity and high activity, is viewed quite

negatively by peers. This type of play was observed as a relatively infrequent behavior among the Kindergarten sample, and was associated with the display of emotional dysregulation. In light of the grim social outcomes for unaccepted children, further research is needed to investigate the social competence of children who engage in nonsocial play, especially with regard to the behavioral and emotional regulatory strategies that may prevent them from engaging in cooperative peer play.

Spinrad et al. (2004) propose that individual differences in temperament relate to differences in children's nonsocial play behavior. In this study, 138 preschool children were assessed regarding their nonsocial behavior during both long and short observations of free play. The researchers analyzed the relationship between these observational scores, and parents' and teachers' reports of emotionality and regulation. The analysis revealed a negative relationship between positive emotion and solitary play $r = -.40$, ($p < .001$), as well as between positive emotion and reticent play $r = -.44$, ($p < .001$). Across assessments between the first and second semesters, an increase in a child's solitary play was associated with poorer attentional and inhibitory regulation scores. In conclusion, the authors suggest that the unregulated child gradually becomes rejected by peers and increasingly engages in nonsocial play. Similar disheartening findings were also described by Howes (1987) in her study of 2 to 6-year-olds. This longitudinal research illustrated that rejected children, over time, become less successful with group entry attempts and display decreasing positive emotions in peer interactions.

Temperamental sociability and undercontrol are also linked to social interactions and peer acceptance. Rubin, Coplan, Fox & Calkins (1995) claim that good emotional regulation in social situations acts as a buffer against negative social outcomes. During observations of preschool children's play in groups of four, Rubin et al. coded children's social participation, and their

display of anxious, aggressive, hovering and off-task or on-task behaviors. In their sample of 96 children, they found that temperamentally sociable children, who were poor emotion regulators, were disruptive and aggressive with peers during observations. As a result, these authors propose that intervention should focus on socially reticent children who display emotional dysregulation, in order to prevent serious internalizing problems in adolescence. This study reinforces the substantial evidence across early childhood research indicating that children who struggle with emotional and behavioral regulation are at risk for negative social outcomes. In fact, a child's "developmental trajectory may actually be that poor regulation leads to impulsive, aggressive, undercontrolled behavior, then to peer rejection" (Gill and Calkins, 2003, p. 68).

Summary

Early childhood research needs to explore the form of self-regulation during the course of child development, since early deficits in self-regulation produce negative social outcomes in later childhood and adolescence (Coie, 1990; Eisenberg et al., 1996). As a result of her work with "hard to manage" preschoolers, Campbell (2002) suggests that, "Given the rapidity of development during these early years and the interrelationships among these various social and cognitive advances, problems in one area (e.g., self-control) may spill over to affect development in other areas (e.g., peer relations)" (p.37).

The research of Rothbart et al. (2000) and Eisenberg et al. (2003) demonstrated that children's temperamental characteristics which are related to capacities for emotional and behavioral regulation, have a direct influence on children's social functioning. The link between temperament and self-regulation in developmental research is important due to projections that early patterns of disruptive behavior may be an indicator of later emotional and social problems (Rothbart, Ahadi, et al., 1994; Calkins et al., 1999; Campbell, 2002). However, further research

is needed in describing the response profiles of children who are dysregulated and undercontrolled. Furthermore, additional research is needed to explore the repertoire of strategies used by boys during early development, because there is significant evidence that gender is associated with differences in levels of inhibition, and strategy choices.

In reviewing the literature on the early development of self-regulation, it becomes clear that research is lacking in its examination of preschoolers' strategy selection, especially within naturally-occurring contexts. Much of the research on social behavior, emotionality and behavioral regulation has used laboratory observations, teacher and parent ratings of behavior, and cognitive task assessments. As such, few studies on self-regulation have been designed to observe preschool children in their natural play environment, and these studies have explored only certain aspects of the children's behavior (Eisenberg et al., 1994; Fabes et al., 1999; Hughes et al., 2000). The study of young children in natural contexts has assisted researchers in distinguishing between forms and functions of aggression, and types of play. The regulatory strategies used by preschool children in naturally-occurring play warrants further study since research has shown that the emotional quality and the peer context of the situation may have an effect on the child's ability to select appropriate and effective social responses (Cole et al., 2003; Fabes et al., 1999; Murphy & Eisenberg, 1996; Stifter et al., 1999; Zahn-Waxler et al., 1994). As the child behaves holistically within social interactions, an exploration of the child's repertoire of responses should be analytically connected to the context and outcomes of the behavior.

This literature review focuses the direction of the present research study, and Chapter 3 describes the methodology used to guide this exploration and description of preschool boys' self-regulation strategies. In fact, the case study design of the present study is strongly linked to the theories and relevant findings of previous research, within the sampling and data analysis

procedures. The choice of the qualitative approach to this present research results directly from the need for holistic, natural observations of the social interactions of preschoolers who exhibit undercontrolled behavior.

Chapter 3: Methodology

Overview

This chapter presents an overview of the methodology used in this research. Initially, a case will be made for the use of a qualitative approach in the study of preschool children's self-regulation, and the discussion will present rationale for employing a multiple case study design. Since this study is a part of a larger study of preschool children's self-regulation, this chapter describes the instrumentation and data collection that has been used in the larger research design. The purpose of the present study is to describe how boys, ages 4 to 6, who exhibit undercontrolled behaviors, employ self-regulation strategies during natural play experiences within the preschool environment. Consequently, this account of the research design includes the sampling criterion for the case study participants who are selected from the larger sample. Finally, an overview of the data analysis procedures will demonstrate the study's emphasis on a conceptually-driven description of the self-regulation strategies used by characteristically undercontrolled preschool boys.

Rationale

The purpose of the current study is to explore and describe preschool-aged boys' use of self-regulation strategies during their experiences in the preschool setting. The review of the literature indicates that the context of children's play and interactions may have an important impact on their behavior and their use of self-regulatory strategies; however, few studies have investigated young children's behavior in naturally occurring situations. Gall, Gall and Borg (2005) suggest that the research question should drive the choice in research design and that the data will guide the findings in the discovery of concepts and theories. Gall et al. also explain that the purpose of qualitative research is to explore "the different social realities that individuals in a social

situation construct as they participate in it” (Gall et al., 2005, p. 14). Therefore, this study draws upon qualitative methodology to generate a better understanding of this social phenomenon through holistic observations in natural settings (Shank, 2002).

This study employs a case study design, which “investigates a contemporary phenomenon within its real-life context” (Yin, 2003, p. 13). In this study, preschool-aged boys are selected as cases for study, based on descriptive and behavioral criteria. The case study design is most suitable when the relevant aspects of a phenomenon cannot be truly manipulated, as it allows the researcher to simultaneously explore the conceptual nature, and the physical and temporal qualities of the phenomenon. As children behave holistically, with physical and verbal responses, and with emotion and with morals, the boundaries between their behavior and its context are not distinguishable. Thus, in the present research, the case study design allows for an analysis that includes important contextual aspects of the children’s behavior such as the play setting, the play activity, and the peer context.

The qualitative researcher is searching for “meaning rather than behavior” within the naturally occurring data, to understand how interactions are organized (Silverman, 2000, p. 8). While exploring a case during data collection, the researcher shall “gradually come to realize which issues are best to build the story around” (Stake, 1988, p. 258). With the purpose of describing, explaining or evaluating, the case study researcher also focuses on certain aspects of the phenomenon for data collection and analysis. A careful analytic process, such as the analysis recommended by Yin (2003) contributes to the development of a portrait that reflects the participants’ and not the researcher’s way of thinking.

In this multiple case study, the report intends to recreate the situation and context through “thick description”, providing a deeper understanding of the meanings within that situation, and

identifying underlying patterns, concepts and themes (Gall et al., 2005). However, the qualitative approach is not meant to account for every piece of information that results from observations, but can provide a deeper knowledge of the patterns in the participants' experiences (Shank, 2002). The patterns that emerge from the observations of preschool-aged children as cases in this study offer an improved understanding of the development of self-regulatory behavior.

Through the analysis of words and actions, the qualitative approach offers inductive, hypothesis-generating research (Silverman, 2000, p. 8). Often a qualitative research design can include many variables of interest, but the direction of a case study is conceptually-driven or guided by theory and the goal is to develop pertinent hypotheses for further inquiry (Yin, 2003). Yin suggests that the quality of a case study's collection and interpretation is dependent upon four factors: attending to all the evidence, addressing major rival explanations, focusing on the most important aspect of the case study, and using the researcher's prior experiences and expert knowledge. By addressing rival theories within the analysis, the researcher gains both internal and external validity. Internal validity of a case study is achieved through conscientious and applicable analysis such as pattern-matching or explanation-building (Miles & Huberman, 1994). For reliability, Yin emphasizes the importance of establishing a case study protocol, with clear procedures, a database and a chain of evidence. Yin insists that the researcher's care in an empirical investigation will be "reflected in the presentation of the cases themselves" (p. 138).

Additionally, the researchers' engagement in reflexivity is crucial to the validity of the case study's results, and as such researchers must examine their personal relationship to the case and the outcomes (Yin, 2003). Predictably, within a qualitative approach, the researcher becomes involved in the context and in the perspectives of the participants, as the researcher is "there to discover; simply looking and remaining detached does not allow us the depth we need" (Shank,

2002, p. 191-192). As a case study researcher, in particular, an account of each child must be created using an emic perspective, endeavoring “to view the phenomenon as the participants view it” (Gall et al., 2005, p. 309). However, this case study analysis will also include the etic perspective, where this researcher must act as a “measuring instrument”, depending on intuition and judgment to realize the meaning of the observation (Gall et al., 2005, p. 314). In this case study, the observations of the preschool children’s behavior are analyzed with regard to both overt and embedded patterns of self-regulatory behavior.

In order to study an episode, event or process in depth, the case study researcher uses purposeful sampling to choose an “information rich” case as the unit of analysis (Miles & Huberman, 1994). Truly, the researcher is asking, “what can we learn from an individual that allows us to see the world differently?” (Shank, 2002, p. 53). Yin (2003) cautions that holistic case studies must examine a “specific phenomenon in operational detail” in order to offer clear and concrete results (p. 45). Miles and Huberman (1994) suggest that a multiple case study design provides more compelling evidence than a single case, when external conditions create a variance in the phenomenon being studied. Therefore, as the preschool environment and peer interactions indeed vary across cases, this researcher has selected 6 children as cases of study. This use of multiple cases is intended to offer a deeper understanding of the children’s self-regulatory behavior and more robust support for a conceptual framework. Each child, as a case study, can potentially display behavioral patterns similar to the other cases, allowing for a “literal replication” of the propositions (Yin, 2003, p. 47).

Sampling of Participants

Participant selection in qualitative research is theory-driven, where the choices are governed by the research purpose (Shank, 2002). This practice of purposeful sampling requires that cases

typify a specified attribute or behavior and the parameters for the selection of these cases are “theoretically grounded” in the research literature (Silverman, 2000, p. 105). This purposeful selection allows the researcher to examine cases with the intention to evaluate a conceptual proposition or theory, not to generalize to a defined population. As a result, researchers intentionally select individuals and sites which will provide insight on the central phenomenon and the standard used in choosing these cases is whether they are ‘information rich’” (Creswell, 2002, p. 194). In this case study, the criterion-based, purposeful selection of cases allows the researcher to explore the children’s behavior in order to confirm propositions made by Rothbart et al. (2000) and Eisenberg et al. (2003) that there is a relationship between temperament, regulatory coping and social behavior. Specifically, the participants in this study were selected based on criterion of an undercontrolled behavior style. The researcher gained this description of the children via parental perceptions and naturalistic videotaped observations.

The participants in the larger self-regulation study were obtained through initial contact with educators and directors of preschools within a mid-sized city on the Canadian Westcoast. If there was expressed interest in the study, the graduate research assistants delivered an information package to the preschool or attended a preschool general meeting to provide further information. Following the presentation of information, 7 preschools chose to participate and these represented a range of private, religious-affiliation, and parent cooperative preschools which were housed in community centers, churches, or elementary schools in various rural and urban neighborhoods. With grant money from HELP (Human Early Learning Partnership), two educational books were offered to the enlisted preschools as a gift of appreciation for their support. Once the preschool endorsed the study, arrangements were made for the graduate research assistants to visit the preschool with the purpose of providing information and obtaining

parental consent for participation. Parents were initially contacted by phone, or in person (See Appendix B). Upon consent, parents were provided with a carbon copy of the consent letter, which outlined voluntary participation and confidentiality within the study (see Appendix C). If the parents withheld consent, the assistants requested that the parent sign a consent form to allow their child to be present in the background, or during peer play, within the videotaped segments (see Appendix D). Participants' documents were assigned a number which corresponded to both parent and child data, and these numbers were used throughout the study to maintain anonymity.

Once the research commenced within each preschool, we requested consent from each child for whom we had gained parent consent. The decision-making capacity of children is a central concern within sampling and data collection, and research ethics boards work to ensure that researchers are sensitive to children's age and development in obtaining their consent (Canadian Interagency Advisory Panel on Research Ethics, 2003). At the time of observation, the graduate research assistants obtained the ongoing consent of the child and the child's peers using an age-appropriate standard script (see Appendix G) to explain our intentions and request permission to videotape. Since children at this age are not fully able to comprehend research and may not feel autonomous in making choices about participation (United Nations Convention on the Rights of the Child, UN, 1989), the graduate research assistants were careful to observe the children's nonverbal expressions of comfort and consent (Jokinen, Lappalainen, Merilainen & Pelkonen, 2002). For example, we observed the children's behavior and reactions on the first day at the preschool, and noted children who were shy or outgoing. In order to reduce the impact of the researchers' adult authority, we gave the slow to warm children more time to acclimatize to the videotaping and the researchers' presence.

The preschools involved in the study provided a variety of day, morning and afternoon programs, serving mixed gendered groups that were either combined age groups or separated into younger and older groups. Across the locations, a total of 146 families provided consent, and these represented a range of SES and self-designated ethnic backgrounds, both within and between preschools. Children with learning or behavioral exceptionalities were represented within the preschool population and were included within the larger study's sample. Parents' reluctance to consent was primarily due to a lack of time to accommodate the interview or focus group.

Upon completion of data collection for the larger study, this case study sample of 6 children was selected purposefully from the larger sample based on specified criterion. This "criterion sampling" procedure reflects the conceptual rationale of the case study design, and the cases were expected to confirm trends found in the larger sample (Gall et al., 2005). These children were selected from 4 of the participating preschools, to increase the likelihood of including children who have diverse home and school experiences. The behaviors and play of the children in the preschool environments was observed as developmentally appropriate, and typical of children learning, refining and acquiring new skills through play. The children across the preschool classrooms displayed a continuum of self-regulatory skills with adult support. Therefore, in the selection process, the researcher reviewed journal observations written during data collection, videotaped observations, and parent descriptions of the children's behavior. Children who demonstrated a variety of successful play behaviors, management of difficult emotions, and consistent problem-solving within interactions were not included in this study. Children have been selected for this study in accordance with descriptions and observations, based on the following criterion:

1. A child selected for participation in this study should be at least 4 years of age and not older than 6 years 5 months, and must currently attend preschool.
2. In response to interview question 1 (See Appendix E) parents described the temperament of their child as being synonymous with overactive, defiant, disruptive, inattentive, aggressive, impulsive, or negatively emotional (Campbell, 1995; Fabes et al., 1999; Hughes et al., 2000; Rothbart et al., 1994).
3. In response to interview question 3 (See Appendix E), parents described their child's response to being asked to do an activity that he doesn't want to do as being synonymous with defiant, disruptive, inattentive, aggressive, impulsive, negatively emotional (Eisenberg et al., 2003; Kochanska et al., 1996; Kochanska et al., 2001; Kuczynski & Kochanska, 1990).
4. In response to interview question 7 (See Appendix E), regarding how their child responds to being asked to stop an activity because it is clean-up time or lunch time or the end of the day, parents described their child's response as being synonymous with defiant, disruptive, inattentive, aggressive, impulsive, negatively emotional (Cole et al., 2003; Kochanska et al., 1996; Kochanska et al., 2001; Kuczynski & Kochanska, 1990; Reed et al., 1984; Stifter et al., 1999).
5. In response to interview question 13 (See Appendix E), parents described their child's response to a difficult task as synonymous with defiant, disruptive, inattentive, aggressive, impulsive or negatively emotional (especially showing anger, frustration or sadness) (Cole et al., 1994; Eisenberg et al., 2001; Gilliom et al., 2002; Kochanska et al., 2001; Stifter et al., 1999).

6. During the videotaped observations, the child displayed undercontrolled behavior in terms of overactivity (e.g., frequent movement between activities, running or shouting inside the preschool room), disruptiveness or rule-breaking (e.g., talking and moving during circle time, using toys or art materials inappropriately), inattention (e.g., difficulty in stopping and listening to instructions, short-lived engagement in activities), aggression (e.g., hitting or pushing in line ups or during play, taking toys from peers), impulsivity (e.g., blurting out during circle time, quick and excessive reactions during peer play) or general negative emotionality (e.g., sudden expressions of anger, outbursts, crying) (Campbell, 1995, 2002; Eisenberg et al., 2001; Fabes et al., 1999; Hughes et al., 2000; Rothbart et al., 1994; Zahn-Waxler et al., 1994).

As noted in the criterion listed above, other leading researchers in the field of preschool children's regulatory and social behavior have utilized the concept of dysregulated and undercontrolled behavioral styles. These researchers have selected their participants based on a number of methodologies, including behavior checklists, parent and/or teacher ratings or reports, researcher observations of play or interactions. In the present study, parental descriptions and observations of play are used for identification of undercontrolled behavioral styles. Caspi and Silva (1995) have argued that a child's behavioral style may generate particular patterns of responses from others, and they suggest that these responses can preserve or intensify the child's behavior pattern. As such, the adults' perceptions of the participants' behavior are a significant indicator of the children's current patterns of interaction with others. It is also important to note that this study's criterion-based selection is not intended to specifically identify children who display clinically significant externalizing or internalizing behaviors (as might be identified with

formal behavior rating scales). Instead this researcher is concerned with those preschool-aged boys who exhibit atypical behavior and who are at moderate risk for later behavior problems. Hughes et al. (2000) suggested that this continuum approach (as opposed to a diagnostic approach) can provide valuable information about the processes which contribute to later maladaptive or antisocial behavior.

Instrumentation

The research protocol for the larger study included three instruments for data collection: a parent interview, a parent focus group, and a videotaped observation of the child during preschool. This study employed data collected from the interview and videotaped observations.

Interviews

The individual interviews with participating parents were conducted individually with one of the graduate research assistants, either at the preschool or at the parent's home. The duration of the interview was 30 to 60 minutes, and was structured with a set of 18 open-ended questions (See Appendix E). The questions were structured to begin broadly, and then parents were encouraged to use descriptive, real-life examples of their children's self-regulating behaviors in initiating, modulating and ceasing behaviors (Kopp, 1982). Prompts encouraged parents to include the physical, emotional, verbal, and moral aspects of their child's behavior. The interviews were tape recorded, and documentation was labeled with the participant's number. At the outset of the interview, the interviewer read a script which reassured the parent of confidentiality and restated the voluntary terms of the study. Parents were asked to complete a demographic sheet at this time (See Appendix F). As a method for gaining trust and truthfulness from parent responses, the parents were engaged in a conversational manner and the interviewer conveyed naivety on the topic at hand (Shank, 2002; Yin, 2003).

Videotaped observations

Videotaped observations were included because the events and contexts can be directly captured and played back for later study. These observations are useful because they do not rely on the caregivers' or parents' perceptions and reports of the children's interactions and therefore can add to the researchers' understanding of children's behavior. The observations of the children's behavior were videotaped by two graduate research assistants, using a digital video camera, in 30 minute segments for each child. The use of a videocamera naturally delimits "what is photographed, when, and from what perspective" (Ratcliff, 2003), and thus within the 30 minute videotaped segments, it can not be assumed or implied that every detail of the child's behavior and interaction is captured. The sequence of these observations was essentially random, although child attendance and convenience of play location were factors in the progress of videotaping. There was often a natural need to relocate between rooms or onto the playground, so the segments were not always taped as a continuous block of time. However, this video data does permit the researcher to "examine the interweaving of talk, gesture and expression" (Silverman, 2000, p. 46).

Data collection

General Procedure

Observations and interviews occurred within each of the 7 preschools, in the order that the preschools provided permission. Data collection procedures for the larger grounded theory study of early childhood self-regulation (Boyer, 2004) began in October, 2003 and were completed in June, 2004. The procedures within each preschool continued for 2 to 4 weeks, depending on the rate of parent participation within the preschool. The videotaping and parent interviews were conducted concurrently, and the focus groups were the final step in each preschool's process.

Multiple sources of data were used in the larger study, and are also employed in this study in order to strengthen the final propositions resulting from the data (Gall et al., 2005).

Videotaping

The intention of this videotaped element of the data collection was to capture children's natural behaviors within the preschool environment, during solitary play, peer interactions, and educator or adult-led activities. The goal was to gather this descriptive behavioral data as an outside observer and therefore the researchers did not get involved in the preschoolers' activities or interactions unless it was an issue of safety for the children. The graduate research assistants worked to ensure that the preschool interactions were not impeded or affected by the videotaping, and as a result the data would reflect the children's and educator's free and natural behavior within the preschool setting. In order to avoid conspicuousness, the video camera was atop a tripod and the digital zoom feature was used to record from a distance. The tripod was relocated in the room only if necessary to obtain a clear view of the child's activity. By maintaining this distance, the normalcy and natural flow of the interactions were preserved but the quality of the recorded verbal exchanges was occasionally diminished. Ratcliff (2003) reports that children can be intimidated by the camera and tripod, or conversely that children "made faces, grinned, used exaggerated movements... and even enacted drama for the camera" (p. 115). However, in both the present study and in Ratcliff's research, the children's reactive behavior was infrequent following the first few days of videotaping. It seems that the camera and the researcher became a 'part of the background'.

At the onset of videotaping within each preschool, the graduate research assistants were introduced to the preschool classes by the Early Childhood Educator (ECE), which minimized the children's reactivity to strangers and to the video camera equipment. Using a class list of

participating children, the graduate research assistants then randomly selected the order of the videotaping sessions on the day of the observations according to the natural play patterns of the children. This observed segment was identified on the videotape with the number that was assigned for each family, ensuring that the child's name was removed from the data. When the graduate research assistants started videotaping each and every day, the child and the child's peers were asked for consent. There were several instances where children declined participation in videotaping at that time. If a peer in the play-group did not consent, the graduate research assistants would either (a) pause the videotaping until the non-consenting peer left the situation, (b) move the videocamera so the peer would not be in the camera's view, or (c) select a different child and group of children to observe.

The flow of the videotaping was dependent upon the preschool activity, including the preschool's schedule and routines, educator's requests, time constraints, and the child's needs. For example, the videotaping may have been paused if the child left for the bathroom, if the child decided to play in an area where the camera view was blocked, or as the class moved to the outdoor playground. Each child was videotaped for a total of 30 minutes, as he or she moved through settings and engaged in interactions with peers and adults. The focus on the camera was concentrated on the child, and naturally included peers or adults who engaged with that child. During these observations the child's behavior reflected self-regulatory strategies within the initiation, modulation and ceasing of each activity. Each segment may have included a wide variety of preschool activities such as outdoor and indoor play, peer play, group interactions (i.e. circle time), art activities, silent book time, snack time, and ECE/ parent interactions. Since the emotional and physical qualities of the context can shape the child's behavior during the observation, data collection also included observations recorded within the graduate research

assistants' journals and fieldnotes regarding the preschool environment, routines, expectations and events. Relevant school information and school philosophy leaflets were also collected to help clarify the context of the data.

Parent Interview

The parent interview sessions were conducted individually, according to parent availability, and were primarily situated in a quiet space within the preschool building, which was arranged by the preschool. Most frequently, mothers attended the interview and the fathers were also encouraged to participate. However, due to constraints on parents' schedules, some interviews were conducted at the parents' homes or work office. The child was not present for this interview, except under exceptional conditions where the parent arranged for the child to be occupied in play beyond earshot of the interview. More frequently, younger siblings and especially infants, were present during the interview. To avoid these circumstances, childcare was provided by the second research assistant when available. For each parent interview, the researcher obtained ongoing consent of the parent participant and ensured their understanding of the anonymity, confidentiality and voluntary nature of the study.

The interview questions (Boyer, 2004) gathered parents' descriptions of their child's behaviors in do and don't contexts (Kochanska et al., 2001), and in difficult or frustrating situations (Zahn-Waxler et al., 1994). Probes were given to encourage parents to provide detailed examples and descriptions of their child's behavior. In addition, each question about the child's behavior was followed by questions concerning the parent's response to this behavior, in terms of how they help their child to learn to self-regulate in the situation.

Data Analysis

Yin (2003) explains that a successful case study analysis involves “relying on theoretical propositions, setting up a framework based on rival explanations, and developing case descriptions” (p.109). By developing clear strategies for analysis, and using a transparent chain of evidence, Yin contends that the case study researcher can effectively build compelling conclusions. Yin uses the terms *internal* and *external validity* to describe the rigorous qualitative process that supports trustworthiness and authenticity of the findings. Therefore, the data analysis for this case study will be based on Miles and Huberman’s (1994) sequential procedures for qualitative analysis, involving three major steps which are outlined below: data reduction, data display, and conclusion drawing and verification.

Data Reduction

In qualitative research, data reduction often begins with the inception of the study and continues through data collection and verification of conclusions. Miles and Huberman (1994) suggest that “analytic choices” in data reduction involve focusing, sorting, and organizing data through summaries, selection or quantification. Theoretical propositions from relevant literature help to shape both the data collection procedures and the strategies for analysis (Yin, 2003). For this case study, data analysis began after the data collection was completed for the larger study. The first level coding of the videotaped data was completed as part of the larger self-regulation project, where the videotaped observations were analyzed according to the child’s use of self-regulatory strategies within the initiation, modulation and ceasing of each behavior. This involved the use of a chart with descriptive categories to record children’s self-regulatory behaviors in context, including interactions with adults and other children (See Appendix H) (Boyer, 2004). The use of a systematic coding procedure such as this protocol, allows for reliable

and replicable analysis (Gall et al., 2005). Coding is a “selective process” where the researcher makes choices for inclusion and exclusion of information (Miles & Huberman, 1994, p. 56). Codes are operationally defined, labeled conceptually, and are attached to pieces of data from the observation. Criterion-related reliability for this coding was obtained with the primary researcher, Dr. W. Boyer, and two graduate research assistants. In addition, inter-observer reliability between research assistants was confirmed after every 10 observations. Intra-observer reliability for the research assistants was verified following every 5 observations. Reliability was confirmed at an 80% accuracy, which is considered to be a high degree of agreement (McMillan & Schumacher, 2001).

Yin (2003) explains that interpretational analysis involves this coding, classification and sorting of data allowing coherent themes, patterns and constructs to emerge from the data. Pattern codes focus on themes, explanations, relationships among people, and other theoretical constructs (Miles & Huberman, 1994). Miles and Huberman caution that the data must be clustered in a way that maintains its connection to the original context. In this case study, the coded chunks of data have been further examined, and clustered together to form patterns, where the researcher has organized categories and reflected on the frequencies of behavior within these categories. For example, the child’s responses within peer interactions were originally coded as either prosocial (*affiliation or interpersonal support*), *avoidance*, *negative emotion* or *constructive coping*. When the researcher examined these coded segments to determine frequencies and patterns, the context of the situation was considered to reveal themes within the children’s behavior.

Although the video analysis is theory-driven, the researcher cannot predict all the factors that may emerge as significant to the meanings and patterns within the behaviors (Ratcliff, 2003).

This case study analysis will certainly give emphasis to the context of the behavior or interaction, as the pattern analysis will include notations on the physical context, the task or problem, the peer context (age/ gender of peers; type of play- solitary, parallel or cooperative), the emotional situation, and the child's use of self-regulatory strategies. However, it is important in video analysis for the researcher to continue to be open to the holistic nature and meaning of the videotaped observation (Collier & Collier, 1986).

This case study uses Erikson's (1992) *microanalysis* as one part of the qualitative analysis, as suggested by Collier and Collier (1986). Microanalysis is intended to describe the *how* of behavior by repeatedly examining sequences of behavior and by noting differences and consistencies of events and patterns. This five-step analytical approach has been recommended for use in qualitative video research (Ratcliff, 2003). First, the researcher examined each behavior and case holistically. A case summary form was completed for each case, wherein the researcher's initial thoughts and observations about significant elements within the data was recorded for further reflection and comparison between cases. Second, the researcher noted significant shifts in activity which mark the boundaries of each behavior (and which therefore reflect the child's responses to initiating, modulating and ceasing of each activity). Third, the researcher watched for consistencies and patterns within each of these three parts of the child's behavior. Within the cases examined in this study, contextual elements, including peer and adult interactions, contributed to the structure of the child's responses. At this point in the pattern analysis, the researcher reviewed the original videotaped segments and wrote memos to clarify emerging themes. At this time, the researcher often reflects upon the propositions arising from the data and may realize the need to partition themes/patterns/sequences into smaller coherent components, such as the child's expression of anger or the child's sharing behavior. The

researcher often bases these decisions on the “plausibility” of the conclusion, but must be cautious to substantiate these intuitions by clustering and counting the patterns within and across cases (Miles & Huberman, 1994, p. 246). Thus, in the final stages of the microanalysis, the researcher observes events and behaviors from other cases, and clusters and documents parallel or exceptional events. This comparison is used in the process of conclusion-drawing and verification detailed below.

The goal of this study’s analysis is to discover patterns in each child’s behavior based on the videotaped observations, and to group these patterns into a meaningful description. Because preschoolers’ self-regulatory strategies have not yet been clearly identified and operationalized, this qualitative analytical approach utilizes a theory-driven framework to create a description of children’s interactions and behavior which may help in the creation of a developmentally appropriate evaluation for preschoolers’ self-regulation.

Data Display

The use of displays in qualitative data analysis enables the researcher to “compress and order data to permit drawing coherent conclusions, while guarding against the overload and potential for bias” (Miles & Huberman, 1994, p. 141). The first instance of data display used by a qualitative researcher should be the case summary form, where the researcher answers a set of questions designed to summarize the important information provided by the participant or case (for an example, see Miles & Huberman, 1994, p. 53). During the sorting and coding of the data, the researcher will make choices in the design of the display, that is the categories and content for each row, column, and cell in the display. Accounting for all the evidence, the data display ensures coherent analysis of patterns and themes and allows the researcher to focus on the most significant aspects of the case (Yin, 2003). In this study, the coded data displays for individual

cases were separated and combined into a display with analogous coded segments from other cases. Using this rearrangement of data, the researcher was able to visually and thematically cluster patterns and contextual variables.

This case study analysis also made use of Miles and Huberman's (1994) "conceptually clustered matrix", which employed the patterns that emerged from the behaviors and interactions within the first level coding charts (p.127). Using the conceptual matrix as a tool for analysis, the researcher has been able to read across the rows and columns to discover potential relations between variables, to determine the similarities of behaviors within the boundaries of the activities, and to make comparisons between separate behaviors as well as between cases. The purpose of the matrix displays has been to overview the patterns within and between cases, and this format has provided (a) the display of relevant behaviors of all cases on one sheet, (b) an initial comparison between behaviors and cases, (c) directions for further clustering of variables, (d) information on content themes for cross-case analysis (Miles & Huberman, 1994).

Conclusion Drawing and Verification

As a final step in the qualitative analysis, the researcher must connect the findings to a theoretical framework related to the study of this phenomenon. Creating a chain of evidence for analysis, the researcher has observed each child's behaviors, documenting the events and patterns within, through coding and microanalysis. Next, within the broader process of analysis, the researcher must make conclusions about the events and behaviors by presenting a prudent, contextual understanding (Collier and Collier, 1986). Using "eliminative induction" the researcher gains this understanding by using additional cases to compare and test alternative explanations (Miles & Huberman, 1994, p. 261). The researcher will use matrix displays and memos to document a chain of evidence, and demonstrate that (a) several cases display the

factors independently, (b) direct or indirect patterns are clearly evident, and (c) the claims account for the contradictory evidence and rival interpretations. Miles and Huberman (1994) advise that these comparisons and conclusions must be plausible, meaningful, and “practically significant” and must be consistent with other information known about the case (p.254). Yin (2003) emphasizes the use of the researcher’s awareness of the current thinking on the topic, as well as the researcher’s own prior, expert knowledge in drawing and verifying conclusions. A chain of evidence which documents a pattern *across multiple cases* (within different circumstances) substantiates the final propositions and presents a theoretical replication (Yin, 2003). The results from this multiple case study draw conclusions that support Eisenberg et al.’s (1993, 1999) theory of the interactional contribution of regulatory control and emotional arousal in the composition of social behavior.

Summary

Through a discussion of the qualitative approach and case study design, the choice of procedures and methodology for this research is clear. In providing details on this study’s purposeful sampling, instrumentation and data collection, the procedures are transparent and demonstrate the researcher’s attentiveness to consistency, objectivity, and reliability. As a significant aspect of research with children, this research design explicitly addresses the ethical considerations of studying preschoolers and their families. The purpose of this study is to describe the self-regulatory strategies used by preschool boys who exhibit undercontrolled behavior. This study’s analytic process provides a thick description of these children’s observed behaviors through the use of coding techniques and conceptual displays. Using theoretical replication within multiple cases, this study aims to present findings with a significant “truth value” (Miles & Huberman, 1994, p. 278), where the propositions are credible and theoretically

valid. With a multiple case study design, the researcher hopes to shine a “lantern” on children’s self-regulation, which is an unexplored yet central aspect of early social development.

Clear and careful reasoning, from the lantern perspective, is flexible and creative.

Lanterns are mobile and so is the lantern reasoner. We pick a place to start, because we must start somewhere. We do not convince ourselves, however, that we already have a complete understanding of anything. We use our lantern tools to move our minds around, so that we can look for understanding in places where the light of reasoning has not shone before... Lanterns are, by definition, for the dark corners (Shank, 2002, p.125).

Chapter 4: Results

Overview

Chapter 4 focuses on answering the central research question of this study: How do boys, ages 4-6, who exhibit undercontrolled behaviors, employ self-regulation strategies during natural play experiences within the preschool environment?

The first portion of this chapter includes a description of each of the 6 individual preschool-aged boys and a brief synopsis of their observed play and interactions. The observational experience of these children's natural play is also explored in terms of across case and within case discrepancies. Finally, Chapter 4 addresses the following three specific sub-questions about the self-regulatory behaviors observed within these case studies:

- 1) What prosocial self-regulatory strategies did these children use within the observed peer interactions?
- 2) How did these children initiate activities during the observations? What self-regulation strategies did they use in entry behavior with peer play?
- 3) How did these children use language for self-regulation within observed interactions with peers and with adults?

The purpose of this study is to describe the children's behavior holistically, including the contextual elements of their self-regulatory behavior. It is beyond the scope of the study to make causal or correlational claims, or to make conclusive arguments about preschool children's behavior. To some degree the researcher draws conclusions within this study from the children's behavioral and contextual patterns, both within each case and across multiple cases, which are related to the research literature reviewed in Chapter Two. This chapter will describe these

patterns and will provide illustrations from the case studies, using thematic categories and clusters that arose from the observations.

Participants

The following descriptions of the participants include excerpts from the parent interviews to support the selection of these cases. The children have been given fictitious names to protect their anonymity. The demographic information and ages of the participants have been reported to offer a more complete picture of the cases. Most importantly, each child's summary contains a brief description of the videotaped observation, with details of the number of behaviors observed and comments about the nature of the child's play and interactions.

Demographics

The participants were selected from 4 of the 7 preschools, representing various neighbourhoods, pragmatic approaches, and religious and fiscal structures. The range of ethnicity was much more limited in scope, with 5 Caucasian participants, and 1 bi-racial child of Arabic and Caucasian ethnicity. The children's family structures exhibited some diversity as 1 child lived in a single parent household, 1 child's parents had separated and the other 4 children lived in households with two parents. These families ranged in socioeconomic status, from lower-middle to upper-middle class families. The children ranged in age from 4 years and 5 months through to 6 years and 4 months, with an average age of 4 years and 11 months.

Justin (Child 01)

In the 30-minute natural play observation scenario, Justin was 4 years and 5 months in age. His temperament was described by his parent as "energetic", "extremely creative, but very stubborn, very willful", and as having "difficulties in following directions". The parent also described situations where Justin will "either go rigid ... or he'll deliberately fall over" in

response to being asked to do something he doesn't want to do. As well, the parent described Justin's response to engaging in a difficult task by saying that "he has a very low frustration level". During the parent interview, the parent clearly indicated frustration with her child's persistent difficult behaviors. In the videotaped observations, Justin was noted to demonstrate overactivity, disruptiveness, aggression, impulsivity and frequent negative emotionality. He was disruptive and impulsive during an unstructured transition period. Also, during the observation, Justin tried to engage peers and tried to play cooperatively, but was quickly frustrated by peer interactions and responded impulsively. Overall, this child's play was primarily solitary or parallel during the 30 minutes, with about 2 minutes of cooperative play at the end of the observation. Justin engaged in four behaviors during the 30-minute observation, and had six peer interactions and six interactions with adults. During these interactions with others, the researchers observed three incidents of Justin's noncompliance with the ECE, two negative peer interactions and one positive peer interaction.

Silas (Child 07)

In the 30-minute natural play observation scenario, Silas was 6 years and 4 months in age. His temperament was described by his parent as "very active and inquisitive, very curious, very...kind of grumpy". Throughout the parent interview, the parent described several situations where Silas typically responded with aggression, defiance and negative emotionality. For example, when he was asked to stop an inappropriate behavior, the parent explained that Silas would "feel more angry as I'm telling him its not okay to do that and his emotions get really heightened and he's trying to tell me what happened and... justify his hitting somebody". The parent also explained that "when he's offended... he'll lay down on the floor and close his eyes and lets go- really, really shut(s) himself off to everything." In situations where this child was

asked to do an activity he did not want to do, the parent explained that “he probably gets angry, whiny, grumpy, runs away, runs around” or he will “stomp his feet or try and hit”. In the videotaped observations, Silas was noted to demonstrate significant overactivity and inattention. Silas engaged in 13 behaviours during the 30-minute observation, as he quickly moved from area to area, and activity to activity without any real engagement with the toys or games. In the researchers’ notes, it was observed that Silas may have been having difficulty waiting for an upcoming activity (circle time), and was impatiently passing the time. The longest behavior, which lasted 7 minutes, was when he was reading in the book corner; even during this activity, Silas looked at six different books. During the observation, Silas had four peer and five adult interactions, all of which were positive or compliant. Silas engaged in only one brief cooperative peer interaction during clean up, and was otherwise engaged in solitary play (11.5 minutes), and parallel play.

Jared (Child 36)

In the 30-minute natural play observation scenario, Jared was 4 years and 6 months in age. His temperament was described by his parent as “extremely active and... extremely enthusiastic about things and... extremely upset about other things”. The parent explained that Jared’s response to difficult tasks was to get “really frustrated really very quickly” and to “sometimes hit things or pull things”, “just walk away or step on or throw (it)” or “he won’t let other people play it”. The parent also shared that “He gets excluded a lot because he likes to sort of hang out on his own... just playing games”. Through the interview, the parent described incidents of Jared’s impulsivity, defiance, overactivity, aggression and negative emotionality. During the interview, the parent added that Jared was diagnosed as Attention Deficit Disorder (ADD) and was undergoing additional review regarding a possible diagnosis on the Autism Spectrum. During the

videotaped observations, this child demonstrated overactivity, disruptiveness, inattention, impulsivity and aggression. Jared played somewhat inappropriately, and rambunctiously, and became impulsive and aggressive when he was over-excited or frustrated. Jared engaged in six behaviors involving the ECE and several different peers. He was primarily involved in parallel play and attempted to engage or cooperate with peers within every behavior. During seven peer interactions, this child experienced three positive peer responses. Although there were two episodes of Jared's non-compliance with the ECE, he generally demonstrated compliance within the other eight interactions with the ECE.

Rohan (Child 77)

In the 30-minute natural play observation scenario, Rohan was 4 years and 9 months in age. His temperament was described by his parent as "high energy", and "easily agitated". The parent explained that Rohan responded with "a pout, a frown... a 'uhhhmm'" or he will "scream, or say I don't like that, I don't want to" when he was asked to do something he did not want to do. When Rohan was told to stop an inappropriate behavior, the parent reported that "he'll laugh, he'll lie, he'll say I didn't do it, he'll run away, he'll hide". During the interview, the parent conveyed that Rohan can be a perfectionist, and that their interactions were littered with "battles" and anger. The parent interview responses indicated descriptors of this child as overactive, impulsive, defiant, and negatively emotional. The videotaped observation showed Rohan's behavior as overactive, disruptive and impulsive. During the peer play, Rohan used a loud voice, and played inappropriately and very actively with toys. In the field notes, the researcher reflected upon this child's play subsequent to the videotaping, and noted that his pretend play was "colored with name-calling and some aggressive behavior". During the 30-minute videotaped observation, Rohan engaged in three separate activities. He had five adult interactions and was

positive and not defiant with the ECE's during these interactions. Within four peer interactions, Rohan's peers positively acknowledged his interaction although they seldom engaged in his pretend play.

Garret (Child 90)

In the 30-minute natural play observation scenario, Garret was 4 years and 11 months in age. His temperament was described by his parent as "fairly even", but that "he seems to swing around a lot between being very, very kind and then pushing things... and being a little bit aggressive". The parent explained that "he gets wound up in imagination" and that "he can let a situation for him, escalate... where he gets completely out of control". The parent summarized Garret's temperament as "volatile". When he was asked to do something he did not want to do, the parent described that Garret would "often throw himself on the floor, kick his legs, and whine... but he can flip around right away... (and) he'll just do the thing". In response to a difficult task, the parent reported that Garret would "fling himself about... or he'll moan", and that "he's a perfectionist- he'll get really cross and do it over again and he'll be quite hard on himself". Overall, the parent interview indicated that this child can be described as impulsive, defiant and negatively emotional. During the videotaped observation, Garret's behavior was noted to be rule-breaking, aggressive, impulsive, and negatively emotional. Within the 30-minute observation, this child engaged in two activities, which included eight peer interactions. Garret's peers responded positively during three interactions. During the remaining peer play, Garret repeatedly had problems sharing and became aggressive and negatively emotional with peers. He had two positive interactions with the ECE and three instances of rule-breaking and negative emotionality within adult interactions. Garret engaged in parallel or pretend play during

most of the observation, and on several occasions, attempted to engage his peers in his pretend play.

Brody (Child 92)

In the 30-minute natural play observation scenario, Brody was 4 years and 8 months in age. His temperament was described by his parent as “generally very easy-going, but he does have a temper... he can get quite frustrated”. The parent also described Brody as “fairly quiet”, “a very sensitive little kid” and “he tends to like to play on his own”. When Brody was asked to do something he did not want to do, the parent reported that he would “look agitated” and that he showed “frustration” and “impatience”. The parent expressed that “for the most part he knows what’s appropriate... but his emotions sometimes get the better of him just because he’s frustrated”. During difficult tasks, the parent reflected, “He does tend to give up quite easily and ask for help”. The parent also reported that when Brody was asked to stop an activity, he needed “lots of warning because... he tends to just sort of block out everybody and everything”. Within the videotaped observation, this negative emotionality was not observed but there were several instances of rule-breaking, and demonstrations of inattention and a preference for solitary play. During the 30-minute observation, Brody engaged in five separate behaviors which mostly contained solitary or parallel activities or adult interactions. Brody had seven adult interactions all of which occurred during a teacher-led group activity, and he demonstrated four instances of non-compliant behavior with adults when he did not follow expectations and when he wandered away from the group. At the beginning of the observation, Brody seemed to attempt to join his peers’ activities, but had no successful interactions. Within the last observed activity, Brody directly engaged a peer twice in a negative situation, when he was taking a toy away from that peer.

Observations of Natural Play

Each of the 6 children selected for this case study are distinct in their temperament, behavior, emotions and goals. However, these 6 children had similarities within their temperament description and observed play behaviors and as such, the researcher was able to observe patterns that hold true within and across cases. However, during the observation of natural play, it was expected that certain limitations to similarity would be evident because of the individuality of each child, such as the number of behaviors and interactions observed for each child. The following table presents each child's total number of observed behaviors, as well as the number of peer and adult interactions observed during the 30 minute naturalistic videotaping session.

Table 1

Peer and Adult Interactions Within Observed Behaviors

Child	Observed behaviors	Interactions	
		Peer	Adult
01	4	6	6
07	13	4	5
36	6	7	10
77	3	4	5
90	2	8	5
92	5	2	7

As demonstrated in Table 1, it would be erroneous for the researcher to make correlative statements regarding the number of behaviors and the number of interactions. These types of differences arise from the boys' individual temperaments and goals, and thus are essential elements of this discussion of self-regulation. For example, Child 92 (Brody) had no instances of

Negative Emotion or Aggression within the observation but Child 36 (Jared) engaged in two Aggressive responses; in the analysis the researcher must take into consideration the amount of peer interaction that each child experienced. As well, significant differences were observed in the amount of language that each child used, as discussed later in this chapter. Temperamental differences, such as these, affected the children's use of self-regulatory strategies during play and will be represented in this analysis.

Prosocial Strategy Use within Peer Interactions

During the first level coding of the videotaped observations, the children's self-regulatory behaviors and responses within peer interactions were sorted into specific descriptive categories (See Appendix H). These responses were coded as prosocial (affiliation or interpersonal support), constructive coping, avoidance, or negative emotion (including aggression). For this portion of analysis, the researcher is focusing on the positive behaviors that children may use within peer interactions, those being prosocial strategies and constructive coping strategies. In determining the frequency of prosocial strategy use within the observations, the researcher has discovered that every one of these undercontrolled boys utilized prosocial strategies. In fact, as displayed in Figure 1, the total occurrence of prosocial and constructive coping strategies was more frequent than the use of Negatively Emotional or Aggressive responses across all the children's interactions.

In examining the patterns within- and across-cases, it is interesting to note that every prosocial and constructive coping response within peer interactions involved toys or books as central to the interaction. Also, these responses occurred within three peer contexts: (a) The child was trying to engage with peers, (b) the child or the peer does not want to share a toy, and (c) the child was attempting to help a peer. Although the peer responses to the children's prosocial

strategies were generally not negative, there were several instances where the child and/or his peers misinterpreted intentions, and the peers consequently withdrew from the interaction. These patterns of prosocial and constructive coping behavior were observed across cases, and a sampling of these episodes are provided as illustration.

Table 2

Conflict Strategies Across All Adult and Peer Interactions

Child	Conflict Strategies						Total Observed Interactions
	PRO	NEG	AGG	AVD	CONS	ASSERT	
01	4	2	2	2	1	1	12
07	1	0	0	1	3	1	9
36	5	2	2	2	2	4	17
77	3	1	0	2	3	2	9
90	7	6	3	2	2	6	13
92	3	0	0	2	2	5	9
Totals	23	11	7	11	13	19	

Note. Abbreviations for conflict strategies listed in Appendix I.

Child 77 (Rohan) was seen circling the table, singing “She’ll be Comin’ Around the Mountain”. Several peers were playing at the table, pretending with plastic food and dishes. When Rohan began to use the plastic pizza cutter on a boy’s head, the boy asked, “Are you cutting my hair?” Rohan continued this play until the boy said “Ow”, and then rubbed the top of the boy’s head instead of using the pizza cutter. His constructive coping response allowed him to continue playing within this peer context. In the same way, Child 90 (Garret) used a constructive coping response to allow a continued peer interaction. Garret was playing alone on the floor

when a peer came nearby, pretending to fly the toy he built. Garret made airplane noises and held out his toy to “battle” with his peer. When the two boys were playing, Garret’s toy fell apart; Garret did not get upset but instead fixed the toy and continued with the pretend play.

Later on, Garret experienced a misunderstanding when he used a prosocial strategy, attempting to help another boy during clean-up. In this situation, Garret put away his own toys and then reached for a toy that his peer was setting on the shelf. The toy fell apart as they attempted to put it away and the boy turned toward Garret, yelling and making a fist. Garret walked away silently, repeatedly looking back at his peer, seemingly confused. Similarly, Child 07 (Silas) tried to help his peers during clean-up. First, Silas saw a peer trying to carry a large car garage so he quickly dropped his toy and joined in to help. When Silas touched the toy, the peer set it down and so Silas moved away. After he left, two peers then continued the job. Next, he began to carry a toy castle toward the shelf but a girl approached, told him where it should go and began to lift the toy. Silas put his hands behind his back, and without a word, walked away. Both Garret and Silas initiated a prosocial interaction and were misunderstood in their intent to help. However, neither of these boys attempted to explain his purpose.

Generally, these preschool-aged boys did use some language within their prosocial behavior, but it does seem evident across the 6 cases that the amount and use of language may not have been sufficient to communicate effectively or engage positively with peers. There are two predictable exceptions to the use of language within the children’s prosocial interactions. Child 92 (Brody) did not use language when he joined in to help his peers roll a tunnel across the playground, but this is expected as he was described and observed as using very little language overall. Child 07 (Silas) did not use language in his constructive coping responses to peers, but in these situations Silas was not attempting to engage with his peers. For example, when Silas

picked a glove off the floor and began playing with it, a nearby peer called out “Hey! I was going to use that.” Silas responded with a constructive coping behavior, by finding a different glove and then continuing his solitary play.

Self-Regulatory Strategies Used to Initiate Peer Play

In this section of analysis, the children’s initiation behavior is examined using the within-case memos as a foundation. The understanding of emerging patterns is improved when the data is reported considering the context of the videotaped observations, and especially the type of play in which the child was involved. When the initiation behavior of these 6 boys was explored across cases, the data indicates two distinct clusters: (a) Children who attempted to engage with their peers (Child 01, 36, 77 and 90), and (b) children who were observed in mostly solitary play contexts (Child 07 and 92). Several themes arose from these two clusters of child behavior. Each child’s personal traits regarding activity level and language use were significant to their initiation strategies. It was also important to consider the child’s basic interest in attempting peer play or offering help, and whether or not the child would observe his peers before joining into their play. In reviewing the videotaped segments, the researcher also noted the significant impact of the children’s inappropriate play on their peers’ reactions. The next sections of discussion provide individual case descriptions to illustrate these clusters, followed by a section examining the across-case themes and patterns of initiating behavior.

Within-case Descriptions: Attempts to Initiate Peer Play

Child 01 (Justin) typically attempted to start new play instead of joining peer play in progress. Justin invited peers to join his play, but was unsuccessful on both occasions. Prior to snack time, Justin engaged in a significant amount of inappropriate behavior (bumping into tables, falling down, making noises). At this time, he seemed to look to his peers for laughter and approval.

Later, Justin did follow his peers as they ran onto the playground, but these children began their own game and Justin sought assistance from the ECE. Justin wandered between behaviors on the playground, but didn't seem interested in observing his peers or joining their play. Twice, when peers attempted to join his play with a car, Justin got upset and pushed them away. It seemed that their attempts did not fit with his intentions at that time, but soon after Justin allowed a boy to join him when he wanted to give someone a ride in the car. Justin used primarily Physical, and Language strategies to initiate behaviors.

Child 36 (Jared) showed a continuous interest in peer play, and was quite social and talkative. He frequently moved to new situations and new games, and attempted to interact with nearby peers. He often modulated his behavior by shifting his play, such as changing books or using a toy in a different way. However, sometimes Jared's play evolved to inappropriate behaviors, such as jumping around or pushing with pillows. In these situations, his peers withdrew from the interaction. When his attempts to engage peers were disappointing to him, he responded with strong negative emotion or sought ECE support. For example, at a play table when Jared's peers did not respond to his "silly" behavior (jumping around, making noises and rolling his head), Jared moved to the ECE and asked for a hug and kiss. Later in the segment Jared called out "Does someone want to play?" and, when nearby peers didn't respond, he stomped his foot angrily and eventually began to push his peers with pillows. Although Jared used language frequently and offered help to others, he often didn't stop to observe his peers' ongoing play but moved quickly between activities. During solitary and parallel play, Jared showed his ability to independently initiate new activities. Jared used mostly Physical, Language, Problem-Solving strategies to initiate behaviors.

At the beginning of the segment, Child 77 (Rohan) was excited, active and talkative. At first, Rohan was singing and dancing around the table, putting hats on his peers and trying to start a new game. When they didn't engage in his play, he tried to join into their pretend play by talking, bringing toys and asking questions. At times, Rohan got a bit rambunctious and silly, laughing at his own play. Finally, one of his peers withdrew from his inappropriate play and reported it to the ECE. Unfortunately, in reaction to a negative response from his peers, Rohan sought adult interaction, and spent the remainder of the observation reading books with the ECE. Rohan did allow peers to join into this activity, but he tried to control the play by determining which books they read in the group. Rohan's initiating behavior was comprised of mostly Physical and Language strategies.

Child 90 (Garret) was involved in parallel play at the beginning of the observation, building a track with wooden blocks and cars. During this play, Garret was observed as being quite assertive and aggressive toward another boy, taking blocks away from him and eventually getting into a physical fight. It seemed that Garret wanted to control the way the track was being built. In this incident, and in subsequent peer interactions, Garret used very little language to communicate his needs or wants. After this conflict, the ECE moved Garret to another location where he was able to independently begin solitary play. Garret was not observed to be an overactive child, and so he exhibited a lower number of activities and decreased use of Physical initiation strategies. Garret initiated most peer interactions within the second behavior, as he continually attempted to engage nearby peers in pretend play. He would make "flying" noises and hold out his toy to "battle". However, when he was unsuccessful in an attempt to enlist a peer into this game, he reached out and angrily hit the girl with his toy. At times Garret allowed peers to join him and to share his bin of toys. In the two central behaviors of the observation,

Garret's initiation did not include Language, but focused on Physical and Problem-Solving strategies.

Within-case Descriptions: Primarily Solitary or Parallel Play

Child 07 (Silas) engaged in 13 behaviors during the observation, and as a result, his initiation strategies were primarily Physical. He was observed as using very little Language overall, and he seldom engaged with peers or even toys for any length of time. Silas did use some Problem-Solving strategies to independently initiate activities, such as pulling up a chair to look into the fishtank and using blocks to start building a tower. He also asked for ECE help and approval on three occasions when he was trying to get started with an activity. Silas spent much of his time wandering between activities, sometimes stopping to observe his peers. Silas would begin parallel play, using building blocks or moving to the playdough table. On each of these occasions, he suddenly turned away and wandered around the room. Silas joined peer play once when he followed a group of children as they ran across the playroom, but he did not continue with this interaction. Silas did briefly talk with a peer in the book corner, as they looked together at her book.

Brody initiated activities with Physical and Problem-Solving strategies, and with limited Language overall. At the beginning of the observation, Child 92 (Brody) was playing alone on a bike, watching his peers. Brody's behavior continued to be quite solitary throughout the segment. In the second behavior, Brody was participating in a group activity, where he walked near his parent and frequently wandered away from the group to explore on his own. To initiate within other peer activities, Brody would run toward his peers, stop and watch, but did not speak. Brody frequently sought affiliation with his parent (with hugs and holding hands), and spent very little time engaged with peers during the observation. Once, he joined in with a group who were

rolling a tunnel on the playground but he left the group within the minute and ran back to his parent. Brody's only significant peer interaction was when he took a shovel from another boy as they played parallel to each other at the sand table.

Across-Case Patterns of Initiation Strategies

This across-case discussion presents information demonstrating that these 6 undercontrolled preschool-aged boys frequently did not engage in significant elements of a successful initiation process, and at times these boys reacted with poor emotional self-regulation as a result of their failed entry attempts. According to the research literature reviewed in Chapter 2 of this paper, successful entry into peer play requires the child to first observe his peers in order to understand the play in progress. Next, the child needs to use language and prosocial strategies to share in this peer context, without disrupting the activity. Presented below is an example of a successful initiation recorded during the observation.

Child 77 (Rohan) circled his peers as they pretended in the kitchen play area. He started by happily singing and hopping around the table. At first, he tried to interrupt their play by placing costume hats on their heads. When his peers didn't join his game, Rohan changed his focus and began to join their pretend play by using a pizza cutter and feeding the pizza to a doll. He interacted with his peers briefly, talking to them about dinnertime and asking for a plate. Rohan continued in this play by bringing food to peers, pretending with pieces of cake and calling out to peers, saying "That was yummy," "Eat this cone!" and "Cake time!" His peers seemed to respond positively by accepting the toys and attempting to help Rohan. In this situation, Rohan used several strategies that contributed to his successful initiation of peer play. The success of Rohan's entry likely resulted from his process of becoming aware of what his peers were doing

and his attempts to engage in their game through initial parallel play, use of language and problem-solving, and acts of social assistance.

The earlier discussion of prosocial behavior demonstrated that these boys frequently used Social Assistance, Problem-Solving and Constructive Coping strategies, however this was generally not observable within their initiation of behaviors. Within the first level coding of the videotaped segments, the children's observation of peers during initiation was recorded as Problem-Solving. Child 36, Child 77 and Child 90 did not pause to watch their peers' activity prior to attempting to join into the play. During initiation behavior, these three boys were observed using Problem-Solving strategies only in resolving difficult situations with peers or with toys. The following table displays the children's overall use of self-regulation strategies.

Table 3

Self-Regulation Strategies Used for Initiating Behaviors

Child	Self-Regulation Strategies						Total Observed Behaviors
	PHY	PS	LA	SA	EM	MOR	
01	8	1	6	0	2	1	4
07	14	3	1	1	1	1	13
36	9	4	7	1	2	1	6
77	6	1	3	1	1	0	3
90	3	1	0	0	0	0	2
92	7	4	1	0	1	0	5
Totals	47	14	18	3	7	3	

Note. Abbreviations for self-regulation strategies listed in Appendix I.

Table 3 displays the overall scarcity of Social Assistance used as an initiation strategy by these boys. Only Child 07, Child 36 and Child 77 used any Social Assistance strategies during initiation behaviors, and for both Child 07 and Child 77 this strategy was used within an adult interaction. These boys sought out ECE help to get started with the new play activity. In examining Table 3, it is evident that every child did not employ Problem Solving or Social Assistance as *principal* strategies during initiation.

Language was used during initiation in 5 of the 6 cases. However, it is important to note that in this analysis, Language use was not differentiated according to speech toward adults, peers or self. Although Child 01, Child 36 and Child 77 used a significant amount of Language during initiation, these boys did not communicate with the purpose of joining into their peers' ongoing play. For example, both Child 36 and Child 77 were eagerly talking to their peers, but were inviting peers to join into their own play. Although Child 01 directed most of his Language toward the ECE, he also called out on two occasions to ask a peer to join him. None of these attempts were successful for these boys.

Language use was observed as central to peers' acceptance and understanding of the boys' entry attempts. For example, Child 36 (Jared) attempted to initiate a peer interaction that ended ineffectively because of a breakdown in communication. In this situation, a girl joined Jared at a table and he proceeded to show her his toy, acting silly and making noises. The girl reached over to show him how the pieces fit into the toy, saying "They go in here." Jared pulled the toy away from her, only replying "Hey!". It seemed that Jared's behavior lacked sufficient language use to continue the interaction. The girl stood and watched Jared playing with the toy, and then turned away without another word to him.

In the within-case memos, the researcher noted instances when the children's entry attempts were ineffective. Child 01 (Justin) responded negatively on two separate occasions, physically pushing peers away during the initiation of peer play. Child 90 (Garret) became Aggressive in response to (a) his failed attempt to help another boy, (b) a girl turning away from his attempt to play, and (c) a boy who did not want to play the game that Garret was initiating. Interestingly, Garret did not use any Language to initiate play (or to explain his intent), as previously shown in Table 3. Finally, Child 36 (Jared) seemed upset and became aggressive toward his peers when they didn't respond to his entry attempts. Certainly Table 3 shows that Jared did use a variety of initiation strategies including a significant amount of language. However, Jared often behaved somewhat inappropriately and he usually didn't stop to observe his peers' ongoing play. Therefore Jared remained on the periphery of his peers' interactions.

All 3 participants who displayed Negative Emotion and Aggression to their peers, as shown in Table 4, used these strategies subsequent to their unsuccessful initiation with peers. Although the 3 remaining children experienced a lack of success in joining peers, these boys did not respond with Aggression and Negative Emotion. It is important for the researcher to account for these dissimilar patterns in across case analysis. It was noted earlier in the discussion that both Child 07 and Child 92 were primarily engaged in solitary or parallel play, and as such, they did not seem intent on entering peer play. Both of these boys used very little language and were not eager to communicate with their peers. When these 2 boys were unsuccessful with their initiating behavior, they quietly avoided the conflict and moved toward another activity. On the other hand, Child 77 (Rohan) did not experience failed entry, as he was eventually successful in his attempts to initiate with his peers. However, subsequent to a problem with a peer during this

play, Rohan moved away from his peers in Avoidance and chose to stay with the ECE for the remainder of the observation.

Table 4

Conflict Strategies Across Peer Interactions

Child	Conflict Strategies						Total Observed Peer Interactions
	PRO	NEG	AGG	AVD	CONS	ASSERT	
01	4	2	2	1	0	1	6
07	1	0	0	1	2	1	4
36	3	2	2	1	1	2	7
77	2	0	0	1	2	1	4
90	3	3	3	2	1	6	8
92	1	0	0	1	2	2	7
Totals	14	7	7	7	8	13	

Note. Abbreviations for conflict strategies listed in Appendix I.

Use of Language for Self-Regulation Within Peer and Adult Interactions

In the across case analysis of Language self-regulation strategies, the data emerged in clusters based on the contexts of the children's interactions with adults and peers. The adult interaction clusters hinged on the child's Language use within "Do" and "Don't" contexts (Kochanska et al., 2001), comprising (a) child compliance in Do contexts, (b) child non-compliance in Do contexts, and (c) child responses within Don't contexts. Overall, the boys used a greater percentage of language toward adults than toward their peers. The child's communication within peer interactions was grouped into the following three clusters: (a) Responses to peer assertion, (b)

situations of not sharing with peers, and (c) attempts to engage or help peers. In this section, the researcher discusses the specifics of these Language patterns.

Language Responses Within Adult Do and Don't Contexts

Within the videotaped observations, the children encountered demands for compliance from adults, referred to as Do contexts. Usually, these were situations where the ECE was requesting that the child engage in a behavior such as sitting in the circle (Child 07), putting toys away (Child 01), or sharing with a peer (Child 36). In 6 of 9 observed Do contexts, the children used Language toward the adult during their compliance with the request. However, there were no instances (0 of 6) where Language was used as a strategy within a situation where the child did not comply with the adult demand. For example, on two occasions, Child 92 (Brody) was seen wandering away from the preschool group and was called back by an adult. Both times, Brody used Avoidance as a response, turning away from the group and offering no discussion or argument about his choices.

On the other hand, in Don't contexts where the child is being told *not* to engage in an activity, the researcher observed Language strategies in 7 of 8 events. One might suppose that when these boys were not choosing to defy an adult demand, they would usually try to explain or negotiate their choices. For example, both Child 01 (Justin) and Child 90 (Garret) fought through tears to explain their behavior to the ECE. Memos for the boys' adult interactions (Child 01, Child 36, Child 77 and Child 90) documented that, even with intense Negatively Emotional responses in a Don't context, they were typically willing to communicate with the adult. This was true except in conditions when Avoidance was used as a strategy in a Don't context, as with Child 90 and Child 77, and no Language was used to modulate the behavior or to handle the conflict.

Language Responses Within Peer Interactions

In examining the data, it was clear that the boys used Language to different degrees during peer interactions, depending on the context and their own emotional intensity. These boys did not usually employ Language as a strategy to cope with peers asserting themselves or with a problematic sharing situation. Language was used in only 4 of 18 of these circumstances. Across all of these events, the boys used various conflict strategies including Avoidance, Aggression, Assertion and Constructive Coping, but none of these consistently included Language. Peer interactions involving Child 01 (Justin) and Child 36 (Jared) and Child 92 (Brody) accounted for all four situations where Language was observed in these contexts. When Brody took a peer's toy and did not consent to sharing, he was observed speaking briefly to the boy, likely explaining that he wanted it. Jared, who didn't want to share, used a Constructive Coping strategy telling his peer "I'm using that." Also, during two conflicts where peers wanted to share a toy car, Justin used Aggression to push both peers away and used only brief language, asserting "I can do it," and "Stop it!" As shown in these examples, even when the boys used Language in these four contexts of peer assertion or sharing, it was quite brusque and didn't ease the situation enough to avert negative outcomes.

In situations where these boys made attempts to engage or help their peers (Social Assistance or Interpersonal Support), they used more language than in any other conditions with their peers. Language was used as a strategy in 4 of 6 situations when these boys were trying to help their peers. However, in situations where the peers resisted this help, the boys did not use Language to restore the interaction. Also, as discussed in the previous section on Initiation and entry behavior, Language was commonly used as a strategy to engage peers, and was observed in 11 of 17 of these occasions. The remaining situations involved Child 90 and Child 92, both of

whom were observed to use a lesser amount of Language overall. Two conclusions could be drawn from these observations of helping and engaging peers. It is possible that these boys might feel encouraged to communicate with their peers when their peers are agreeable and the experience seems more positive. Alternatively, the child's insufficient Language may contribute to peers' misunderstanding or avoidance of the child. It may not be the general use of Language strategies that affected their peer interactions, but instead the poverty of their words.

Across-Case Patterns of Language as a Self-Regulation Strategy

An across-case analysis of the matrix displays and memos revealed some important characteristics of the Language strategies employed by these 6 undercontrolled preschool-aged boys. By grouping the events into their clusters of peer and adult contexts, the researcher observed some noteworthy patterns in Language strategies.

First, it was noticeable that the boys used a greater frequency of Language within their Prosocial responses overall, than they did within other conflict strategies. However, these children were observed using a lower proportion of Language in peer contexts (4 of 6) than adult contexts (4 of 4) where they employed Constructive Coping strategies. These boys used considerably more Language within the adult interactions involving Negative Emotion (3 of 4) than in the peer interactions (1 of 6). The data also revealed that these boys used a higher rate of Language within their Assertion toward adults (3 of 5) than toward peers (2 of 8). Unsurprisingly, when the boys became Aggressive toward peers they utilized some Language in only 3 of 7 situations. It seems that these preschool-aged boys were more able to use Language within their positive coping strategies, especially during adult interactions. This data also suggests that these children were less able to use effective words in challenging peer contexts than in problematical adult contexts, especially in conditions involving Negative Emotion.

Summary

Chapter 4 has offered a thick description of this study's naturalistic observations, which was supported by the methodology and analytic process described in Chapter 3. In particular, the results were presented within 3 central themes, regarding the children's Prosocial self-regulation strategies, Language use, and Initiation behavior. The observational data was organized and discussed using thematic clusters. These themes and clusters grew from the researcher's holistic perspective on the data, including the children's individual temperamental qualities and the context of their interactions. The preschool boys' self-regulation response patterns were described both within and across-cases, and the researcher accounted for discrepancies in those patterns among the 6 cases. In this chapter, the researcher offered a portrayal of the children's self-regulation according to the central themes and, in Chapter 5, will further discuss the significance of these findings for educational research and practice.

Chapter 5: Discussion

Overview

The present study focused on young children's self-regulatory behavior as it relates to their social and emotional skills. The researcher's observations of the 6 cases were examined and coded according to observed self-regulatory responses, and the analysis presented in Chapter 4 yielded patterns found within each case, and across the 6 cases. Once these patterns were identified, the author searched for commonalities and differences, themes, and instances of disconfirming evidence. In fact, this across and within-case analysis was strongly linked to the theories and relevant findings of previous research. Using theoretical replication within multiple cases, this study's findings consequently have significant "truth value" (Miles & Huberman, 1994, p. 278), with propositions that are credible and theoretically valid.

Chapter 5 begins with an overview of the key findings. Next, the significance of these findings is discussed with regard to our current understanding of early development of self-regulation and its relationship to social competence and peer acceptance. The limitations of this study's methodology and research question are also presented in the discussion. Finally, this chapter proposes the implications of this research along and makes suggestions for further study. These future directions validate the importance of the present study, as such research supports early childhood educators and parents by providing a more complete understanding of young children's social behaviors, particularly for children who exhibit early dysregulated behavior.

Summary of Key Findings

This case study has identified a number of self-regulatory behavior patterns that are relevant to the research literature in this field. These findings are presented within the following themes:

(a) The variation in the boys' activity level, social orientation, and in the frequency and type of

interactions; (b) the boys' use of prosocial strategies within peer play, entry attempts, and conflict situations; (c) the self-regulatory strategies used by the boys to initiate play; (d) the boys' use of language to solve problems, respond to adults, and to enter peer play.

Based on each child's videotaped segment and the parent descriptions, the children were clustered into 2 distinct social orientations, as delineated by Ladd, Herald and Kochel (2006). Four boys were observed as generally making attempts to engage with their peers, and could be described as "moving toward" others (Ladd et al., 2006, p. 131). The other 2 boys were observed in primarily solitary play and showed "a propensity to move away from others.... wary of certain aspects of the social milieu" (Ladd et al., 2006, p. 132). The observational data showed clear differences in the boys' frequency and type of interactions (adult vs. peer), and in the quality of those interactions. For example, the boys who demonstrated no aggressive responses were also involved in less peer interaction and more solitary play.

Within the peer and adult interactions, the data demonstrated that each one of the 6 boys engaged in prosocial behavior. In fact, the frequency of these socially competent responses (prosocial and constructive) was greater than the total frequency of aggressive and negatively emotional responses across all interactions. The children were found to use prosocial responses within contexts of trying to engage or help others, or during an object dispute (problems with sharing). During the observations, it was noted that every prosocial and constructive coping response involved toys or books as central to the interaction. Generally these prosocial behaviors were complemented by some language strategies, although it was noted that the boys used few words to support turn-taking, initiating or sharing in these situations. Within several interactions, the boys' attempts to help or engage in play were misunderstood by their peers. On these

occasions, it was observed that the boys did not use language to provide reasons, requests or opposition, and both the child and the peer subsequently withdrew from the interaction.

Researchers in the field have suggested that a child must consider the viewpoints and frame of reference of his peers to be successful in entering peers' ongoing play (Krasnor & Rubin, 1983; Putaliez & Wasserman, 1990). Within the present study, each of the boys was observed using some competent and adaptive tactics for entry such as prosocial behaviour, problem-solving and language strategies. One child initiated successful play with peers using a substantial quantity of language which included questioning, negotiation, and an awareness of his peers' interests in play. However, these 6 boys generally did not communicate with the purpose of joining into their peers' ongoing play. Two of the six children were observed engaging in mostly solitary and parallel play and when they showed an interest in their peers' play, their primary strategy was to hover around the periphery without using language to engage. Two other boys who were considerably more social, failed to observe their peers' play and, in several circumstances, focused only on inviting others into their own play. A closer examination of the boys' interactions also revealed the significant negative impact of their inappropriate play on their peer acceptance. In these situations where the boys engaged inappropriately, their peers responded by withdrawing and ignoring the boys' rambunctious or rule-breaking play.

In situations where these boys were struggling with initiation of play, the boys were found to commonly seek adult support and interaction subsequent to the breakdown of the peer interaction. The across-case analysis of patterns also revealed that all 3 boys who expressed negative emotion and aggression were responding to unsuccessful attempts to initiate play with their peers. In the present study, this researcher noted that negative emotion seemed to disrupt the boys' skilled responses, namely the adequate use of language strategies, particularly within

peer interactions. That is, although the boys displayed negative emotion in both peer and adult situations, they used substantially less language toward their peers in these situations.

In the preceding chapter, this researcher suggested that the children's amount and use of language may not have been sufficient to communicate effectively with their peers. The children in this study used the most language overall when attempting to help peers or engage in prosocial responses. However, when their peers misunderstood their prosocial intentions, none of the boys used language to explain. This researcher suggests that this insufficient language contributed to further misunderstanding and peer avoidance. Additionally, the results showed that these children used inadequate language to cope with object possession conflicts or to negotiate with peers who acted assertively. In these cases, the boys were found to say "Stop", "No", or "Mine" but they provided no reasoning or opportunity for compromise. These challenging situations sometimes led to aggressive responses from these boys, wherein they also used inadequate language.

Although the boys showed more negative emotion toward their peers than toward adults, they used less language overall in the negatively emotional peer situations. Even when the children were told by an adult not to engage in a behavior (Don't contexts), the children typically attempted to explain or negotiate. In fact, the patterns within the peer and adult interactions showed that these children used more language in total within adult contexts. When the comparisons were made between peer and adult contexts for the children's constructive coping and assertive responses, the same patterns held true. The boys used more constructive coping and assertion toward peers but, on the whole, used more language in these responses within adult contexts. In contrast, these boys were observed using no language within peer or adult contexts when they chose to use avoidance behaviors; this was typically observed in negatively emotional

peer contexts and in adult contexts where the child was choosing not to comply with an adult demand (Do context).

Significance of This Study

Some of the themes that arise from the present study are in agreement with conclusions in the research literature on early self-regulation. Researchers in this field (Zahn-Waxler et al., 1994; Murphy & Eisenberg, 1996; Stifter et al., 1999; Hughes et al., 2000) have theorized that the context and intensity of a child's interactions significantly affect the child's social behavior and strategy selection. The findings from this case study suggest that conclusions from these previous laboratory investigations are valid and adequately represent children's natural social experiences. The uncontrived setting of the present study offered the researcher an opportunity to holistically examine the children's behavioral sequences. The observations supplied a description of these preschool boys' self-regulatory patterns, including their problem-solving, language and emotional responses. Finally, the selection of participants in this present study helped to provide a deeper understanding of how children who exhibit problem behaviors regulate their social and emotional responses.

Social Orientations

The participants in this study were selected through criterion sampling, based on observations and descriptions of the children's overactive, defiant, disruptive, inattentive, aggressive, impulsive or negatively emotional behavior. Although this produced a sample of undercontrolled boys, these children were observed to have temperamental differences in their social and behavioral orientations (see Ladd et al., 2006). This researcher has reported the variance in each child's number of observed behaviors, number of peer and adult interactions, and the child's predominant type of play (reticent, solitary-active, parallel, cooperative or pretend play). The

across-case analysis revealed that the children who frequently attempted to engage with peers were not more successful with their peer interactions, as one might have expected, nor were they more controlled in their emotional regulation than the boys who were less social. These observations are supported by Rubin et al. who stated that, "Children may engage peers in frequent interaction yet differ to the extent that they are competent during interaction" (1995, p. 52).

Mendez, Fantuzzo and Cicchetti (2002) investigated the relations between preschoolers' temperamental traits and their peer play competence. Using a person-centered analysis, these researchers described six social behavior profiles in total. Those children who were found to have high scores on play disruption, defined by aggressive and antisocial behavior, were categorized as either Inattentive-active or Dysregulated (that is, active and low in adaptability and emotion regulation). The data in the present study supports those relationships, where the boys who demonstrated no aggressive responses were also involved in less peer interaction and more solitary play, and the boys who used aggression were active and engaging with peers.

One of this researcher's intentions was to delineate the children's responses to peer interactions. The two clusters of play interaction noted in the pattern analysis have significant implications for our understanding of children's play. This data demonstrated that the boys who were the most reticent used the least problem-solving and language strategies. Similarly, Mendez et al. identified a Calm-reticent profile, which included children who had low levels of activity, peer interaction, autonomy and expressive vocabulary. This researcher suggests that these characteristically less social children were even more solitary in their play because they were prevented from engaging with peers by their inadequate self-regulatory responses. This supposition is consistent with Bierman's (2004) model of peer rejection and solitary play, which

posits that rejected children are characterized by greater deficits in attention, prosocial strategies, and emotion regulation. In their longitudinal study of preschoolers' conflict strategies, McElwain et al. (2002) also corroborate that the child's use of ineffective problem-solving strategies, such as withdrawal and avoidant behavior, leads to further solitary play because the child does not have occasion or opportunity to learn more effective responses. In the present study, the less social boys did attempt some peer interaction, but these ended in a conflict situation or in peer or child withdrawal.

McElwain et al. also explain that children's avoidance of conflict and social withdrawal may reflect "immature and rambunctious behavior, which has been associated with impulsive-aggressive behavior and peer rejection in early childhood" (p. 260). Peers have a negative view of solitary or immature play, including "a dependence on adults, whining and pouting, low frustration tolerance, and attention-getting 'goofy' behaviors" (Bierman, 2004, p. 26). In the present case study, several of the boys were observed seeking adult assistance and using attention-getting behavior to initiate play. These initiation attempts were unsuccessful across all cases, and the interactions resulted in the child's demonstrations of negative emotion or continued inappropriate behavior. This researcher proposes that these boys' maladaptive, inappropriate behavior caused a clear negative impact on their acceptance into peers' play (see Coie et al., 1990; Lindsey, 2002). Bierman concludes that "Typically it is not shy behaviors that alienate peers, but high rates of socially awkward or strange behaviors that are intrusive and that reflect an insensitivity to peer expectations, a lack of understanding of social conventions, deficiencies in the ability to read social cues, and (often) high levels of social anxiety" (p. 33).

Socially Competent Responses

A purpose of this study was to examine the children's repertoire of self-regulatory behavior. One notable pattern across the 6 cases was that these children used greater rates of prosocial and constructive coping responses than aggressive and negatively emotional responses. This study's evidence of socially competent behavior is in agreement with the conclusions of Zahn-Waxler et al. (1994) and Gilliam et al. (2002) who argued that dysregulated children do have prosocial choices in their repertoire. McElwain, Olson and Volling (2002) also observed high risk preschoolers in conflict situations and found unexpectedly low rates of aggression. In contrast, Rubin et al. (1995) claimed that highly sociable children who are poor emotion regulators are more likely to be aggressive and disruptive in their play. However, Rubin et al. also suggested that the "costs" of poor emotion regulation vary according to the child's approach toward peers during free play. The present study suggests that sociable, yet dysregulated children may show more prosocial and constructive responses than expected. These paradoxical results present a need for further investigation of the association between undercontrolled children's tendency to approach (temperamental surgency) and their prosocial behaviour.

The current study's findings of higher rates of prosocial behaviour, differ from the findings of Wood and Gross (2002) who claimed that aggressive children, in Grades 3 and 4, had a limited range of responses and poor cognitive access to alternate strategies. To offer an explanation of this variance, the longitudinal research by Howes (1987) and Spinrad et al. (2004) demonstrated that the undercontrolled child gradually becomes less successful with peer play and engages in less prosocial behaviour. In addition, Flanagan, Bierman and Kam (2003) have made an important claim that the co-occurrence of aggressive and hyperactive behaviour with prosocial deficits in the early school years is a predictor of later negative school outcomes. The present

study's findings, together with supporting results from the literature, warrant further longitudinal investigation of undercontrolled children's prosocial and constructive responses. Also, if undercontrolled preschool-aged children are more likely and/or are more able to choose socially competent responses than school-age children, caregivers must focus on early education and intervention for these high-risk children.

Children's Initiation Strategies and Responses to Failed Attempts

The analysis of this multiple case study revealed that these 6 undercontrolled boys frequently used ineffective strategies and sequences for peer group entry. The more reticent children often hovered around the periphery of peers' play. The socially active children repeatedly attempted to initiate with their peers, but usually failed to observe the play already in progress. On some occasions, the boys began to use "silly" and attention-seeking behavior. These patterns are supported by Putallaz's (1983) observations of preschoolers, where the less skilled children either disrupted peer play or lingered at the outskirts without joining. Shantz (1987) has explained that the most difficult social goals for young children to achieve are when they try to stop others' ongoing activity or try to get others to join a new activity. In several cases within the present study, the researcher noted that the boys' initiation strategies were focused on getting their peers to join into their own play. Shantz explains that these children's efforts are ineffective because "the more successful tactics are those which reflect sensitivity to the other's interests and needs and adjustment to them" (p. 291).

Bierman (2004) has suggested that socially unskilled and rejected children are observed as being reactive within frustrating situations, quick to blame, overly sensitive and easily upset by others. Bierman also explains that the dysregulated child's behavior will quickly escalate into a negatively emotional conflict if the child feels blocked in a social goal. Within the conflicts

observed in the present study, every occasion where a child demonstrated aggression and negative emotion toward a peer involved the unsuccessful initiation of peer play. This researcher clearly witnessed the maladaptive emotional regulation that is documented in the research literature (Murphy & Eisenberg, 1996; Eisenberg et al., 2001; Gilliom et al., 2002). Specifically, when a child became negatively emotional in response to the breakdown of peer play, he used an aggressive strategy that was contradictory to his social goal of engaging with his peers.

To add to these children's social difficulties, because of their poor emotional regulation, aggressive children often misinterpret others' actions, including peers' prosocial intentions (Rubin et al., 1995; Gill and Calkins, 2003). In the present study, this researcher observed a sociable child who was approached by his peer to engage in play. However, because the child misinterpreted his peer's approach as an object struggle, he responded to this peer initiation first with aggression and then with avoidance.

Shantz explains that a high proportion of children's conflicts concern the possession and use of objects, but these "take attempts" do not necessarily lead to conflict because of children's adaptive conflict strategies (1987, p.287). This study's findings are in agreement with the literature, as every child who used a prosocial or constructive coping response within a peer interaction was focused on the use or possession of toys or books. This researcher also observed a number of play initiations that involved a prosocial strategy used by the child or his peer.

Unfortunately, the peers often misinterpreted these children's prosocial intentions as aggressive behavior or as disputes over object possession. Campbell (2002) suggests that the undercontrolled child's prior negative interactions predict later peer acceptance, even though the undercontrolled child may not diminish in the tendency to approach peers. Since these undercontrolled children use antagonistic and ineffective problem-solving strategies, it is likely

that their peers anticipate their reactive or aggressive behavior and as a result, withdraw from the interaction.

Mendez et al. (2002) have proposed that children's temperamental overactivity, autonomy and tendency to approach are associated with problematic peer interactions because of "a lack of fit between disruptive children's choice patterns and those of significant others" (p. 1094). Rothbart et al. (2000) used a metaphor for this behavior, suggesting that the child's aggressive strategy is caused by an initial acceleration followed by a difficulty in braking. These researchers' conclusions explain the patterns in this study, where the children who were active and social, and who attempted to engage in peers' play, were less likely to observe and correctly "read" the interaction and were more likely to use aggression or avoidance. In these circumstances, the children's problem-solving and language strategies were blocked by deficient cognitive and emotion regulation skills.

Language Strategies

The behavior patterns within the current study revealed an overall scarcity of the children's language strategies within peer interactions. This researcher suggested that the children's insufficient language use might have been a factor in their poor problem-solving and peer group entry. In related research literature, the lack of verbal strategies in conflict has been associated with indicators of maladjustment (Winsler et al., 2000; Craig-Unkefer & Kaiser, 2002; McElwain et al., 2002).

In order to maneuver successfully within peer interactions, children must use language to make requests, enter peer groups, state rules for play, repair breakdowns in play, take turns, and determine possession of objects (Craig-Unkefer & Kaiser, 2002). The literature demonstrates that this is a cyclical process of development, as a child's deficits in language create fewer

opportunities for engagement in pretend play (Campbell, 2002; Ladd et al., 2006). As language is essential for entry into peer play (Krasnor & Rubin, 1983), children who struggle with language skills are less likely to successfully join into ongoing play. Children's peers have been observed to react negatively to a child's hovering at the periphery of play, and this behavior then increases peer rejection (Corsaro, 1979). In the play competence research by Mendez et al. (2002), children with poor receptive and expressive language scores were clustered into 3 social profiles (Dysregulated, Inattentive-active, and Calm-reticent), which were also strongly associated with play disruption and play disconnection/ withdrawal. On the other hand, Mendez et al. have asserted that children with more advanced language skills engage in a greater frequency of more complex social interactions, such as pretend and cooperative peer play. Complex play requires a child to be "sufficiently verbally fluent, coherent and articulate to coordinate the planning and maintenance of the play" (Howes & Matheson, 1992, p. 962). The data in the present study demonstrated that the more reticent, and less talkative boys showed little interest, or engagement, in their peers' cooperative play. However, the more outgoing participants attempted to initiate with peers more frequently, and several of these boys were engaged in cooperative or pretend play for short periods of time.

In their research on children's conflict, McElwain et al. presented 4 conflict strategies, which were defined as simple oppositions, elaborate oppositions, avoidance and aggression. In their research, they found that children who engaged in frequent conflicts and used avoidance strategies received the fewest peer nominations as preferred playmates. Likewise, Shantz (1987) affirmed that the least successful conflict strategies are avoidance and insistence (similar to simple opposition) whereas the most successful strategy is to compromise (an elaborate opposition). Within the present study, the boys were observed using only simple oppositions,

such as “No” or “Mine”, to cope with their peers’ assertions or object disputes. As well, on those occasions when their peers misunderstood their prosocial intentions, these boys did not use language to explain or negotiate. The inevitable result was the breakdown of the peer interaction because of the child’s, or the peer’s, eventual withdrawal. McElwain and her associates reported that preschoolers’ use of simple oppositions was not associated with later ratings of disruptive behavior or peer rejection; she claimed that children at this age are gradually learning to use elaborate oppositions. Kuczynski and Kochanska (1990) have offered a similar explanation, where simple refusal is an early form of assertion and that negotiation is a more skillful form of problem-solving that typically develops with age. In light of this research and the relevant literature, it would be important to further investigate the language development of undercontrolled children to discover whether their language strategies become more elaborate and effective as they progress through the early school years.

The boys in this multiple case study used more language when they employed prosocial strategies to help or engage their peers. Although these children demonstrated effective language skills in peer interactions, it was in the absence of negative emotion where these children seemed more able to communicate, where their peers were agreeable and the experience was intrinsically more positive. On every occasion when a participant used aggression in response to a failed initiation attempt, that child used no language and subsequently avoided the conflict.

Overall, when the children used avoidance in either peer or adult interactions, they employed no language strategies. This lack of language was especially noticeable during adult interactions where the child used avoidance within a “Do” context. The children moved away, or ignored the adult demand. In contrast, within “Don’t” contexts, the children actually fought through their tears to assert, explain and negotiate to “get their way”. In fact, the children in this study

employed more language during constructive coping and assertion responses toward adults than they did within the same conflict strategies toward peers. If children's conflict strategies and elaborate language do indeed develop with age, it seems that these children may be more able, or more confident, to use these strategies in a supportive adult context.

Researchers in the field have repeatedly theorized that children with high activity levels, poor attention and high reactivity (that is, poor emotional regulation) are less socially competent and more defiant (Eisenberg et al., 1993; Stifter et al., 1999). However, the data from the present study demonstrated that negative emotionality hindered the children's use of language primarily within peer interactions. Kopp (1989) noted a similar pattern during children's peer interactions, with the breakdown of their "planful" emotion regulation (which includes language and problem-solving strategies). In the present study, the children's more skillful noncompliance and self-regulation occurred within Don't contexts rather than Do contexts, which supports the theory that children struggle more with sustaining activity rather than suppressing it (see Kochanska et al., 2001). However, Kochanska et al. also claimed that temperamentally undercontrolled children struggled the most with compliance within Don't contexts. The patterns from the present study did not correspond with this observation. Therefore, this researcher suggests that children's language strategies should be examined further within committed compliance contexts, especially delineating children's language strategies that are adaptive yet may seem defiant (such as elaborate oppositions).

Observations within the present study showed that several children, who had experienced a breakdown in a peer interaction, sought adult support subsequent to the peer interaction. At times, the boys engaged only with an adult after a peer conflict. On other occasions, the boys sought adult assistance to initiate a new activity. Ladd et al. (2006) observed that children who

were socially anxious and avoidant, would more often seek adult assistance. Boyer (in press) found that among preschoolers there is an intrapersonal conflict between the wish to comply with adult social expectations regarding socially appropriate peer interactions and the desire to be autonomous. Once a child has embraced these social expectations, the child experiences compliance as self-generated and not interfering with autonomy. The participants in Boyer's study described their efforts to provide the child with an understanding of the necessary steps to gradually gain autonomy. With this in mind, researchers and caregivers should carefully consider intervention practices that balance adult supervision and guidance with children's developmental needs to gain autonomy in their self-regulatory practices.

Implications of the Findings for Practice and Professionalism

The potential relevance and significance of this study was introduced in the first chapter, setting a context for the discussion of the study's findings. The purpose of this study was to identify and describe the self-regulatory skills of these 6 preschool-aged boys, in order to examine their social skill deficits and strengths. The findings of this study are supportive of the work done by Rothbart et al. (2000) and Eisenberg et al. (2003), suggesting that there is a relationship between temperament, regulatory coping and social behavior. This knowledge will allow parents and educators to better identify emerging maladaptive behavior and to support children's development of self-regulatory skills required for later academic and social success.

This study's findings revealed that these undercontrolled boys certainly had a repertoire of prosocial strategies. However, the boys' self-regulatory deficits seemed to impede their socially competent responses within peer interactions. This knowledge could allow educators and caregivers to focus intervention on specific self-regulatory skills, such as problem-solving and language strategies. For example, children who are primarily reticent or solitary and who

struggle to enter peer play, could improve their social skills within structured dyadic play especially with a familiar or preferred playmate (see Ladd et al., 2006). These children may benefit from practicing language strategies that use questioning, and learning entry strategies that include the observation of peer play in progress. Active and outgoing children require more adult guidance for problem-solving without the use of aggressive tactics. These children would need support to employ elaborate oppositions, such as reasoning, questioning and negotiating (Mendez et al., 2002). Subsequent to incidents of aggression, the research demonstrates that these children require adult intervention to clarify misinterpretations of their peers' actions. Finally, the caregivers might be advised to encourage children to make further attempts with other peers, instead of allowing them to use avoidance strategies and be dependent on adult interaction. This support could be provided through scaffolded experiences with peers, including rehearsal, modeling, and direct language instruction. For example, a preschool boy who is interested in engaging with his peers, might be supported by a caregiver in entering a group play experience. The child could be encouraged to ask relevant questions such as "What kind of food are you cooking?" The child can also be supported in following the rules of the ongoing play without causing disruption, such as helping to share or get materials, or play assigned roles. These strategies would perpetuate a continuation of peer interaction that offers children the opportunities they need to learn socially competent behavior.

An important implication of the present study, as well as the other research literature mentioned in this discussion, is the proposal that "*behavior during conflict* plays a more direct role in teachers' and peers' perceptions of disruptive behavior than does *the rate of conflict*" (McElwain et al., 2002, p. 258). In this study, when the children reacted to peer conflicts using aggression, they followed this response with avoidance. The research presented in this chapter

has regarded avoidance as a maladaptive strategy that leads to further peer rejection. To the contrary, assertive and language strategies, such as reasoning, questioning and negotiating, were viewed by researchers as more adaptive and sophisticated tactics. This study demonstrates the value in parental and educator support and reinforcement of children's varied use of language, including negotiation, explanations and questions. Children need to be "flexible and responsive to the suggestions of others or the play will stop" (Howes & Matheson, 1992, p. 962). As the data in the current study suggests, these undercontrolled children attempted constructive coping and assertive responses during peer play but struggled to employ language strategies within these interactions. Therefore, if these children can learn to use words to express their negative emotions and to ask for what they want, it seems that they may be less likely to use aggression and avoidance in negatively emotional situations.

To this end, Havighurt, Harley and Prior (2004) administered a pilot program that taught parents how to support their children's social competence through emotional coaching. An important practice in this parent program was the focus on coaching children's lower intensity emotions. This practice is relevant to our current understanding of children's maladaptive responses and relevant to the present study's findings. Although undercontrolled children demonstrated a repertoire of constructive and prosocial strategies, they are hindered in the use of these competent responses by their negative emotions. The coaching of lower intensity emotions could allow these children to develop their effective language skills and problem-solving tactics during less intense emotional situations. Bierman has similarly emphasized the importance of teaching children within "online" social interactions, instead of relying on children's "capacity to think about and talk about feelings outside a problem situation" (2004, p. 66).

This study suggests that, because of their history of antagonistic behavior, undercontrolled children's prosocial responses are also sometimes misconstrued by their peers. This information validates the importance of adult encouragement of these prosocial behaviors, and adult support for language use in these responses. When a conflict arises because of a misinterpretation, the child may be supported to offer an explanation or ask questions, which may enable the child and his peer to continue the interaction. This knowledge augments educators' guidance for children to "use their words" during conflicts.

The findings of this study suggest that the social orientations of children are foundational to their use of self-regulatory strategies within their interactions. Parents and educators may need to recognize that children's engagement in play is not always successful and that some social goals are more difficult than others, and may require practice within varied contexts. Krasnor and Rubin (1983) identified the most difficult goals as involving entry into play, and attempting to stop others' play. As caregivers observe their children in play experiences, they may need to be aware of whether their child is attempting to enter play and also whether their child is able to sustain peer interactions using constructive self-regulatory behaviors.

However, the question remains about how adults can guide this learning without allowing the socially wary child to become dependent on adult support. Craig-Unkefer and Kaiser (2002) presented a model for adult intervention which focuses on the child's practice of skills within dyadic interactions. This "plan, play, review" intervention allows the adult to select activities, to model language in context, and to review the child's use of successful play strategies. It would be reasonable for caregivers and early childhood educators to implement similar intervention practices to promote effective language and problem-solving strategies. However, Ahn and Stifter (2006) provide an important reminder for caregivers and educators to tailor their coaching

of language and play, and to adjust their expectations of behavior, to match the child's developmental level.

Research that focuses on preschool children's self-regulation is significant to educational practice because "the social skills that young children display in preschool classrooms influence the degree to which they succeed at developing supportive peer relationships, both before and after the transition to Kindergarten" (Ladd et al., 2006, p.141). In fact, recently early childhood educators and researchers have focused on the implications of children's social behavior on their "school readiness". In light of research that indicates the negative longitudinal trajectories of maladaptive social strategies, educators and caregivers can no longer focus solely on pre-academic skills. Ladd et al. have proposed a list of child experiences that are foundations for school preparedness, including a stable "neighborhood friend" and a significant amount of same age peer interaction within preschool, and community settings. As well, they suggested that adults support their child's autonomy in initiating "play dates", and that adults provide an indirect supervision and guidance of play.

Researchers in the field of self-regulation have emphasized that children learn social behavior through their interactions in the environment. As Campbell (2002) suggests, adults can play a supportive role by teaching and modeling the complex play skills in which the undercontrolled child is lacking. Within these peer interactions, undercontrolled children will continue to learn, and practice the language strategies and emotional regulation that are essential to successfully engage with their peers.

Future Directions for Research and Practice

This study's findings have been reported within 4 main themes, addressing the boys' temperamental differences in social interaction, their use of prosocial and language strategies,

and their strategies for initiating play. Multiple case designs provide holistic portraits of behaviors that can assist caregivers in understanding the self-regulation practices of young children. These portraits elucidate children's self-regulatory skills in a manner that is familiar and authentic to educators and parents. It is helpful for parents and educators to understand the self-regulatory strategies used by undercontrolled children within peer and adult interactions. More specifically, caregivers need to be aware of the effects of children's temperament on problem-solving behavior and play competence. This understanding of child temperament and self-regulatory development can help adults to provide a supportive environment that will promote autonomy, emotional regulation skills and socially competent responses.

Additional naturalistic observational studies need to focus on the sequences of problem solving strategies used by undercontrolled children, including their use of avoidance strategies and their prosocial responses. The results of this study demonstrated the possibility of a relationship between avoidance and aggression, and this finding will need to be examined within a larger population of undercontrolled preschool-aged children. Our understanding of these children's strengths and needs would be also advanced with correlational research on children's temperamental surgency and their prosocial behavior. Other researchers might examine how reticent children's use of prosocial behaviors contributes to their peer engagement and ratings of peer acceptance. In fact, it would be helpful to carry out longitudinal studies of the effects of early interventions which focus on prosocial strategies, and the impact of these interventions on children's peer acceptance and entry success.

This research emphasizes the need for early childhood educators and parents to assist undercontrolled children in practicing skillful problem-solving strategies within negatively emotional contexts. Caregivers can be supportive by using emotional coaching in less intense

situations, and by helping children to use more elaborated language. Preschool and kindergarten classrooms and curricula may be designed to encourage children to explain, negotiate and question within peer and adult interactions. Further research needs to use qualitative methods to explore adults' perceptions of the elaborate oppositions used by undercontrolled children, and to examine if this more effective language use is encouraged for children who are temperamentally more difficult. Educators would also be more informed by research that examines whether these children learn these language skills more effectively within peer or adult interactions. As well, a longitudinal design examining preschoolers' language strategies may reveal whether undercontrolled children progress normatively in their use of complex language. Certainly, it would also be informative for research and practice, to understand the correlations between children's complex language strategies and their complex play, rates of aggression and avoidance strategies, successful peer entry and peer acceptance. Finally, this study was limited in its findings because the observational tool was not designed to measure the complexity of children's language strategies. Future studies of children's self-regulation through language could focus on developing an observational tool that would differentiate and measure children's language strategies.

Further research must be done to examine observations from this study which were unique or dissimilar from other research literature. Certainly, the validity of these results would be strengthened by research using larger samples of undercontrolled children, and by using formal social competence measures to select participants. Researchers could also expand on these findings with the addition of a comparison group of children who demonstrate more normative, socially competent behavior. Finally, other researchers must examine the effectiveness of the observational methods used in this study, and the validity of those methods in observing

undercontrolled preschool children. It is important for researchers in this field to continue to examine the “common core regulatory difficulties” that are observed in undercontrolled boys (see Flanagan et al., 2003, p. 405).

References

- Ahadi, S. A., & Rothbart, M. K. (1994). Temperament, development, and the Big Five. In C. F. Halverson, G. A. Kohnstamm, & R. P. Martin (Eds). *The developing structure of temperament and personality from infancy to adulthood*. (pp. 189-207). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Ahn, H. J., & Stifter, C. (2006). Child care teachers' response to children's emotional expression. *Early Education and Development, 17*(2), 253-270.
- Bierman, Karen L. (2004). *Peer rejection: Developmental processes and intervention strategies*. New York: Guilford Press.
- Block, J. H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In W. A. Collins (Ed.), *Minnesota symposia on child psychology*, (Vol. 13, pp. 39-101). Hillsdale, NJ: Erlbaum.
- Blodgett, L.J., Boyer, W., Turk, E. (2005, September). "No thank you, not today" : Supporting ethical and professional relationships in large qualitative studies [38 paragraphs]. Forum Qualitative Sozialforschung/Forum: Qualitative Social Research [On-line Journal], 6(3), Art 35. Available at <http://www.qualitative-research.net/fqs-texte/3-05/05-3-35-e.htm>
- Boyer, W., Blodgett, L, and Turk, E. (2004, May). A Report on self-regulation of preschool children. Paper presented at *Connections 2004 Conference*, Victoria, B.C., Canada.
- Boyer, W. (2005, March). Understanding the acquisition of self-regulatory skills in children ages 3-5. Paper presented for the ACEI Research Forum at the 113th Annual Association for Childhood Education (A.C.E.I.) International Conference, Washington, DC.
- Boyer, W., Blodgett, L. J. & Turk, E. (2007, April). Preschool Acquisition of Self-Regulatory Skills Across Varied Communities. *Proceedings of Head Start's Eighth National*

Research Conference in Affiliation with the Society for Research in Child Development.
Washington, DC.

http://www.acf.hhs.gov/programs/opre/hsrc/proceedings/posters/partnerships_collabora_i.html

- Boyer, W. (2007, May). *Transformative Education: Cross-Cultural Play Behaviors and Emotional Regulation*. Presented at the Association for Childhood Education (A.C.E.I.) International Conference Tampa, FL. (refereed, international)
- Boyer, W. (in press). Parental and Educator Perspectives on Young Children's Acquisition of Self-Regulatory Skills In M. R. Jalongo (Ed.) *The Significance of Interpersonal Relationships in Young Children's Lives*. New York: Springer Science and Business Media, LLC.
- Bronson, M. B. (2000). Recognizing and supporting the development of self-regulation in young children. *Young Children*, 55 (2), 32- 37.
- Brown, W. H., Holcombe, A., & Odom, S. L. (1996). Observational assessment of young children's social behavior with peers. *Early Childhood Research Quarterly*, 11, 19-40.
- Bullock, M., & Lutkenhaus, P. (1988). The development of volitional behavior in the toddler years. *Child Development*, 59, 664-674.
- Calkins, S. D., & Gill, K. L., Johnson, M. C., Smith, C. L. (1999). Emotional reactivity and emotional regulation strategies as predictors of social behavior with peers during toddlerhood. *Social Development*, 8, 310-334.
- Campbell, S. B. (1995). Behavior problems in preschool children: A review of recent research. *Journal of Child Psychology and Psychiatry*, 36, 113-149.

- Campbell, S. B. (1997). Behavior problems in preschool children: Development and family issues. *Advances in Clinical Child Psychology, 19*, 1-26.
- Campbell, S. B. (2002). *Behavior problems in preschool children: Clinical and developmental issues* (2nd Ed.). New York: Guilford Press.
- Canadian Interagency Advisory Panel on Research Ethics (PRE) (2003). *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, 1998 (with 2000, 2002 updates)*. Ottawa, ON: Medical Research Council of Canada. Available at <http://www.pre.ethics.gc.ca/english/policystatement/policystatement.cfm> [Date of Access 04/30/2005]
- Caspi, A., & Silva, P. A. (1995). Temperamental qualities at age three predict personality traits in young adulthood: Longitudinal evidence from a birth cohort. *Child Development, 66*, 486- 498.
- Coie, J. D. (1990). Toward a theory of peer rejection. In S. R. Asher, & J. D. Coie (Eds.) *Peer rejection in childhood* (pp. 365-401). New York: Cambridge University Press.
- Coie, J. D., Dodge, K. A., & Kupersmidt, J. B. (1990). Peer group behavior and social status. In S. R. Asher, & J. D. Coie (Eds.) *Peer rejection in childhood* (pp. 17-59). New York: Cambridge University Press.
- Cole, P. M., Teti, L. O., & Zahn-Waxler, C. (2003). Mutual emotion regulation and the stability of conduct problems between preschool and early school age. *Development and Psychopathology, 15*, 1-18.
- Cole, P. M., Zahn-Waxler, C., & Smith, K. D. (1994). Expressive control during a disappointment: Variations related to preschoolers' behavior problems. *Developmental Psychology, 30*, 835-846.

- Collier, J. C., & Collier, M. (1986). *Visual anthropology: Photography as a research method*. Albuquerque: University of New Mexico Press.
- Coplan, R. J., Gavinkski-Molina, M., Lagace-Seguin, D. G., & Wichmann, C. (2001). When girls versus boys play alone: Nonsocial play and adjustment in Kindergarten. *Developmental Psychology, 37*, 464-474.
- Corsaro, W. A. (1979). Young children's conception of status and role. *Sociology of Education, 52*(1), 46-59.
- Corsaro, W. A. (1985). *Friendship and peer culture in the early years*. Norwood, NJ: Ablex Publishing.
- Costin, S. E., & Jones, D. C. (1992). Friendship as a facilitator of emotional responsiveness and prosocial interventions among young children. *Developmental Psychology, 28*, 941-947.
- Craig-Unkefer, L. A., & Kaiser, A. P. (2002). Improving the social communication skills of at-risk preschool children in a play context. *Topics in Early Childhood Special Education, 22*(1), 3-13.
- Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, New Jersey: Merrill Prentice Hall.
- Dunn, J. (1998). Siblings, emotion and the development of understanding. In S. Braten (Ed.) *Intersubjective communication and emotion in early ontogeny*. (pp. 158-168). Cambridge, UK: Cambridge University Press.
- Dunn, J. (1988). *The beginnings of social understanding*. Cambridge, MA.
- Eaton, W. O. (1994). Temperament, development, and the five-factor model: Lessons from activity level. In C. F. Halverson, G. A. Kohnstamm, & R. P. Martin (Eds). *The*

- developing structure of temperament and personality from infancy to adulthood.* (pp. 173-187). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., et al. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development, 72*, 1112-1134.
- Eisenberg, N., Fabes, R. A., Guthrie, I. K., & Reiser, M. (2000). Dispositional emotionality and regulation: Their role in predicting quality of social functioning. *Journal of Personality and Social Psychology, 78*, 136-157.
- Eisenberg, N., Fabes, R. A., Karbon, M., Murphy, B. C., Wosinski, M., Polazzi, L., et al. (1996). The relations of children's dispositional prosocial behavior to emotionality, regulation and social functioning. *Child Development, 67*, 974-992.
- Eisenberg, N., Fabes, R. A., Nyman, M., Bernzweig, J., & Pinuelas, A. (1994). The relations of emotionality and regulation to children's anger-related reactions. *Child Development, 65*, 109-128.
- Eisenberg, N., Fabes, R. A., Shepard, S. A., Murphy, B. C., Guthrie, I. K., Jones, S., et al. (1997). Contemporaneous and longitudinal prediction of children's social functioning from regulation and emotionality. *Child Development, 68*, 642-664.
- Eisenberg, N., Valiente, C., Fabes, R. A., Smith, C. L., Reiser, M., Shepard, S. A., et al. (2003). The relations of effortful control and ego control to children's resiliency and social functioning. *Developmental Psychology, 39* (4), 761-776.
- Erikson, F. (1992). The interface between ethnography and microanalysis. In M. D. LeCompte, W. L. Millroy, & J. Preissle (Eds.), *The handbook of qualitative research in education* (pp. 201-255). San Diego, CA : Academic Press.

- Fabes, R. A., Eisenberg, N., Jones, S., Smith, M., Guthrie, I., Poulin, R., et al. (1999). Regulation, emotionality, and preschoolers' socially competent peer interactions. *Child Development, 70*, 432-442.
- Flanagan, K. S., Bierman, K. L., & Kam, C. (2003). Identifying at-risk children at school entry: The usefulness of multibehavioral problem profiles. *Journal of Clinical Child and Adolescent Psychology, 32*(3), 396-407.
- Gall, J. P., Gall, M. D., & Borg, W. R. (2005). *Applying educational research: A practical guide*. Boston: Pearson Education.
- Gill, K. L., & Calkins, S. D. (2003). Do aggressive/ destructive toddlers lack concern for others? Behavioral and physiological indicators of empathic responding in 2-year-old children. *Development and Psychopathology, 15*, 55-71.
- Gilliom, M., Shaw, D. S., Beck, J. E., Schonberg, M. A., & Lukon, J. L. (2002). Anger regulation in disadvantaged preschool boys: Strategies, antecedents, and the development of self-control. *Developmental Psychology, 38* (2), 222-235.
- Goldsmith, H. H., Buss, A. H., Plomin, R., Rothbart, M. K., Thomas, A., Chess, S., et al. (1987). Roundtable: What is temperament? Four approaches. *Child Development, 58*, 505-529.
- Grolnick, W. S., & Farkas, M. (2002). Parenting and the development of children's self-regulation. In M. H. Bornstein (Ed.). *Handbook of parenting: Vol. 5: Practical issues in parenting* (2nd ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates (pp. 89-110).
- Gunnar, M. R., Sebanc, A. M., Tout, K., Donzella, B., & van Dulmen, M. M. H. (2003). Peer rejection, temperament and cortisol activity in preschoolers. *Developmental Psychobiology, 43*, 346-358.

- Hart, D., Hofmann, V., Edelstein, W., & Keller, M. (1997). The relation of childhood personality types to adolescent behavior and development: A longitudinal study of Icelandic children. *Developmental Psychology*, 33, 195-205.
- Hartup, W. W. (1996) Cooperation, close relationships, and cognitive development. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds). *The company they keep: Friendship in childhood and adolescence* (pp. 213-237). Cambridge, UK: Cambridge University Press.
- Havighurst, S. S., Harley, A., & Prior, M. (2004). Building preschool children's emotional competence: A parenting program. *Early Education and Development*, 15(4), 423-447.
- Havill, V. L., Allen, K., Halverson, C. F., & Kohnstamm, G. A. (1994). In C. F. Halverson, G. A. Kohnstamm, & R. P. Martin (Eds). *The developing structure of temperament and personality from infancy to adulthood*. (pp. 371-387). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Howes, C. (1987). Peer interaction of young children. *Monographs of the Society for Research in Child Development*, 53(1, Serial No. 217).
- Howes, C. (1992). Sequences in the development of competent play with peers: Social and pretend play. *Developmental Psychology*, 28(5), 961-974.
- Howes, C. (1996). The earliest friendships. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds). *The company they keep: Friendship in childhood and adolescence* (pp. 66-86). Cambridge, UK: Cambridge University Press.
- Hughes, C., White, A., Sharpen, J., & Dunn, J. (2000). Antisocial, angry, and unsympathetic: "Hard-to-manage" preschoolers' peer problems and possible cognitive influences. *Journal of Child Psychology and Psychiatry*, 41, 169-179.

- Jokinen, P., Lappalainen, M., Merilainen, P., & Pelkonen, M. (2002). Ethical issues in ethnographic nursing research with children and elderly people. *Scandinavian Journal of Caring Sciences, 16*, 165-170.
- Kochanska, G., Coy, K. C., & Murray, K. T. (2001). The development of self-regulation in the first four years of life. *Child Development, 72*, 1091-1111.
- Kochanska, G., Murray, K. T., & Harlan, E. T. (2000). Effortful control in early childhood: Continuity and change, antecedents and implications for social development. *Developmental Psychology, 36*, 220-232.
- Kochanska, G., Murray, K., Jacques, T. Y., Koenig, A. L., & Vandergeest, K. A. (1996). Inhibitory control in young children and its role in emerging internalization. *Child Development, 67*, 490-507.
- Kopp, C. (1982). Antecedents of self-regulation: A developmental perspective. *Developmental Psychology, 18*, 199-214.
- Kopp, C. (1989). Regulation of distress and negative emotions: A developmental view. *Developmental Psychology, 25*, 343-354.
- Krasnor, L. R., & Rubin, K. H. (1983). Preschool social problem solving: Attempts and outcomes in naturalistic interaction. *Child Development, 54*, 1545-1558.
- Kuczynski, L., Kochanska, G., Radke-Yarrow, M., & Girnius-Brown, O. (1987). A developmental interpretation of young children's noncompliance. *Developmental Psychology, 23*, 799-806.
- Kuczynski, L., & Kochanska, G. (1990). Development of children's noncompliance strategies from toddlerhood to age 5. *Developmental Psychology, 26*, 398-408.

- Ladd, G. W. (1990). Having friends, keeping friends, making friends and being liked by peers in the classroom: Predictors of children's early school adjustment? *Child Development*, *61*, 1081-1100.
- Ladd, G. W., Herald, S. L., & Kochel, K. P. (2006). School readiness: Are there social prerequisites? *Early Education and Development*, *17*(1), 115-150.
- Lindsey, E. W. (2002). Preschool children's friendships and peer acceptance: Links to social competence. *Child Study Journal*, *32*(3), 145-155.
- Marakovitz, S. E., & Campbell, S. B. (1998). Inattention, impulsivity, and hyperactivity from preschool to school age: Performance of hard-to-manage boys on laboratory measures. *Journal of Child Psychology and Psychiatry*, *39*, 841-851.
- Martin, R. P., Wisenbaker, J., & Huttunen, M. (1994). Review of factor analytic studies of temperament measures based on the Thomas-Chess structural model: Implications for the Big Five. In C. F. Halverson, G. A. Kohnstamm, & R. P. Martin (Eds). *The developing structure of temperament and personality from infancy to adulthood*. (pp. 157-192). Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- McElwain, N. L., Olson, S. L., & Volling, B. L. (2002). Concurrent and longitudinal associations among preschool boys' conflict management, disruptive behavior, and peer rejection. *Early Education and Development*, *13*(3), 245-264.
- McMillan, J. H., & Schumacher, S. (2001). *Research in Education. A Conceptual Introduction* (5th ed.). Toronto: Addison Wesley Longman, Inc.
- Mendez, J. L., Fantuzzo, J., & Cicchetti, D. (2002). Profile of social competence among low-income African American preschool children. *Child Development*, *73*, 1085-1100.

- Miles, M. B., & Huberman, A. M. (1994). *An expanded sourcebook: Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Mischel, W., & Ebbeson, E. B. (1970). Attention in delay of gratification. *Journal of Personality and Social Psychology*, *16*, 329-337.
- Mischel, H. N., & Mischel, W. (1983). The development of children's knowledge of self-control strategies. *Child Development*, *54*, 603-619.
- Mischel, W., Shoda, Y., & Rodriguez, M. L. (1989). Delay of gratification in children. *Science*, *244*, 933-938.
- Mize, J., Ladd, G. W., (1990). Toward the development of successful social skills training for preschool children. In S. R. Asher & J.D. Coie (Eds). *Peer rejection in childhood* (pp. 338-361). Cambridge, UK: Cambridge University Press.
- Mize, J., Ladd, G. W., & Price, J. M. (1985). Promoting positive peer relations with young children: Rationales and strategies. *Child Care Quarterly*, *14*(4), 221-237.
- Murphy, B.C., & Eisenberg, N. (1996). Provoked by a peer: Children's anger-related responses and their relations to social functioning. *Merrill-Palmer Quarterly*, *42*, 103-124.
- Mustard, F., & Picherack, F. (2002). *Early child development in British Columbia: Enabling communities*. Toronto: The Founders Network.
- Muuss, R. E. (1982). Social cognition: Robert Selman's theory of role taking. *Journal of Adolescence*, *17*, 499-525.
- Newcomb, A. F., & Bagwell, C. L. (1995). Children's friendship relations: A Meta-analytic review. *Psychological Bulletin*, *117*, 306-347.
- Newcomb, A. F., & Bagwell, C. L. (1996). The developmental significance of children's friendship relations. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds). *The*

- company they keep: Friendship in childhood and adolescence* (pp. 289-321). Cambridge, UK: Cambridge University Press.
- Newman, D. L., Caspi, A., Silva, P.A., & Moffitt, T. E. (1997). Antecedents of adult interpersonal functioning: Effects of individual differences in Age 3 temperament. *Developmental Psychology, 33*, 206-217.
- Parten, M. B. (1932). Social participation among pre-school children. *Journal of Abnormal and Social Psychology, 27*, 1932, 243-269.
- Piaget, J. (1926/2003). The language and thought of the child. In M. P. Munger (Ed.). *History of psychology: Fundamental questions* (pp.368-388). London: Oxford University Press.
- Putallaz, M. (1983). Predicting children's sociometric status from their behavior. *Child Development, 54*(6), 1417-1426.
- Putallaz, M., & Wasserman, A. (1990). Children's entry behavior. In S. R. Asher & J.D. Coie (Eds). *Peer rejection in childhood* (pp. 60-89). Cambridge, UK: Cambridge University Press.
- Ratcliff, D. (2003). Video methods in qualitative research. In P.M. Camic, J. E. Rhodes, L. Yardley (Eds.). *Qualitative research in psychology: Expanding perspectives in methodology and design* (pp.113- 129). Washington: American Psychological Association.
- Reed, M. A., Pien, D. L., Rothbart, M. K. (1984). Inhibitory self-control in preschool children. *Merrill-Palmer Quarterly, 30*, 131-147.

- Robins, R. W., John, O. P., Caspi, A., Moffitt, T. E., Stouthamber-Loeber, M. (1996). Resilient, overcontrolled and undercontrolled boys: Three replicable personality types. *Journal of Personality and Social Psychology, 70*, 157-171.
- Rothbart, M. K., Ahadi, S. A., Hershey, K. L., & Fisher, P. (2001). Investigations of temperament at three to seven years: The childrens' behavior questionnaire. *Child Development, 72*, 1394-1408.
- Rothbart, M. K., Ahadi, S. A., & Evans, D. E. (2000). Temperament and personality: Origins and outcomes. *Journal of Personality and Social Psychology, 78*, 122-135.
- Rothbart, M. K., Ahadi, S. A., & Hershey, K. L. (1994). Temperament and social behavior in childhood. *Merrill-Palmer Quarterly, 40*, 21-39.
- Rothbart, M. K., Derryberry, D., & Posner, M. I. (1994). A psychobiological approach to the development of temperament. In J. E. Bates, & T. D. Wachs (Eds.) *Temperament: Individual differences in biology and behavior*. (pp. 83-116). Washington, DC: American Psychological Association.
- Rubin, K. H., Booth, C. L., Coplan, R., Krasnor, L. R., & Lynch, D. (1994). "Birds of a feather...": Behavioral concordances and preferential personal attraction in children. *Child Development, 65*, 1778-1785.
- Rubin, K. H., Coplan, R. J., Fox, N. A., & Calkins, S. D. (1995). Emotionality, emotion regulation, and preschoolers' social adaptation. *Development and Psychopathology, 7*, 49-62.
- Shank, G. D. (2002). *Qualitative research: A personal skills approach*. Upper Saddle River, New Jersey: Pearson Education.
- Shantz, C. U. (1987). Conflicts between children. *Child Development, 58*, 283-305.

- Silverman, D. (2000). *Doing qualitative research: A practical handbook*. London: Sage Publications.
- Spinrad, T. L., Eisenberg, N., Harris, E., Hanish, L., Fabes, R. A., Kupanoff, K., et al. (2004). The relation of children's everyday nonsocial peer play behavior to their emotionality, regulation and social functioning. *Developmental Psychology, 40*, 67-80.
- Stake, R. E. (1988). Case study methods in educational research: Seeking sweet water. In R. M. Jaeger (Ed.). *Complementary methods for research in education*. (pp. 253-265). Washington, DC: American Educational Research Association.
- Stifter, C. A., Spinrad, T. L., & Braungart-Rieker, J. M. (1999). Toward a developmental model of child compliance: The role of emotion regulation in infancy. *Child Development, 70*, 21-32.
- Thomas, A., & Chess, S. (1977). *Temperament and development*. New York: Brunner/ Mazel.
- Thomas, A., & Chess, S. (1980). *The dynamics of psychological development*. New York: Brunner/ Mazel.
- Thompson, R. A. (1998). Empathy and its origins in early development. In S. Braten (Ed.) *Intersubjective communication and emotion in early ontogeny*. (pp. 144-157). Cambridge, UK: Cambridge University Press.
- United Nations (1989). *Convention on the rights of the child*. Geneva: United Nations.
- Winsler, A., Diaz, R. M., Atencio, D. J., McCarthy, E. M., & Adams- Chabay, L. (2000). Verbal self-regulation over time in preschool children at risk for attention and behavior problems. *Journal of Child Psychology and Psychiatry, 41*, 875-886.

- Wood, C. N., & Gross, A. M. (2002). Behavioral response generation and selection of rejected-reactive aggressive, rejected nonaggressive, and average status children. *Child and Family Behavior Therapy, 24*(3), 1-19.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Zahn-Waxler, C., Cole, P. M., Richardson, D. T., Friedman, R. J., Michel, M. K., & Belouad, F. (1994). Social problem solving in disruptive preschool children: Reactions to hypothetical situations of conflict and distress. *Merrill-Palmer Quarterly, 40*, 98-119.

Appendix A

Definitions of Terms

The following are definitions cited from relevant research for the central terms used in this study:

Affiliation:

“affection, giving or sharing of positive emotions in the absence of distress (e.g., holds hands, dances, eats together)” (Zahn-Waxler et al., 1994, p.104)

Aggression:

Calkins, Gill, Johnson and Smith (1999) describe several types of aggression:

Hostile aggression (the target child has physically harmed another child for no particular purpose other than to express some negative emotion), instrumental aggression (the target child has physically harmed another child in the service of obtaining a desired object or goal), verbal aggression (insults, taunts), and physically stopping the action(s) of the other child. (p. 319)

Anger/ frustration:

“amount of negative affect related to interruption of ongoing tasks or goal blocking”
(Rothbart, Ahadi, & Hershey, 1994, p. 29)

Anger as *expressed emotion* is described as “displays of meanness, irritation, annoyance (e.g., harsh tone of voice, jutting the jaw, tightening lips, glare or hard stare)” (Zahn-Waxler et al., 1994, p.105)

Anger as *behavioral enactments* is described as “physical threats, gestural and postural anger that does not involve aggressive or harmful acts” (Zahn-Waxler et al., 1994, p.104)

Avoidance:

“if the child actively moved away or hid so as to avoid having to comply” (Stifter, Spinrad, & Braungart-Rieker, 1999, p. 24).

Compliance:

“Obeying a request or command given by an authority figure” (Zahn-Waxler et al., 1994, p.104)

Situational compliance “describes instances when children, although essentially cooperative, do not appear to embrace wholeheartedly the maternal agenda. Such compliance is ‘shaky’ and seems contingent on sustained maternal control” (Kochanska, Coy, & Murraray, 2001, p.1092).

Committed compliance “describes children’s behavior when they embrace the maternal agenda, accepts it as their own, and early follow maternal directives in a self-regulated way” (Kochanska, Coy, & Murraray, 2001, p.1092).

Constructive Coping:

“Instrumental problem solving and seeking support” (Eisenberg et al., 1993, p. 1424), where *instrumental problem solving* is described as when the child “takes some constructive action to improve a problem situation” (Eisenberg et al., 1993, p. 1422).

Defiance:

“noncompliance by overt refusal, with angry, defiant or negative affect; includes temper tantrums, whining” (Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987, p.801).

Dysregulation:

“individuals who experience intense levels of negative emotionality may become overwhelmed and subsequently behave more impulsively, negatively, and less constructively” (Fabes et al., 1999, p. 432)

Effortful Control:

“defined primarily by inhibitory control, attentional focusing, low-intensity pleasure, and perceptual sensitivity” (Rothbart, Derryberry, & Posner, 1994, p. 86).

The four dimensions of Effortful Control have been described as:

Inhibitory control- “The capacity to plan and to suppress inappropriate approach responses under instructions or in novel or uncertain situations” (Rothbart, Ahadi, & Hershey, 1994, p. 29).

Attentional focusing- “Tendency to maintain attentional focus upon task-related channels” (Rothbart, Ahadi, & Hershey, 1994, p. 29).

Low intensity pleasure- “Amount of pleasure or enjoyment related to situations involving low stimulus intensity, rate, complexity, novelty and incongruity” (Rothbart, Ahadi, & Hershey, 1994, p. 30).

Perceptual sensitivity- “Amount of detection of slight, low intensity stimuli from the external environment” (Rothbart, Ahadi, & Hershey, 1994, p. 30).

Ego control:

Overcontrol refers to “excessive containment of impulses, delay of gratification, inhibition of action and affect, and insulation from environmental distractors” (Block & Block, 1980, p. 43)

Undercontrol refers to "insufficient modulation of impulse, the inability to delay gratification, immediate and direct expression of motivation and affects, and vulnerability to environmental distractors" (Block & Block, 1980, p. 43).

Ego resiliency:

“the tendency to respond flexibly rather than rigidly to changing situational demands, especially frustrating and stressful encounters” (Robins, John, Caspi, Moffitt, and Stouthamber-Loeber, 1996, p.159).

Emotion regulation:

the process of initiating, maintaining, modulating or changing the occurrence, intensity, or duration of internal feeling states, emotion-related psychological processes, and the behavioral concomitants of emotion (e.g., facial expressions) in the service of accomplishing goals. (Eisenberg, Cumberland, Spinrad, Fabes, Shepard, Reiser, et al., 2001, p. 1114)

Externalizing behavior:

“aggressive behavior or problems of behavioral undercontrol” (Rubin, Coplan, Fox, & Calkins, 1995, p. 50).

Negative Emotionality:

“Negative affectivity is defined primarily by loadings for the scales of sadness, discomfort, anger/frustration, fear” (Rothbart, Ahadi, & Evans, 2000, p. 126).

Negotiation:

child attempts to reach a new mutually agreed upon parental directive; proposes bargains, alternate solutions or compromises, asks for or offers explanations or excuses (e.g., “Why?” “I have a better idea...,” “But I’m already clean,” “But I’m tired,” “I’ll do it later,” “But I’m still on the horse,” “I want to eat that last.”) (Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987, p.801).

Non-compliance:

“ignoring or disobeying authority figure” (Zahn-Waxler et al., 1994, p.105).

Kuczynski & Kochanska (1990) describe a differentiated model of four forms of children’s noncompliance: passive noncompliance, direct defiance, simple refusal and negotiation.

Passive Non-compliance:

“child does not perform the requested behavior, but does not overtly refuse or defy; child does not acknowledge the intervention; affect is not negative” (Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987, p.801).

Play:

Parten (1932) describes play as involving “two aspects of social participation... *extensity*, or the number of social contacts made by an individual, and *intensity*, or the kind of groups participated in and the role of the individual in those groups” (p.248).

Unoccupied behavior- “The child apparently is not playing but occupies himself with watching anything that happens to be of momentary interest” (Parten, 1932, p. 249).

Onlooker- “The child spends most of his time watching the other children play. He often talks to the children who he is observing, asks questions, or gives suggestions, but does not overtly enter into the play himself” (Parten, 1932, p. 249).

Solitary independent play- “The child plays alone and independently with toys that are different from those used by the children within speaking distance and makes no effort to get close to other children” (Parten, 1932, p. 250).

Parallel activity- “The child plays independently, but the activity he chooses naturally brings him among other children... He plays *beside* rather than *with* the other children” (Parten, 1932, p.250).

Associative play- The child plays with other children. The conversation concerns the common activity... All the members engage in similar if not identical activity; there is no division of labor, and no organization of the activity of several individuals around any material goal or product... each child acts as he wishes. (Parten, 1932, p. 251)

Cooperative play- The child plays in a group that is organized for the purpose of making some material product, or of striving to attain some competitive goal, or of dramatizing situations of adult and group life, or of playing formal games. There is a marked sense of belonging or of not

belonging to the group. The control of the group situation is in the hands of one or two of the members who direct the activity of the others. (Parten, 1932, p. 251)

Self-assertion:

“when the toddler refused to comply while maintaining a neutral, non-angry tone of voice”
(Stifter, Spinrad, & Braungart-Rieker, 1999, p. 24).

Self-regulation:

the ability to comply with a request, to initiate and cease activities according to situational demands, to modulate the intensity, frequency, and duration of verbal and motor acts in social and educational settings, to postpone acting upon a desired object or goal, and to generate socially approved behavior in the absence of external monitors.
(Kopp, 1982, p. 199-200)

Social competence:

“frequently defined as a complex set of behavioral and cognitive skills used to direct and facilitate social behavior...conceptually and empirically linked to the ability to regulate behavior and emotions” (Murphy & Eisenberg, 1996, p. 105).

“if the child’s behavior was deemed constructive to the maintenance and protection of positive social interactions (e.g., being friendly, helping others, expressing affection, defending others, and so forth)” (Fabes et al., 1999, p.435)

Surgency:

this dimension reflects an underlying positive emotion, approach, or reward orientation... Approach is manifested behaviorally through sociability (to the extent that other people provide one of the richest sources of both reward and engagement), through a form of impulsivity reflecting immediate responsiveness to signals of reward in the environment, through sensation seeking (engaging in activities that increase levels of cortical arousal whether through sky-diving or daydreaming in a boring class), and activity level. This dimension may also be partly related to intensity of affective response, especially positive affect. (Ahadi and Rothbart, 1994, p. 191)

Temperament:

“constitutionally based individual differences in reactivity and self-regulation” (Rothbart, Ahadi, & Hershey, 1994, p. 22)

Rothbart, Ahadi et al. define reactivity as “arousability of affect, motor activity, and related responses, assessed by threshold, latency, intensity, time to peak intensity and recovery time of the reaction” (1994, p. 22). These authors define self-regulation as “processes such as attention, approach-withdrawal, behavioral inhibition, and self-soothing, serving to modulate reactivity” (p. 22).

Undercontrol:

“These children are active, have high energy levels (‘vital, energetic, lively’), express desires immediately (‘unable to delay gratification’), and have difficulty maintaining a prolonged focus on a single activity” (Hart, 1997, p. 200).

Defined by very high scores on Lack of Control... this group is distinguished from the remaining groups by high scores on a constellation of items that capture both irritability and distractibility... these children had difficulty sitting still, were rough and uncontrolled in their behavior, and labile in their emotional responses. (Caspi & Silva, 1995, p. 489)

Appendix B

Script for phone contact with parents

As cited in Boyer, W. (2005, March). Understanding the acquisition of self-regulatory skills in children ages 3-5. Paper presented for the ACEI Research Forum at the 113th Annual Association for Childhood Education (A.C.E.I.) International Conference, Washington, DC.

<p style="text-align: center;">University of Victoria: Department of Educational Psychology and Leadership Studies</p>
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Foundational Measure of Early Childhood Development of Self-Regulation**Script: Phone contact with parents**

(derived from the letter of informed consent)

Good afternoon/ evening. My name is (research assistant) and I am affiliated with the University of Victoria and Dr. Wanda Boyer's research study entitled "Foundational Measure of Early Childhood Development of Self-Regulation." We are working with the preschool that your child attends. Have you had a chance to learn about our study?

Participation in this study will involve your time in thinking and talking about your child. Our study is all about listening to your voices. Listening to the voices of parents and early childhood educators as they reflect, share, and discuss how, when, and why children self-regulate.

Your voluntary participation will include sharing background information (such as your age and job), one individual audio-taped interview, the natural video-taping of normal preschool interactions, and your involvement in an audio-taped focus group. Do you have any questions about this process?

Either (name of research assistant), or I hope to be meeting you at the preschool for drop-off in the morning one day this week. We will have the consent forms available for you to read and sign.

Please feel free to contact Dr. Wanda Boyer if you do have any further questions. Her phone number is 721-7814 and her email address is wboyer@uvic.ca.

Appendix C
Participant Consent Form

UNIVERSITY OF VICTORIA
OFFICE OF THE VICE-PRESIDENT, RESEARCH
HUMAN RESEARCH ETHICS COMMITTEE

Participant Consent Form

Foundational Measure of Early Childhood Development of Self-Regulation

I would like to invite you, **the parents of young children**, to participate in a study called Foundational Measure of Early Childhood Development of Self-Regulation that is being conducted by Dr. Wanda Boyer, an associate professor in the Faculty of Education in the Department of Educational Psychology and Leadership Studies at the University of Victoria. You may contact Dr. Boyer if you have further questions by phone (250) 721-7814 or email wboyer@uvic.ca.

This research is being funded by the Human Early Learning Partnership in partnership with the B.C. Ministry of Children and Family Development (MCFD). The purpose of this research project is to develop an observation guide to help us understand how, when, and why children ages 3-5 learn to regulate their physical, cognitive, linguistic, social and emotional responses throughout natural preschool interactions. A specific purpose of this study is to assist and inform everyone caring for young children about ages and stages of self-regulation development. The results will strengthen educational practices.

Research of this type is important because it has the potential to contribute to our understanding of how young children initiate, cease, or modulate behaviours in accordance with caregiver and parental standards. The grounded theory model developed in this research will be used to create a guide to enable all of us who care for children to plan, adapt, and modify programs to improve young children's self-regulatory skills development for optimal readiness to learn.

You are being asked to participate in this study because you are actively and enthusiastically involved in the education of your children as members of the Vancouver Island Cooperative Preschool Association, and you know your children very well.

What is involved? If you voluntarily agree to participate in this research, your participation will include sharing background information (i.e. age, gender, job, marital status, and number of children and their ages and genders), one individual audiotaped interview, natural videotaping of normal preschool interactions, and involvement in an audiotaped focus group. *The interviews* will consist of 40-60 minutes of audiotaping of your thoughtful reflections about your child's self-regulation. Examples of the interview questions include: How do you define self-regulation, How does your child respond when you ask your child to stop an activity, begin an activity, or do an activity they like or they do not like to do? You are also being invited to voluntarily participate in a natural *30 minute videotape* of normal preschool interactions with the children to note how, when, and why young children self-regulate their behaviours. *The focus group* will involve 60-70 minutes of your thoughtful reflections in a group of 7-9 parents about self-regulation in order to learn your thoughts on how, when, and why 3-5 year olds develop self-regulation. Examples of the focus group questions include further discussion and your thoughtful contributions to the questions introduced in the interviews including: What does it mean to self-regulate, how does a child learn to self-regulate, and why is self-regulation important?

In acknowledgement of your contribution to the research, the researcher will donate two books to each cooperative preschool library. It is important for you to know that it is unethical to provide undue compensation or inducement to research participants and, if you agree to be a participant in this study, this donation to your cooperative preschool must not be coercive. If you would not otherwise choose to participate if the compensation was not offered, then you should decline.

Participation in this study will involve your time in thinking and talking about your child. There are no known or anticipated risks to you or your child by participating in this research. The potential benefits of your participation in this research include contributing to the knowledge and understanding of how self-

regulation is developmentally supported by parents and preschool educators. Also, this research could help parents and preschool educators plan, adapt and modify programs to improve young children's self-regulatory skill development for optimal readiness to learn. In addition you may benefit from thinking about yourself in the different roles you fulfill in your particular social, family, and community contexts and how you contribute to your child's development.

Your participation in this research must be completely voluntary. If you do decide to participate you may withdraw at any time, or refuse to answer certain questions without any consequences or any explanation. If you do withdraw from the study your audiotape and videotape will be erased and the transcripts of what you said will be destroyed. In the case of the focus group your contributions on the tape and in the type-written transcript will be removed as much as possible as it is sometimes difficult to extract what a person has said totally from a group discussion particularly if other participants build upon a comment you have made.

In order to make sure that you continue to voluntarily consent to participate in this research, my research assistants or I will remind you about the terms of participation (e.g., voluntary, ability to withdraw etc.) at the beginning of your interview, the focus group, and at the beginning of the day for videotaping of normal preschool interactions.

This research will lead to a self-regulation guide and directions for its use which I will share with you and your preschool and which will also be available in the public domain.

In order to preserve your anonymity, your name will not be recorded on the transcribed data, a code or pseudonym will be assigned and used in place of your name, and the researcher and research assistants will be the only people who know your identity. Your confidentiality and the confidentiality of the data will in part be protected by storing interview audiotapes, videotapes, the transcribed data and other information, the key to the coded names and the signed consent letters in locked filing cabinets. The key to the coded names will be kept separately from the interview data, and the signed consent letters will also be stored separately from any data. Only the researcher and research assistants will have access to the data and focus group members will be reminded to hold in confidence the content of the group discussions. The audiotape from your interview, videotapes, the transcribed data, and any notes taken during the interview will be destroyed within seven years.

A copy of the research newsletter will be given to the cooperative preschool community group at the end of the research project, and the findings will be published in monographs, theses, peer-reviewed journals, and presented at professional and/or scholarly conferences.

If you have any questions please contact Dr. Wanda Boyer at (250) 721-7814 or wboyer@uvic.ca. You may also contact the Associate Vice-President, Research at the University of Victoria (250) 472-4362 for information about this research.

If you are interested in participating, please complete the bottom portion of this sheet and return the top copy to Dr. Boyer while retaining the yellow copy for your files. You will be contacted by telephone or email to schedule an interview.

Respectfully,
Wanda Boyer, Ph.D.
University of Victoria

Name of Child _____ Date _____

Name of Participant (Print) _____ Telephone _____

Signature

Email

Participant Consent Form

UNIVERSITY OF VICTORIA
 OFFICE OF THE VICE-PRESIDENT, RESEARCH
 HUMAN RESEARCH ETHICS COMMITTEE

Foundational Measure of Early Childhood Development of Self-Regulation

I would like to invite you, as **early childhood educators**, to participate in a study called Foundational Measure of Early Childhood Development of Self-Regulation that is being conducted by Dr. Wanda Boyer, an associate professor in the Faculty of Education in the Department of Educational Psychology and Leadership Studies at the University of Victoria. You may contact her if you have further questions by phone (250) 721-7814 or email wboyer@uvic.ca.

This research is being funded by the Human Early Learning Partnership in partnership with the B.C. Ministry of Children and Family Development (MCFD). The purpose of this research project is to develop an observation guide to help us understand how, when, and why children ages 3-5 learn to regulate their physical, cognitive, linguistic, social and emotional responses throughout natural preschool interactions. A specific purpose of this study is to assist and inform everyone caring for young children about ages and stages of self-regulation development. The results will strengthen educational practices.

Research of this type is important because it has the potential to contribute to our understanding of how young children initiate, cease, or modulate behaviours in accordance with caregiver and parental standards. The grounded theory model developed in this research will be used to create a guide to enable all of us who care for children to plan, adapt, and modify programs to improve young children's self-regulatory skills development for optimal readiness to learn.

You are being asked to participate in this study because you are actively and enthusiastically involved in the education of young children as members and leaders within the Vancouver Island Cooperative Preschool Association, and you know your children very well.

What is involved? If you voluntarily agree to participate in this research, your participation will include sharing background information (i.e. age, gender, years in service, years of preservice training, and number of children in the preschool morning and afternoon programs), one individual audiotaped interview, natural videotaping of normal preschool interactions, and involvement in an audiotaped focus group. *The interviews* will consist of 40-60 minutes of audiotaping of your thoughtful reflections about your children's self-regulation. Examples of the interview questions include: How do you define self-regulation, How does the child respond when you ask the child to stop an activity, begin an activity, or do an activity they like or they do not like to do? You are also being invited to voluntarily participate in a natural *30 minute videotape* of normal preschool interactions with the children to note how, when, and why young children self-regulate their behaviours. *The focus group* will involve 60-70 minutes of your thoughtful reflections in a group of five preschool educators about self-regulation in order to learn your thoughts on how, when, and why 3-5 year olds develop self-regulation. Examples of the focus group questions include further discussion and your thoughtful contributions to the questions introduced in the interviews including: What does it mean to self-regulate, how does a child learn to self-regulate, and why is self-regulation important?

In acknowledgement of your contribution to the research, the researcher will donate two books to each cooperative preschool library. It is important for you to know that it is unethical to provide undue compensation or inducement to research participants and, if you agree to be a participant in this study, this donation to your cooperative preschool must not be coercive. If you would not otherwise choose to participate if the compensation was not offered, then you should decline.

Participation in this study will involve your time in thinking and talking about the children in your care. Your thoughts and reflections on the self-regulation of the children in your care are important. There are no known or anticipated risks to you or the children by participating in this research. The potential benefits of your participation in this research include contributing to the knowledge and understanding of how self-regulation is developmentally supported by parents and preschool educators. Also, this research could help parents and preschool educators plan, adapt and modify programs to improve young children's self-regulatory skill development for optimal readiness to learn. In addition you may benefit from thinking about yourself in the different roles you fulfill in your particular social, and community contexts and how you professionally and personally contribute to the development of the children in your care.

Your participation in this research must be completely voluntary. If you do decide to participate you may withdraw at any time, or refuse to answer certain questions without any consequences or any explanation. If you do withdraw from the study your audiotape and videotape will be erased and the transcripts of what you said will be destroyed. In the case of the focus group your contributions on the tape and in the type-written transcript will be removed as much as possible as it is sometimes difficult to extract what a person has said totally from a group discussion particularly if other participants build upon a comment you have made.

In order to make sure that you continue to voluntarily consent to participate in this research, my research assistants or I will remind you about the terms of participation (e.g., voluntary, ability to withdraw etc.) at the beginning of your interview, the focus group, and at the beginning of the day for videotaping of normal preschool interactions.

This research will lead to a self-regulation guide and directions for its use which I will share with you and your preschool and which will also be available in the public domain.

In order to preserve your anonymity, your name will not be recorded on the transcribed data, a code or pseudonym will be assigned and used in place of your name, and the researcher and research assistants will be the only people who know your identity. Your confidentiality and the confidentiality of the data will in part be protected by storing interview audiotapes, videotapes, the transcribed data and other information, the key to the coded names and the signed consent letters in locked filing cabinets. The key to the coded names will be kept separately from the interview data, and the signed consent letters will also be stored separately from any data. Only the researcher and research assistants will have access to the data and focus group members will be reminded to hold in confidence the content of the group discussions. The audiotape from your interview, videotapes, the transcribed data, and any notes taken during the interview will be destroyed within seven years.

A copy of the research newsletter will be given to the cooperative preschool community group at the end of the research project, and the findings will be published in monographs, theses, peer-reviewed journals, and presented at professional and/or scholarly conferences.

If you have any questions please contact Dr. Wanda Boyer at (250) 721-7814 or wboyer@uvic.ca. You may also contact the Associate Vice-President, Research at the University of Victoria (250) 472-4362 for information about this research.

If you are interested in participating, please complete the bottom portion of this sheet and return the top copy to Dr. Boyer while retaining the yellow copy for your files. You will be contacted by telephone or email to schedule an interview.

Respectfully,
Wanda Boyer, Ph.D.
University of Victoria

Name of Participant (print)

Telephone and E-mail

Signature

Date

Appendix D

Videotaping consent

As cited in Boyer, W. (2005, March). Understanding the acquisition of self-regulatory skills in children ages 3-5. *Paper presented for the ACEI Research Forum at the 113th Annual Association for Childhood Education (A.C.E.I.) International Conference, Washington, DC.*

<p style="text-align: center;">University of Victoria: Department of Educational Psychology and Leadership Studies</p>
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Foundational Measure of Early Childhood Development of Self-Regulation**Videotaping Consent**

As a part of the Research Study, I give permission for my child _____ (child's name) to be videotaped during his or her natural play with another child who is a participant of the study. This does not consent to either my participation or my child's participation in the study, but allows my child to be videotaped as a part of the natural play environment.

Child's Name: _____

Parent's Name: _____

Signature: _____

Telephone Number: _____

Date: _____

Appendix E

Individual Interview Questions

As cited in Boyer, W. (in press). Parental and Educator Perspectives on Young Children's Acquisition of Self-Regulatory Skills In M. R. Jalongo (Ed.) *The Significance of Interpersonal Relationships in Young Children's Lives*. New York: Springer Science and Business Media, LLC.

Foundational Measure of Early Childhood Development of Self-Regulation**Individual Interview Questions**

1) How would you describe the child in your care?

(Probe: What is the child like in terms of temperament?)

2) How do you define self-regulation?

(Probe: What does it mean to be able to self-regulate as a 3-5 year old?)

Initiation of Activities

3) How does the child in your care behave while doing an activity they do not want to do?

(Probe: How does the child in your care respond with her or his body, how does the child solve the problem of getting engaged in the activity, what does the child say, how does the child interact with others, what emotions does the child express and how does the child do what is right when told to do an activity the child did not choose? Please can you elaborate and give examples?)

4) And what do you do in words and actions as you interact with the child in order to help the child comply when they do not want to do an activity?

(Probe: What do you say and do after you have told the child to do an activity they do not want to do?)

5) How does the child respond when you have told the child to do an activity they do not want to do before the child can do another activity she or he wants to do?

(Probe: How does the child respond with her or his body, how does the child solve the problem of getting engaged in the activity, what does the child say, how does the child interact with others, what emotions does the child express and how does the child do what is right when you have told the child to do an activity the child does not want to do before they can do an activity she or he wants to do? Please can you elaborate and give examples?)

6) And what do you do in words and actions while interacting with the child in order to help her or him comply so they can do the first activity before they do the second activity?

(Probe: What do you say and do as the child is doing the first activity to help her or him "get on to the second activity?")

Ceasing Activities

- 7) How does the child wholistically react when you ask her or him to stop an activity because it is clean-up time or lunch time or the end of the day?

(Probe: When you tell the child to end or stop an activity how does the child respond with her or his body, how does the child solve the problem of finishing up the activity, what does the child say, how does the child interact with others, what emotions does the child express and how does the child do what is right? Please can you elaborate and give examples?)

- 8) And what do you do and say in order to the child comply if and when she or he does not want to stop an activity?

- 9) How does the child behave when you tell her or him to stop an inappropriate behaviour?

(Probe: This is when the child has been told to "Stop that. Don't do that." When you tell the child to stop an inappropriate behaviour how does the child respond with her or his body, how does the child solve the problem of stopping an inappropriate behaviour, what does the child say, how does the child interact with others, what emotions does the child express and how does the child do what is right? Please can you elaborate and give examples?)

- 10) And what do you say and do in order to help the child comply when the child does not want to stop an inappropriate behaviour?

(Probe: What do you say and do to help the child stop the inappropriate behaviour)

- 11) How does the child behave when you tell her or him to stop an activity in which they have been told before not to engage?

(Probe: This is when the child has been told "Don't do that anymore, or Don't do that at all?" When you tell the child to stop an activity in which they have been told before not to engage how does the child respond with her or his body, how does the child solve the problem of doing what they have been told not to do many times before, what does the child say, how does the child interact with others, what emotions does the child express and how does the child do what is right? Please can you elaborate and give examples?)

- 12) And what do you say and do in order to help her or him comply when the child does not want to stop an activity in which she or he has been told before not to engage?

(Probe: The child has been informed that the activity represents misbehaviour but does it anyway.)

Modulating Activities

13) How does the child behave when a task is difficult for her or him?

(Probe: As the difficulty of the task becomes apparent to the child, how does the child respond with her or his body, how does the child solve the problem, what does the child say, how does the child interact with others, what emotions does the child express and how does the child do what is right when told to do an activity that is hard for her or him? Please can you elaborate and give examples?)

14) And what do you do and say as the child does this difficult activity?

15) How does the child behave when a task is easy for her or him?

(Probe: How does the child respond with her or his body, how does the child solve the task, what does the child say, how does the child interact with others, what emotions does the child express and how does the child do what is right when told to do an activity that is easy? Please can you elaborate and give examples?)

16) And what do you do and say while the child is doing an activity that is easy for her or him?

17) How do you help the child to learn how to self-regulate?

(Probe: How do you teach the child how to begin an activity, stop an activity, and think about behaviours before they do them?)

18) Do you have any other thoughts you would like to add to this discussion?

Appendix F
Demographic Sheet

As cited in Boyer, W. (in press). Parental and Educator Perspectives on Young Children's Acquisition of Self-Regulatory Skills In M. R. Jalongo (Ed.) *The Significance of Interpersonal Relationships in Young Children's Lives*. New York: Springer Science and Business Media, LLC.

**Foundational Measure of Early Childhood Development of Self-Regulation
Demographic Sheet**

Your participation in this research must be completely voluntary. If you do decide to participate you may withdraw at any time, or refuse to answer certain questions without any consequences or any explanation. If you do withdraw from the study your audiotape and videotape will be erased and the transcripts of what you said will be destroyed. In the case of the focus group your contributions will not be included in the type-written transcript.

Background information for parents Name of Parents _____
Name of Parents _____
Name of Child _____

What is your age? _____

Gender female male

How are you employed? _____ (name of job)

Marital status married common law separated divorced unmarried/single

How is your spouse or partner employed? _____ (name of job)

Ethnic background of children _____

Number of children _____

Age of child enrolled in the preschool ___ years ___ months

Gender of your preschool child female male

Siblings:

Child's age ___ years ___ months female male

Child's age ___ years ___ months female male

Child's age ___ years ___ months female male

Child's age ___ years ___ months female male

Child's age ___ years ___ months female male

Child's age ___ years ___ months female male

Child's age ___ years ___ months female male

Child's age ___ years ___ months female male

Background information for early childhood educators: Name _____

What is your age? _____

Gender female male

What are your years in service as an early childhood educator? _____

What are your years of pre-service training? _____

Number of children morning program? _____

Number of children afternoon program? _____

Number of trained workers working at one time _____

Number of additional trained support staff _____

Participant Consent

UNIVERSITY OF VICTORIA
 OFFICE OF THE VICE-PRESIDENT, RESEARCH
 HUMAN RESEARCH ETHICS COMMITTEE

Script for ongoing child consent

Boyer, W. (in press). Parental and Educator Perspectives on Young Children's Acquisition of Self-Regulatory Skills In M. R. Jalongo (Ed.) *The Significance of Interpersonal Relationships in Young Children's Lives*. New York: Springer Science and Business Media, LLC.

Foundational Measure of Early Childhood Development of Self-Regulation**Script for Ongoing Child Consent**

This is a script to recruit through ethical means the voluntary participation of 3-5 year olds which would allow the researcher and research assistants to videotape the child during her/his natural play experience throughout natural preschool interactions.

The researcher and or the research assistants introduce themselves to the child by saying: "Hello my name is _____ and I am from the University of Victoria (the big school for big students) what's your name? (child gives name). Hello, _____ (use the child's name).

While you are here today, I will be videotaping this area to learn how children play together. You can play in this area. You don't have to do anything different; just play and be yourself. Are you OK with being videotaped today?" If the child does not consent through verbal or non-verbal means, then say "You can say 'no I don't want to be videotaped today' and that is not a problem. I will find you another place for you to play." Gently take the child to an alternate play location at the same preschool facility where the child feels comfortable playing at this time.

Appendix H

Preschool Self-Regulation Observation Coding Guidelines

As cited in Boyer, W. (2007, May). *Transformative Education: Cross-Cultural Play Behaviors and Emotional Regulation*. Presented at the Association for Childhood Education (A.C.E.I.) International Conference, Tampa, FL.

Preschool Self-Regulation Observation Coding Guidelines
Adult to Child or Child to Peer Interaction (See p. 1)
Developed by Wanda Boyer, Lisa Blodgett, & Emily Turk (2005)

<u>What is the behaviour</u>	Note the activity here.
<u>What is the goal:</u>	What does the child intend to do (i.e, make a tower) ?
<u>Setting:</u>	Where does the action take place (i.e, what center ?)
<u>Who is involved?</u>	There could be two adults together interacting with one child. Also note children present (i.e., note specifically # of boys or # of girls who are 'present' or stay with the child or come back to play).

* This is important information because it could demonstrate a pattern of friendship.

PART I. ECE/ PARENT OR CHILD RESPONSE.

Questions to ask yourself in order to decide how to describe the behaviours that the ECE /Parent or Child demonstrates in one or more dimensions when interacting with a Child or Peer:

1. PHYSICAL

1.01 The ECE / Parent or Child reaches out (i.e, touches, puts an arm around the child's or peer's shoulders, brings to new location, lifts body, moves legs or arms in correct position).

2. PROBLEM-SOLVING

2.01 The ECE/ Parent or Child tries to get the Child or Peer to solve the problem or does the activity for them.

3. LANGUAGE

3.01 The ECE/Parent or Child talks, sings, chants to the Child or Peer (i.e., to encourage the child to respond).

4. SOCIAL ASSISTANCE

4.01 The ECE/ Parent or Child offers assistance to the Child or Peer (i.e, with language or physical help).

5. EMOTIONAL RESPONSE

5.01 The ECE/Parent or Child says "I feel sad when you do this." "That was great...." "I like...."

6. MORAL

6.01 The ECE /Parent or Child tells the Child or Peer that behaviour was right (i.e, in words "That was a nice 'or 'That was helpful.'

6.02 The ECE/Parent or Child tells the Child or Peer that the behaviour was wrong (i.e, in words, "That hurt" or by moving or stopping the child if the behaviour is disturbing or hurtful).

PART II. Child Response to ECE/Parent/ or the Child's response to Peer. Describe what the child does (May be both Number 2 followed by Number 3).

Child Response to ECE or Parent	Peer Response to Child
<p>1. Compliance (Kochanska, 1993) 1.01 Does the child do what she/he is asked to do? 1.02 Does the child nod her/his head and then do the task?</p>	<p>1. Positive Interaction 1.01 Does the peer do what she/he is asked to do? 1.02 Does the peer nod her/his head and then do the task/share?</p>
<p>2. Non-compliance (self-assertion) (Stifter, Spinrad, & Braungart-Rieker, 1999) 2.01 Does the child say "no" or "not now" without words? 2.02 Does the child say "no" or "not now" with words? 2.03 Does the child try to get the adult to change his or her mind/plan (e.g. take them by the hand to another activity)?</p>	<p>2. Self-Assertion 2.01 Does the peer say "no" or "not without words? 2.02 Does the peer say say "no" or "not now withwords? 2.03 Does the peer try to get the child to change his or her mind/plan, or distract (e.g. sing a song, play a new game, play with words)?</p>
<p>3. Non-compliance (passive, avoidance, defiance) (Stifter, Spinrad, & Braungart-Rieker, 1999) 3.01 Does the child not do what is asked of him or her (no words, no actions-passive) 3.02 Does the child look away, move away, not participate in the activity (avoidance) 3.03 Does the child change the activity, have a tantrum, scream, get angry or physically aggressive (e.g., pushing or hitting- defiance)?</p>	<p>3. Passive/Avoidance/Defiance 3.01 Does the peer not do what is asked of her or him (no words, no actions – passive)? 3.0 Does the peer look away, move away? (avoidance) 3.03 Does the peer actively changes the activity have a tantrum, scream, get angry or physically aggressive (e.g., pushing, hitting, running over with a bike- defiance)?</p>

PART III. ECE/Parent Response to Child or Child Response to Peer. What does the ECE or Parent say in response to what the Child says to them? What does the Child say to the peer in response to what transpired in part II?

ECE or Parent Response to Child	Child Response to Peer
<p>1. Supporting Compliance (Stifter, Spinrad, & Braungart-Rieker, 1999) 1.01 Does the adult try to get a child who is neutral or happy to complete the task/activity using physical actions, words, expression of her or his emotions ‘ or actions they have used in part I. as encouragement (i.e, describe the behaviour)?</p>	<p>1. Interpersonal Support (Denham, Blair, DeMulder, Levitas, Sawyer, Auerbach-Major, & Queenan, 2003, pp. 251-253) 1.01 Does the child try to encourage a neutral or happy peer to complete the task/activity using happy emotions during positive interactions, identifying the emotions of another child to prevent conflict, and positive peer behaviour and regulate their own emotions by controlling negativity and outbursts of temper and distress?</p>
<p>2. Positive Reinforcement (Support of Adult Goals) (Stifter, Spinrad, & Braungart-Rieker, 1999) 2.01 Does the adult praise the child for behaviour(e.g.“You did that well)?</p>	<p>2. Affiliation (Zahn-Waxler, Cole, Richardson, Friedman, Michel, & Belouad, 1994, p. 104) 2.01 Child demonstrates affection giving or sharing of positive emotions in the absence of distress (e.g., holds hands, dances, eat together)?</p>
<p>3. Modification of Adult response to the Child (Hastings & Grusec, 1997) 3.01 Does the adult note that the child is not doing the activity or is becoming angry and the adult modifies their own response to fit child’s behaviour (i.e., they change their plan or expectations based on reading the behaviours/needs of the child)?</p>	<p>3. Constructive Coping (Eisenberg, Fabes, Bernzweig, Karbon, Poulin, Hanish, 1993, pp 1423-1424) 3.01 Instrumental coping or problem-solving- Child takes some constructive action to improve a problem situation with angry peer (i.e. shares toys)? 3.02 Does the child seek support from ECE/Parent or a different peer?</p>
<p>4. Negation – Tell a child to stop outright</p>	<p>4. Negative Emotions (Zahn-Waxler, Cole, Richardson, Friedman, Michel, & Belouad, 1994, p. 105) 4.01 Does child exhibit angry or aggressive behaviour (i.e. pushing, hitting, running over with bike) ? 4.02 Does child exhibit sad emotions (i.e. crying)?</p>
<p>5. Avoidance/ No Response 5.01 Does adult look or move away? 5.02 Does the adult continue behaviour with no response between adult and child?</p>	<p>5. Avoidance/ No Response 5.01 Does child look or move away? 5.02 Does the child continue behaviour with no response between child and peer?</p>

Preschool Self-Regulation Study Observation Coding Guidelines
Adult to Child or Child to Peer Interaction (page 1)
 Developed by Wanda Boyer, Lisa Blodgett, & Emily Turk (2004)

Child's Name: _____ Child #: _____ School#: _____ Age: _____ Date: _____

SCENE	BEHAVIOUR #	BEHAVIOUR #	BEHAVIOUR #
Behaviour			
Goal			
Setting			
Who Is Involved?			
ECE /Parent /Child	ECE / Parent / Child	ECE / Parent / Child	ECE / Parent / Child
Physical Help – Adult (A) or Child			
Problem Solving – Adult or Child			
Language – Adult or Child			
Social Assistance – Adult or Child			
Emotional – Adult or Child			
Moral Response – Adult or Child			
Child /Peer	Child / Peer	Child / Peer	Child / Peer
Compliance – Child Positive Interaction – Peer			
Interaction – Child Self-Assertion – Peer			
Non Compliance -Child Passive, Avoidance Defiance– Peer			
ECE /Parent / Child	ECE / Parent / Child	ECE / Parent / Child	ECE / Parent / Child
Supporting Compliance - A Interpersonal Support – Child			
Reinforcement – Adult Affiliation – Child			
Modification – Adult Constructive Coping – Child			
Negation – Adult Negative Emotions - Child			
Avoidance/ No Response– Adult Avoidance/ No Response – Child			

Preschool Self-Regulation Observation Coding Guidelines for Child Behaviour (See p.2)
Developed by Wanda Boyer, Lisa Blodgett, & Emily Turk (2004)

INITIATING, MODULATING & CEASING

The child is viewed holistically. Therefore, the child's behaviour may not reflect one dimension (ie. physical, language, problem solving etc.) solely, but may include multiple dimensions within one initiating, ceasing or modulating response.

New Behaviours

The following questions may indicate the beginning of a new behaviour.

- Does the child engage in a new game, or with a new object? *If yes, then it is a new behaviour.*
- Does the child return, within a very short time, to the original object, game or location? *If no, then it is a new behaviour.*

(The child may move to a new location to begin a new activity, or there may be new children or adults involved in a new activity).

INITIATING

Begins when:

- a. Content/topic is new (see guidelines for new behaviour)
- b. Likely contains a physical response
- c. Commences at the beginning of the taped segment

MODULATING

Begins when:

- a. There is a change in the direction of the activity
- b. The child adapts or modifies his/her response within the behaviour
- c. The use of language within the behaviour is not necessarily the beginning of modulation
- d. Likely contains a physical response

CEASING

Occurs when:

- a. The child indicates completion of activity through language, physically leaving, problem-solving, social assistance, etc.
- b. The child is cued by an external prompt from ECE or adult, or an invitation from another child
- c. There is a departure from the original activity
- d. May contain physical behaviour prior to initiation of next activity such as walking or wandering around or watching others.
- e. If tape ends, describe what the behaviour constitutes at that time such as physical, language, problem-solving etc.

Please consider these questions to determine whether a child's behaviour reflects one or more of the following six dimensions* :

1. PHYSICAL

1.01 What does the child do with his whole body in terms of moving, standing still, resting?

2. PROBLEM-SOLVING

2.01 How does the child handle problems that he or she *sets out for herself/himself*?

2.02 If the ECE or parent helper asks the child to do a task without telling the child how to do it then how does the child handle this problem?

2.03 Does the child ask 'What can I do? Or 'I need help'?

2.04 Does the child stand still and watch another child, or move in one place, or go to another location and come back with a solution?

2.05 How does the child handle lack of resources (e.g. sharing a toy) ?

3. LANGUAGE

3.01 What does the child *say, sing, chant* to others (children, ECE, parent helper, their own parents or to an imaginary friend)?

3.02 What does the child *say, sing, or chant* to herself/himself.

3.03 The viewer may not be able to hear the exact words but sees the lips and body moving and or a response from another person to the child based on these 'hard to hear' words. Is the child talking or using language?

4. SOCIAL ASSISTANCE

4.01 What does a child do to seek help when she/he cannot start or complete a task?

4.02 What does a child do to give help to another child, ECE, parent helper, visitor (i.e, share toy, give glue or material directly to the person)

5. EMOTIONAL *

5.01 How does the child express happiness, sadness, fear, anxiety? (Note the emotions should be expressed in words (i.e., I am happy, I did it) or physical behaviours (i.e, crying, smiling, laughing, reaching out to adult with hand).

6. MORAL *

6.01 Is the behaviour helping, hurting, or disturbing the ECE, another child, parent helper, their own parent(s) (i.e, the individual asks the child to stop, tells the child her/his behaviour is helping or hurting or disturbing? Or stops the main action to physically stop or redirect the child)

6.02 Does the child seek confirmation or approval, for his helping, hurting or disturbing behaviour from other children, ECE, parent helpers, their own parent(s), visitors?

6.03 Does the child glance to see if anyone noticed his hurting or disturbing behaviour? (i.e., looks at ECE, parent helper, her/his parent, visitors)

6.04 Is the child praised or admonished by others? (i.e., shaking of their heads, saying no, wagging fingers to say no, words that suggest she or he is wrong)

* Note the ECE or parent helper may or may not correct behaviour but ignore the behaviour because of their personal educational philosophy.

**Preschool Self-Regulation Study Observation Coding Guidelines
For Child Behaviour (page 2)
Developed by Wanda Boyer, Lisa Blodgett, & Emily Turk (2004)**

Child's Name: _____ **Child #:** _____ **School#:** _____ **Age:** _____ **Date:** _____

INITIATION	CHILD BEHAVIOUR #	CHILD BEHAVIOUR #	CHILD BEHAVIOUR #
Physical – join in			
Problem Solving – pose question			
Language – talk to friend			
Social Assistance – “Help Me.”			
Emotional – “I want to play.”			
Moral – “Come play”			
MODULATING			
Physical – move an object			
Problem Solving – share/ remove			
Language – distract using words			
Social Assistance – “I’m going to tell”			
Emotional – “This is my game.”			
Moral – “Am I doing it right?”			
CEASING			
Physical – leaving			
Problem Solving – can we keep it?			
Language – it’s time to go			
Social Assistance – “I did it.”			
Emotional – “I don’t like it.”			
Moral – “This is not right, we should stop.”			

Appendix I

Abbreviations Used in Analysis

Conflict Strategies	Abbreviation
interpersonal support & prosocial	PRO
aggression	AGG
negative emotion	NEG
avoidance	AVD
Assertive	ASSERT
Self-regulatory Strategies	Abbreviation
physical	PHY
problem-solving	PS
language	LA
social assistance	SA
emotional	EM
moral	MOR
Play Conditions	Abbreviation
peer play (parallel)	PPp
peer play (cooperative)	PPc
solitary play	SP
adult/ECE interaction	AI
Self-regulation sequence	Abbreviation
Initiating	IN
Modulating	MOD
Ceasing	CEAS
Child Temperament	Abbreviation
overactive	OA
disruptive	DR
aggressive	AGG
negatively emotional	NEM
defiant	DEF
impulsive	IMP
inattentive	INA