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AGGRESSIVE AND NON-AGGRESSIVE PRESCHOOLERS' PROBLEM-SOLVING:
THE ROLE OF MATERNAL SCAFFOLDING

by

Robert Clark

A Thesis
Submitted to the Faculty of Graduate Studies and Research
through Psychology
in Partial Fulfillment of the Requirements for
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Abstract

Aggressive children suffer from deficits with respect to their ability to self-regulate. One way caregivers foster their children's self-regulatory development is through the teaching of problem-solving skills. This study examined the role of maternal scaffolding in terms of its relationship to children's aggression and social competence. Sixty mother-child dyads (30 aggressive, 30 non-aggressive) engaged in a 10-minute structured task (ERA; Clarke, Musick, Stott, Klehr, & Cohler, 1984). Utilizing the Parental Scaffolding Coding Manual (Neitzel & Stright, 2003), mothers were assessed with respect to 7 scaffolding behaviours encompassing cognitive, emotional, and autonomy support. The results revealed that compared to mothers of aggressive preschoolers, mothers of non-aggressive preschoolers were significantly more effective "scaffolders" across 6 of the 7 behaviours including: regulation of task difficulty, review, emotional support, rejection, control, and encouragement. Only mothers' use of metacognitive information failed to reach a statistically significant difference. In addition, maternal scaffolding was significantly related to children's cooperation, responsibility, and self-control. The pattern of relationships between maternal scaffolding and children's social competence was different by group. For the non-aggressive pairs, mothers' regulation of task difficulty, review, and control were significantly related to children's cooperation, assertion, responsibility, and self-control. With respect to the aggressive pairs, mothers scaffolding was significantly related to children's responsibility. The results of the study are interpreted in terms of their importance for children's development of self-regulation and treatment models for childhood aggression.

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CHAPTER I

Introduction

General Context and Objectives of the Present Study

Childhood aggression represents one of the most substantial problems affecting the public today (Lochman, Whidby, & Fitzgerald, 2000). The effects of childhood aggression permeate nearly every sphere of our society from education and health care to the penal system and unemployment. More troubling, is the notion that childhood aggression is remarkably stable over time with stability coefficients decreasing only moderately over a ten-year interval (Farrington, 1991; Olweus, 1979). Given the extent of its impact on the individual and society, the problem of childhood aggression warrants the wealth of attention it has received in recent years.

Children's aggressive-disruptive behaviour is the most common reason for referral to children's mental health services (Bierman, 2003; Lochman & Lenhart, 1995). While this is likely due, in part, to the overt nature of its expression, referrals for childhood aggression remain critical as it is correlated with a plethora of negative outcomes in both adolescence and adulthood. Childhood aggression is associated with an increased likelihood of school dropout and delinquency in adolescence as well as criminality and psychopathology in adulthood (Cairns, Cairns, & Neckerman, 1989; Parker & Asher, 1987). Outcomes such as the above have prompted researchers to examine the characteristics that separate aggressive children from their less hostile peers. These negative outcomes highlight the importance of investigating the early factors that contribute to childhood expressions of aggression.

One of the expected achievements of childhood is to develop the ability to modulate behaviour in relation to the cognitive, affective, and social demands of a particular situation (Erikson, 1959; Posner & Rothbart, 2000). This ability, termed self-regulation, permits the child to monitor, plan, and control their own behaviour in order to achieve particular goals (Posner & Rothbart, 2000). Gradually, children acquire the capacity to initiate meaningful actions by way of their own volition separate from that of their caregivers. In the process, children hone the skills needed to deal with challenges in their environment and develop a sense of personal agency that increasingly provides them with the confidence to manage situations in a self-directed fashion and relate to others in more mature ways (Erikson, 1959).

Self-regulatory behaviour begins prenatally and continues to emerge in a more sophisticated fashion across childhood (Posner & Rothbart, 2000). It is at the preschool age that potential self-regulatory deficiencies become of paramount importance. During the preschool years children prepare for the cognitive, emotional and social challenges they will face in the school environment. Children who have yet to develop the cognitive, emotional, behavioural, and motivational components necessary for successful school performance represent those who are at risk for future referral for intervention, especially in regards to aggression. Typically, children's aggression begins to decline following preschool, however many children continue on a path of increasing aggression into adolescence (Tremblay et al., 2005). The behavioural difficulties these children display are indicative of a failure in self-regulatory development during preschool.

The development of increased self-regulation can be seen as a product of the natural striving for growth and development that is facilitated by the supportive role of

one's caregiver. It is within this relationship that the child receives the cognitive, emotional, and autonomy support that provides the foundation required to engage in purposeful and self-directed behaviour. It has been documented that many children do not receive the requisite support needed to promote their development of self-regulation (Calkins & Johnson, 1998). As a result of this neglect, these children fail to experience cause-effect relationships, are not modeled or given practice with adaptive behaviours, nor do they learn relationship building skills. In turn, they are overly dependent on adults for direction, fail to develop coping strategies, and thus may act out aggressively when confronted with situations beyond their capabilities.

In order to equip children with the necessary strategies and supportive context for their development of self-regulation, parents demonstrate and convey problem-solving skills through various interpersonal experiences and the process of scaffolding. The construct of scaffolding, originally defined by Wood, Bruner, and Ross (1976), refers to an adult's control over the elements of a task that are initially outside the child's abilities in order for the child to concentrate their efforts on the elements they are capable of managing. As the scaffolding progresses, the adult must remain sensitive to the successes and failures of the child and institute further instruction in accordance with their performance. Aside from modeling and teaching cognitive strategies for successful task completion, this process provides the emotional and autonomy support that is essential for the integration of these strategies and further development of self-regulation (Neitzel & Stright, 2003). In essence, caregiver scaffolding provides the foundation for the child's development of self-regulatory competence.

The primary objective of the present study is to identify salient differences in the ways in which mothers of aggressive and non-aggressive children structure and respond to problem-solving tasks for their children. In doing so, this study will highlight the importance of the scaffolding process in delineating problem-solving skills for the development of self-regulation. Furthermore, this study will explore maternal variety between the groups with respect to the cognitive, emotional, and autonomy support that is integral to the development of self-regulatory behaviour.

Previous research has demonstrated that parents of aggressive preschoolers exhibit a number of characteristics that would suggest they experience difficulty in providing support for their children in the areas of cognitions, emotions and autonomy. Both mothers and fathers of aggressive preschoolers are more likely to endorse teaching styles that deny their children the opportunity to think about alternative perspectives, consequences for their actions, and social planning (Sigel, 1982). In addition, parents of aggressive children have been consistently shown to exhibit rejection, a lack of warmth, and an absence of positive affect during interactions with their child (Bates & Bayles, 1988; Booth, Rose-Krasnor, McKinnon, & Rubin, 1994; Campbell, Pierce, Moore, Markovitz, & Newby, 1996). Moreover, with respect to promoting their child's volitional control of behaviour, parents of aggressive preschoolers are more likely than parents of non-aggressive preschoolers to select a direct approach in order to teach social skills (Rubin & Mills, 1990). This approach is characterized by parents telling their child what to do and how to behave and permits the child only a limited opportunity for the development of their own style of interaction. These studies suggest that parents of

aggressive preschoolers may less effectively scaffold problem-solving tasks for their children, thereby impacting their development of self-regulation.

The present study will attempt to contribute to the research examining the relationship between the development of children's aggression, self-regulation, and social competence by addressing a number of issues. First, assuming problem-solving skill deficits, early interventions addressed children's aggression through the teaching of problem-solving skill strategies (Spivack & Shure, 1974). Despite the instructional nature of these approaches, the scaffolding construct has remained situated in literature focusing on children's academic success (Conner, Knight, & Cross, 1997; Neitzel & Stright, 2003; Pratt, Kerig, Cowan, & Cowan, 1988; Stright, Neitzel, Sears, & Hoke-Sinex, 2001). Surprisingly little attention has been paid to scaffolding in terms of the development of problem-solving skills as they pertain to the prevention of children's aggression or the development of children's prosocial behaviour. Secondly, much of the research with respect to intervention for aggressive children centers on middle-childhood and adolescence despite studies that suggest the preschool stage represents the most aggressive period in the lifespan (Cairns, 1979; Tremblay et al., 2005). Only recently have authors begun to emphasize the need for interventions to be designed for preschoolers (Lochman, 2003; Webster-Stratton, 2003). Thirdly, recent literature focusing on the treatment of aggressive preschoolers has pointed to the need for greater concentration on interactions in the parent-child dyad (Domitrovich & Greenberg, 2003; Menna & Landy, 2001; Webster-Stratton, 2003). This relationship represents the optimal arena for the development of problem-solving, and more specifically, self-regulatory behaviour. In concentrating on the parent-child dyad, this study will attempt to expand on

previous studies by extending the examination of scaffolding beyond its cognitive aspects to include emotional and autonomy supportive components. In this way, the present study will attempt to identify how mothers of aggressive and non-aggressive preschoolers differ with respect to their scaffolding of preschooler's problem-solving skills.

CHAPTER II

Review of Literature

Theoretical Views on the Development of Self-Regulation

Piaget's cognitive-constructionist view of development. For Piaget (1952), humans

self-regulate on the basis of mental structures, he termed schemes, which serve to

organize their mental, physical, and sensory experience. More than simply organizing

entities, schemes provide children with a working model of their world characterized by a

continuously evolving understanding of the regularity in space and time of the persisting

objects, and their properties, within one's environment (Isaacs, 1972). Humans maintain

these schemes throughout their lives allowing for the regulation of all planning and action

(Isaacs, 1972). While infants are born with a few rudimentary and primarily inaccurate

schemes, Piaget (1952) suggests that children largely construct schemes through their

experience with objects, including other humans. In this way, Piaget saw children as

active agents in their own cognitive and, in many respects, self-regulatory development.

Despite early developments toward more self-regulated behaviour, Piaget viewed

preschoolers as still possessing largely immature cognitive capacities which may

predispose them to aggressive behaviour (Isaacs, 1972). He describes preschoolers as

constantly expanding and enriching their inward model through organizing and re-

organizing while their understanding of space- and time-relations becomes more diverse

(Isaacs, 1972). Nevertheless, according to Piaget (1954) preschool children are still

limited by their inability to perceive the world from any perspective other than their own.

As a result, they struggle with information that is not consistent with their prior

experiences and they assume that those around them see the world just as they do. This

style of thinking sets the stage for many conflicts as the child's world begins to expand in the preschool, daycare, or kindergarten setting. Given these limitations it would seem that aggression during the preschool years would be an inherent and unavoidable reality. However, follow-up studies examining the validity of Piaget's findings tend to disprove his pessimistic view of this stage. Flavell and colleagues (Flavell, Green, & Flavell, 1990) have discovered that 2- and 3-year-old children understand that others may view objects or events differently than they do. These researchers found that children of this age recognize that others may perceive objects based on their own respective position in relation to the object rather than the child's. While rudimentary, this understanding begins to expand at age 4 and 5 when the child creates a set of intricate rules for how to understand the ways in which others experience phenomena. These findings suggest that preschoolers may be more capable of perspective taking than Piaget originally believed. Moreover, they suggest that the inevitability of preschooler aggression may be inaccurate insofar as preschoolers are capable of the more sophisticated cognitive abilities necessary to prevent its expression.

Vygotsky's socio-cultural view of development. Where Vygotsky's views on child development resonate with those interested in children's self-regulation is with his emphasis on the social nature of development. Vygotsky saw children's growth as dependent on a dialectical process involving the interaction between children and more skilled individuals (e.g., caregivers) in their environment (Wink & Putney, 2002). The currency of growth whether knowledge or skill, is initially outside the child's mastery and is only known to the child through their interactions with these individuals. Over the course of many such interactions children begin to internalize this information and

simultaneously gain a sense of mastery over it. For Vygotsky, language represents the vital tool in this process (Bruner, 1987). Through language, more skilled individuals transmit the culturally determined elements regarded as important for development including norms and rules as well as more specific aptitudes such as academic skills and problem-solving techniques. In this way, learning leads development as children progressively gain the capacities required for greater self-regulatory control over their thoughts, emotions, and behaviour from those more skilled individuals who assume the task of assisting in their growth. Perhaps not surprisingly, Vygotsky's work has found wide acceptance in the field of education (e.g., Conner, Knight, & Cross, 1997; Conner & Cross, 2003; Neitzel & Stright, 2003; Stright, Neitzel, Sears, & Hoke-Sinex, 2001), albeit his work holds particular importance for the parent-child relationship as well.

For Vygotsky, the development of inner speech represents the key for children's self-regulation. Prior to their unification, Vygotsky viewed thought and speech as progressing along different developmental trajectories and were initially separate processes. He posited that this was a result of the fact that thought and speech were qualitatively different in nature. While thought is revealed to humans in whole, speech is partitioned into separate units. The caregiver or teacher facilitates the child's unification of thought and speech by infusing meaning into their early problem-solving attempts. Through shared problem-solving interactions guided by more experienced adults, children are enabled the opportunity to gain an understanding of the rationale behind decision-making and cause-effect relationships. In turn, they learn that the strategies developed during interactions with more experienced adults can be internalized and used to solve problems in a more self-directed fashion. For Vygotsky, once children link

thought with speech through meaning, their overt speech, previously directed towards adults in order to elicit assistance with their problems, is turned inward as children begin to guide themselves through problem situations (Vygotsky & Luria, 1994).

Piaget and Vygotsky: The role of egocentric speech. In spite of the fact that the works of Piaget and Vygotsky are often presented as opposing views on development, they in fact share many aspects relevant to the establishment of self-regulation. Each of these theorists views the advent of speech and language as the critical development of the preschool period. While in different ways, these theorists suggest that this development illustrates the beginnings of the child's capacity to regulate their own cognitions, emotions, and behaviours as speech enables them to expand their ability to solve problems.

Approximately during the second year, children display what both Piaget and Vygotsky saw as egocentric speech. Specifically, egocentric speech refers to utterances void of a social purpose and which seem to accompany action. Despite the fact that both theorists acknowledged this brief developmental phenomenon, they explained it in vastly different ways. While Piaget saw egocentric speech as a product of the child's stage in development, Vygotsky regarded it as the reproduction of instructions or dictates previously provided to them by a more skilled individual (Wink & Putney, 2002). Thus, Piaget believed egocentric speech simply disappeared when children reached their next stage in development. In contrast, Vygotsky suggested egocentric speech was internalized by the child and became what he saw as the agent for self-regulation, namely inner speech (Vygtosky, 1962). At this point in the child's development, speech no longer accompanies action but precedes and directs it. Speech serves to reorganize thinking to

the extent that the child gains the ability to use language for the purpose of planning and guiding his thoughts, emotions, as well as his behaviour toward predetermined ends. Unlike Piaget, Vygotsky did not see the internalization of egocentric speech as spontaneous or the result of mere innate processes. Instead, he identified meaning as the distinctive catalyst required for the union of thought and speech (Vygotsky, 1962). In this way, Vygotsky implicates the role of the caregiver as integral in the child's development of self-regulation.

   Contemporary views of the development of self-regulation. While still rooted in the works of Piaget and Vygotsky, more recent investigations of children's self-regulatory development have examined it in relation to a number of independent but complimentary dimensions. One dimension has been to look at self-regulation from a cognitive standpoint. Rothbart and Posner (1985) assert that the child's developing ability to control their own thought processes in the presence of competing stimuli represents the hallmark of self-regulation. In addition, self-regulation has been examined as an emotional construct whereby children develop the ability to enhance or inhibit their experience of feelings in accordance with situational stimuli (Cicchetti, Ganiban, & Barnett, 1991; Kopp 1982). Self-regulation is often associated with appropriate emotional responses and behavioural expression. As Vygotsky (1978) predicted, over the course of development, children begin to move beyond simply complying with caregiver requests and begin to internalize these demands for self-initiated and self-motivated behaviour (Kochanska & Askan, 1995; Kopp, 1982). Additionally, children develop the ability to delay gratification or refrain from acting on impulse in favour of more socially acceptable behaviours (Mishcel, 1974). Regardless of the area of specialization, these self-regulatory

processes are guided by the child's inherent motivation towards enacting self-initiated and purposeful behaviour. The maturation of these self-regulatory dimensions compliment each others' development insofar as they are integrated to permit more self-directed and meaningful behaviour to be exercised by the child (Cicchetti et al., 1995).

Cognitive-regulation. One area in which considerable difference has been found is in the temperamental qualities of expression during approach and fearful behaviour. These qualities serve to motivate an individual to initiate motor, attentional and autonomic processes for the purpose of volitionally enacting adaptive responses to social stimuli (Rothbart, Derryberry, & Posner, 1994). Additionally, opposing qualities associated with approach and avoidance serve to counteract each other's influence in order to regulate behaviour. Despite an innate regulatory balance, many children possess a greater disposition towards one temperamental quality over the other. In this way, cognitive-regulation in the form of effortful control over attentional processes, becomes essential for the child to modulate their behavioural and emotional expression in order to produce more socially acceptable conduct (Rothbart & Ahadi, 1994).

When presented with stimuli that suggest positive outcomes, children tend to enact approach behaviours in order to derive benefits from the situation. This premise underlies Gray's (1987) model of a "behavioural activation system". According to Gray, when individuals are presented with perceived inputs that indicate that a reward is likely, a series of neurological functions occur that result in initiating the approach behaviours. However, while many approach behaviours can be characterized as prosocial, significant variability is commonplace among children (Rothbart, 1988). Research with 6- and 7-year-olds suggests that aggression is positively related to a representative approach

behaviour (i.e., surgency) as well as negative affectivity (e.g., anger) (Rothbart, Ahadi, & Hershey, 1994). Thus, it has been suggested that behavioural maladjustment difficulties such as aggression could be the result of strong approach behaviour tendencies (Quay, 1993). In contrast, children who are predisposed to weak approach tendencies are vulnerable to internalizing difficulties, such as anxiety and depression. In essence, these children are exhibiting inadequate self-regulation in the form of under-control and over-control, respectively. Accordingly, Derryberry and Rothbart (1997) suggest that the regulation of approach tendencies is one of the most important elements of early socialization.

In addition to approach behaviours, Gray (1987) posits that humans possess complimentary defensive or fearful behaviours. When confronted by novel stimuli, similar neurological functions initiate inhibitory processes that promote passive avoidance, heightened arousal, and a diversion of attention towards more pertinent information (Gray, 1987). These neurological functions allow for the concentration of attention (Derryberry & Rothbart, 1997). The purpose of such functions is to protect the individual from potentially harmful situations. A further function of fearful behaviours is to regulate approach behaviours as a result of their incompatible goals (Gray, 1987). During situations in which approach behaviours may be inappropriate, fearful behaviours suppress this motivation and deter the individual from further action. Nevertheless, as with the approach behaviours detailed above, individual differences in fearful tendencies begin to appear towards the end of the child's first year (Rothbart, 1988). As such, many children exhibit weak fear regulation capacities, which may have the effect of promoting externalizing problems such as aggression (Quay, 1993). Similarly, children who possess

weak approach tendencies are vulnerable to internalizing disorders. In sum, these temperamental predispositions leave children prone to maladaptive behaviour.

For children whose innate regulatory processes are inadequate, the development of a modicum of cognitive-regulation becomes imperative. For instance, a child with elevated approach behaviours and low fearful behaviours is likely to concentrate their attention on the potential rewards of a particular situation without adequately assessing the potential threats (Derryberry & Rothbart, 1997). Thus, they are likely to behave impulsively before considering the relevant social cues provided to them by the situation. This is consistent with research in regards to social information processing that suggests that aggressive children consider fewer cues before making a decision (Slaby & Guerra, 1988). In such situations, adequate effortful control allows the child to voluntarily decrease the amount of attention directed at potential rewards and to simultaneously increase attention towards the possible threats. The attentional flexibility afforded by the child's effortful control provides them with more effective coping strategies. Evidence to support this assertion is provided in a study by Rothbart et al. (1994). These researchers found that aggression was positively related to an approach behaviour and negative affectivity. However, in contrast, it was discovered that aggression was negatively related to effortful control, yet no unique variance was contributed by this finding. As a result of these relationships, Rothbart and colleagues asserted that effortful control may regulate aggressive expression by controlling the reactive tendencies that underlie approach behaviours and negative affectivity.

Emotion-regulation. Emotions serve socialization, communication and adaptive functions for humans. For instance, the expression of joy can serve to maintain

interaction with others. Similarly, anger can serve the purpose of motivating an individual to overcome obstacles in their environment (Cicchetti, Ackerman, & Izard, 1995). In spite of these adaptive functions, problems begin to arise when the intensity of emotions interferes with social, psychological and intellectual development. Children must develop the capacity to manage, modulate, inhibit, and enhance emotions in accordance with the social demands of a particular situation (Cicchetti et al., 1991). Once this developmental task is satisfied, children possess the ability to flexibly manage their emotions insofar as to permit them to recognize their adaptive qualities without detracting from participation in their environment (Grolnick & Farkas, 2002). In the case of the aggressive child, the development of adequate emotion-regulation has largely failed. This failure may be the result of any one of four pathways outlined by Cicchetti and associates as important for the regulation of emotions.

Cicchetti and associates (Cicchetti et al., 1995) detail four aspects of control mechanisms, which aid in the regulation of emotion by attenuating the intensity of emotions and synchronizing emotion and behaviour. Each of these aspects provides a rationale for the origin of aggression as a consequence of control mechanism dysfunction. The first of these aspects refers to the ability to control the distinct causes of emotions. Izard (1993) provides a model outlining the activation of emotion, which suggests emotion is a product of the interaction of various neural, sensorimotor, affective, and cognitive cues. Due to the interactive quality of these cues, it is crucial that children develop the regulatory functions that enable them to limit arousal levels and impair the development of perseverative feedback cycles. Children who are unsuccessful in this endeavour may exhibit unremitting emotionality as a consequence of their inability to

adequately prevent the initiation of continuous emotion activating cues. Consistent with this reasoning, Menna and Landy (2001) characterize aggressive preschoolers as prone to rapidly becoming upset and resistant to caregiver attempts to settle down.

The second aspect of these control mechanisms needed to regulate emotions is the ability to regulate the output of emotions (Cicchetti et al., 1995). This aspect emphasizes the increasing interaction between the developing affective and cognitive systems as they serve to cause and control each other's expression. For instance, Crick and Dodge (1994) suggest that as one step in the child's processing of social information they engage in a practice of goal clarification, whereby goals are described as focused arousal states serving to orient a child to the attainment of a particular outcome. They assert that emotions play the integral role of enhancing or deterring a child's impetus to pursue particular goals. Thus, as Cicchetti and colleagues (1995) suggest, the initially independent emotion and cognitive systems become more integrated with the maturation of emotion-regulation. However, for aggressive children emotions such as anger may motivate them to pursue outcomes by way of aggression as goals are more directly and effectively achieved albeit at a cost to others.

Third, the vital aspect of synchronizing emotion and action is provided by these control mechanisms (Cicchetti et al., 1995). As mentioned above, emotions may provide the motivation to perform behaviours. For a child to effectively regulate their behaviour, it is imperative that this motivation be direct as opposed to random. For example, anger may motivate an individual to increase their sensitivity to barriers, initiate assertive thought, and intensify their actions towards the source of the obstacle (Cicchetti et al., 1995). On the other hand, anger has been hypothesized to lead to a complete loss of

behavioural control when experienced at high intensity (Eisenberg et al., 1993). In regards to anger, the inter-coordination of emotion and behaviour is an especially critical development for children with temperamental predispositions towards aggression.

Finally, with respect to weak emotion-regulation, Cicchetti and colleagues (1995) suggest that control structures are either absent or flooded by incoming sources of emotion activation. Consequently, emotions may have a disorganizing effect on the child resulting in extreme emotionality. These researchers suggest that the maturation of emotion-regulatory functions is evidenced by the decreased instances of relatively unpredictable emotional intensity, frequency, and duration that characterize early childhood. The presence of stronger control mechanisms is signaled by the more unified and predictable emotionality of middle childhood. Furthermore, despite the presence of adequate control mechanisms, emotional dysregulation is characterized by no less socially maladaptive behaviour. In regards to emotion dysregulation, control mechanisms are said to function in such a manner so as to direct emotion towards inappropriate goals. This becomes apparent as affective states are associated with socially inappropriate cognitions and behaviours. Thus, aggressive children may relate affective states such as anxiety or fear with aggression. When considering findings that suggest aggressive children access fewer responses to social situations as well as more aggressive and less prosocial responses in content (Slaby & Guerra, 1988), it may be that these children are prone to aggressive responses as a result of these maladaptive associations.

A number of studies by Eisenberg and colleagues (Eisenberg et al., 1993; Eisenberg, Fabes, Nyman, Bernzweig, & Pinuelas, 1994) have provided evidence for the emotion related pathways to aggression described above in preschool populations. Fabes

and Eisenberg (1992) argued that individuals who exhibit high emotionality and coexisting low regulatory capacities were more likely to display overt forms of aggressive expression as a result of anger and frustration. Thus, Fabes and Eisenberg suggest that these individuals are vulnerable to displays of aggressive behaviour and visible venting of emotion. The effect of these behaviours in relation to children's social skills and status are disastrous.

Eisenberg et al. (1993) examined the relationship between emotionality in the form of emotional intensity and negative emotion, and regulation as demonstrated by coping strategies and attention regulation, with respect to preschoolers' social skills and sociometric status. These researchers utilized adult (i.e., teacher, teacher aide, and maternal) ratings of emotional intensity, coping, attentional control and negative affect to predict social functioning as evaluated by adult reports of social skills and child determined sociometric status. The results of the study suggest that the combination of high emotional intensity and low levels of constructive coping and attentional regulation are associated with preschoolers' low social skills and sociometric status. While some researchers (e.g., Fox & Calkins, 1993) have argued that children who experience extreme arousal or emotional reactivity may struggle to regulate these states irrespective of specific regulatory strategies, the results of this study point to the importance of assisting these children to develop effective regulatory tactics. Specifically, Eisenberg et al. (1993, 1994) has posited that attentional control, avoidance and instrumental coping represent strategies that can serve to regulate such predispositions to emotionality. Supportive evidence is provided by Rubin, Coplan, Fox, and Calkins (1995) who found

that the ability to modulate affect and utilize appropriate self-regulatory skills augments the development of social skills.

In addition to evaluating preschoolers' social skills and sociometric status, Eisenberg and colleagues (Eisenberg et al., 1994) examined the relationship between emotionality and regulation in regards to preschoolers' anger reactions. Adopting the same sources of emotion and regulation rating as above, Eisenberg et al. found that preschoolers who dealt with their anger in a constructive fashion were more likely to exhibit high regulation and/or low emotional intensity. In contrast, preschoolers who demonstrated less constructive anger reactions were characterized by acting out or avoidant styles of coping and high emotional intensity. More specifically, preschoolers who adopted non-hostile reactions to anger such as verbal means were positively associated with higher levels of constructive coping and negatively correlated with non-constructive coping and overt expressions such as aggression or venting. Additionally, these researchers found that preschoolers' non-hostile, verbal means of dealing with anger were related to social competence and peer status. Conversely, retaliatory efforts in the form of physical aggression and emotional venting in response to anger were negatively associated with social competence, for boys and girls respectively. Cicchetti et al. (1995) suggest the aligning of emotions and behaviour represents a decisive accomplishment during childhood. Moreover, as Eisenberg et al.'s (1993, 1994) findings point out, emotions and cognitions are combined to help regulate behaviour.

Behavioural-regulation. In many ways, behavioural-regulation represents the culmination of the interactions among the complimentary dimensions of the self-regulatory system. Essentially, children who are identified as exhibiting self-regulatory

deficits are most often those who display behaviour problems in the form of noncompliance, impulsivity, and aggression. Consistent with Vygotsky's ideas, for researchers who focus on this dimension, the internalization of caregiver demands represents the critical feature of self-regulatory development. Thus, while early on in their development, children depend on caregiver instruction for regulation, it is expected that they will eventually internalize these dictates in order to perform more self-directed behaviour. Accordingly, researchers have examined the locus of regulation as it pertains to either internal (i.e., self-initiated) or external (i.e., caregiver-directed) directives.

Kochanska and colleagues (Kochanska & Aksan, 1995) developed a model of compliance that differentiates between internally and externally motivated forms. In their view, situational compliance refers to the child's lack of sincere commitment to the compliance behaviour despite demonstrating cooperation with caregiver demands. Situational compliance must be maintained by sustained parental control and consequently is considered a more immature form of compliance. In contrast, committed compliance refers to the child's wholehearted commitment to the maternal agenda. It is characterized by the child's willingness to embrace, endorse, and accept their mother's dictates as their own. Kochanska and Askan (1995) proposed that the understanding of this qualitative difference is essential for the notion of internalization. While they suggest committed compliance represents a precursor to self-regulation, situational compliance is inversely related to internalization.

Kochanska and colleagues (Kochanska & Aksan, 1995; Kochanska, Aksan, & Koenig, 1995; Kochanska, et al., 2001) have found supportive evidence for their model in a number of studies. First, Kochanska and Aksan (1995) discovered that committed

compliance increased with age. More specifically, 36-41-month-old children were more likely to display committed compliance than children 26-30 months of age. More recently, Kochanska et al. (2001) found that the most significant increases in committed compliance occurred between 14 and 22 months of age. These findings are consistent with the hypothesized development of compliance in relation to more authentic self-regulation posited by others (e.g., Vygotsky, 1978, Kopp, 1982). Furthermore, Kochanska et al. (1995) demonstrated that committed compliance in the toddler years was positively related to indications of self-regulation in the preschool years. Thus, children who exhibited committed compliance were more likely to comply with maternal demands in her absence and reject persuasions to cheat. In sum, these findings point to the emerging self-initiated behaviour characteristic of genuine self-regulation.

Similar to the findings detailed above, Mischel and associates (Mischel, Shoda, & Peake, 1988; Mischel, Shoda, & Rodriguez, 1989) have demonstrated the importance of delaying gratification with respect to subsequent socially adaptive behaviour. The ability to delay gratification in the service of anticipated goals is of paramount importance for preschoolers as they begin to engage in school-related activities that demand adequate patience and mental perseverance. Interestingly, Mischel et al. (1988) found positive relationships between the ability to delay gratification at the preschool age (i.e., 4 and 5) and parental ratings of a number of socially adaptive behaviours, namely the ability to use and respond to reason, plan and think ahead, concern for moral issues, and relative resilience under stress including abstaining from engaging in more immature behaviour during these periods. Conversely, aggressive children have a tendency to respond to social situations in a more impulsive fashion. Specifically, aggressive children are apt to

act upon the first alternative they generate in response to a particular circumstance without engaging in further evaluation (Coie & Dodge, 1998). As a result, aggressive children do not permit themselves to adequately assess potential outcomes, instead opting for more immediate fulfillment.

Research by Calkins and Dedmon (2000) provided evidence for the notion that failures in behavioural-regulation may result in externalizing behaviour problems. These researchers examined 2- to 3-year-old children with respect to the physiological and behavioural signs displayed during a variety of tasks designed to provoke self-regulatory acts. Calkins and Dedmon, divided their sample into those children considered "high risk" for externalizing behaviour (a CBCL score in the borderline clinical range) and those believed to be "low risk" for the development of such behaviour. The researchers employed resting and response measures of heart rate (HR) and respiratory sinus arrhythmia (RSA) in order to assess children's physiological regulation. It was determined that those children thought to be "high risk" for the development of aggression exhibited less RSA suppression in response to the challenges of the various tasks than their "low risk" counterparts. Moreover, in response to these challenges, aggressive children demonstrated more temper tantrums and less acknowledged regulatory behaviours than did the control children. In addition, these children were assessed at a second time in order to assess their socially appropriate versus socially inappropriate behaviour during a situation in which they play with a peer (Calkins, Gill, & Williford, 1999). It was no surprise, when researchers found that aggressive children were more aggressive with unfamiliar peers than non-aggressive children. However, the aggressive children continued to display more aggressive behaviour even when the

mothers of the unfamiliar peers were present. Furthermore, the aggressive play increased in frequency as the play period continued. In sum, these studies point to the inability of aggressive children to regulate their behaviour during novel and monitored situations.

Scaffolding

Definition. Perhaps the most enduring concept presented by Vygotsky (1978) was the zone of proximal development. Traditionally, Vygotsky's conceptualization of the zone of proximal development has been restricted to the domain of education. However, based on the instructional process inherent in cognitive-behavioural skills training programs, it's applicability to the arena of problem-solving skills development seems evident. Vygotsky (1978, p.86) defined the child's zone of proximal development as "the distance between the child's actual developmental level, as determined by independent problem-solving, and the level of potential development as determined through problem-solving under adult guidance or in collaboration with more capable peers." Optimal teaching occurs when adults recognize the child's zone of proximal development and cater their instruction accordingly. Children internalize the control of a task in a steady, stepwise process, characterized by the caregiver's initial control and guidance of the child's activity. With successive internalization, this interaction becomes more balanced, albeit the caregiver continues to provide guidance when the child's efforts are met with failure. Finally, the caregiver relinquishes control of the task whence the child has demonstrated adequate mastery.

Based on this conceptualization, Wood, et al. (1976) established a more operational definition for the zone of proximal development. They suggested that the process of assisting novices with skill acquisition involved a kind of scaffolding process,

in which a child is enabled to solve a problem, which is beyond his or her original capabilities. Further, these authors asserted that the adult controls those elements of the task that are initially beyond the novices abilities, thereby allowing them to focus on those elements which are within their current means. This process continues until a successful completion. In addition to interpolating Vygotsky's zone of proximal development, Wood et al. suggested that the assisted completion of a task does more than merely instill a learner with a skill; rather, it provides them with a sense of task competence not possible to achieve through unassisted efforts.

Maternal scaffolding as the natural interaction for the development of preschoolers' self-regulation. As stated above, Vygotsky (1978) viewed the development of personality as a social process. For him, the development of higher psychological functions was predicated on the internalization of a social relationship. Vygotsky emphasized the critical point at which the child internalized the directives of the adult, suggesting that it represented the change from inter-psychical functioning to intra-psychical functioning. In his formulation, rather than turning to the adult in order to elicit strategies for problem-solving completion, the child begins to look to themselves in order to find the solutions to their problems (Vygotsky & Luria, 1994). When this is achieved, the child can be said to effectively self-regulate.

While not explicitly stated, the most available and applicable relationship for the child's internalization of higher psychological functions is that with their caregiver, especially their mother. It is within this relationship that children are most naturally provided the supportive context with which to practice early self-regulatory attempts. In line with Vygotsky's ideas, early maternal-child problem-solving endeavours are the

most likely to be internalized by the child thus setting the stage for their self-regulatory future. Moreover, as discussed above, it is during the preschool years that children have been shown to progress beyond mere compliance towards greater autonomous regulation.

Since, very few studies have examined the importance of maternal scaffolding with respect to preschooler's problem-solving and behavioural adjustment and social competence. One such study conducted by Winsler, Diaz, McCarthy, Atencio and Chabay (1999) compared mothers of preschoolers who were identified by their teachers as exhibiting a behaviour problem with mothers of control children. These researchers focused on the differences between the groups with respect to maternal speech, child speech (during the interaction and in isolation), and child/mother physical contact during a problem-solving task. Results of the study suggested that mothers of children with behaviour problems exhibited increased other-regulation (distinguished from the child's self-regulation) and negative control, as well as decreased use of praise and less withdrawal of control over time. These findings provide support for the notion that poor scaffolding of problem-solving tasks may have an impact on children's effective self-regulation. Interestingly, these researchers found little disparity in regards to the differences between children identified as having a behaviour problems and control children with respect to task performance. Winsler et al. postulated that this may be the result of the novelty of the situation. However, they also posit that simultaneous negative child behaviour is not necessarily required for the increased other-regulation to be elicited, assuming the effects that the dyad's shared social history has on the child's internalization of regulatory strategies. The inherent difference in children's behaviour makes the difference in maternal behaviours salient.

One limitation to the aforementioned study by Winsler et al. (1999) is their focus on maternal speech. More often than not, studies incorporating the role of scaffolding have limited their focus to primarily verbal interactions between parent and child (Conner & Cross, 2003; Conner et al., 1997; Pratt et al., 1988; Winsler et al., 1999; Wood et al., 1976). The limitation is obvious if one considers the eclectic dimensions that interact to produce self-regulation. As such, scaffolding may more appropriately be conceptualized as involving concomitant cognitive, emotional, and autonomy supportive components. Such a conceptualization bears the spirit of Vygotsky's ideas more comprehensively. Nonetheless, until recently no study had simultaneously examined the role of each of these dimensions in terms of children's self-regulation.

Cognitive support. Vygotsky (1978) suggested that parents serve to act as metacognitive mentors for their child. In this capacity, parents provide their children with information about the structure of the task, the nature of the overall task goal, and provide an index of the task's difficulty while proposing potential pitfalls the child may face (Stright et al., 2001). Furthermore, parents can delineate information as to what strategies can be adopted for particular problems, potential ways they could be used, and reasons why they are effective (Stright et al., 2001). Essentially, the internalization of such metacognitive information enables the child to think critically about problems in order to respond in a more sophisticated and effective fashion. As such, it permits the child to engage in a number of cognitive self-regulating behaviours such as monitoring their progress toward a goal and seeking assistance when stuck (Neitzel & Stright, 2003). If omitted during these problem-solving interactions, it's likely that children will develop a

more superficial understanding of the task and be vulnerable to frustration and anger as a result of their ill-conceived plans for task completion.

The process of effective problem-solving skill acquisition is contingent upon the parent's manner of instruction (Neitzel & Stright, 2003). Thus, parents must regulate task difficulty by providing instruction in small, manageable steps in order for the child to grasp the skill (Stright et al., 2001). As Wood and Middleton (1975) assert, the most effective instructors will focus their efforts on the level of intervention they termed, "the region of sensitivity". The region of sensitivity corresponds to the difference between the level of skill acquisition in which the child is experiencing the most difficulty and their current level at which he or she is performing (Wood & Middleton, 1975). Research has demonstrated that parents typified as authoritative are more likely than non-authoritative parents to concentrate support for their child's problem-solving endeavours in the region of sensitivity (Pratt et al., 1988).

The instructor's regulation of task difficulty is facilitated by the extent to which they review progress in relation to the overall goal (Neitzel & Stright, 2003). Regulation of task difficulty serves to provide the child a deeper perspective of the task requirements while providing direction for the child's forthcoming efforts. Wood & Middleton (1975) proposed that parents must be sensitive to their child's successes and failures in order to adequately support their problem-solving attempts. Research has shown that children of parents who are successful in enacting these contingency rules perform better on subsequent measures of the task. Furthermore, Pratt et al. (1988) demonstrated that authoritative parents were more likely than non-authoritative parents to perform these shifts in response to their child's performance. In sum, the instructor's regulation of task

difficulty and review with respect to progression to overall goal allows the child to begin to regulate their own thinking, which symbolizes a core component of the overall self-regulatory system.

Emotional support. Within the scaffolding paradigm, emotional support is an active component. Parental emotional support may promote the development of a child's sense of personal agency, which can serve to protect them from the inevitable setbacks inherent in skill acquisition. The child's fragile problem-solving skills are likely prone to the intrusion of negative emotion that can tax the child's self-regulatory capabilities. Research has demonstrated that children of parents who provide an emotionally supportive environment are more likely to internalize their parents' dictates and model their behaviour (Grusec & Goodnow, 1994). Thus, parental encouragement and optimism may support their child's burgeoning self-regulatory abilities.

In contrast, children's skill acquisition can be adversely effected by parental criticism or signs of disapproval. As such, the parent could produce the opposite effect and thereby hamper their child's self-regulatory development. The aforementioned studies that suggest parental warmth, hostility and rejection are positively related with children's aggressive behaviour point to the negative effect of these practices on children's self-regulation. It has been suggested that the provision of rich metacognitive information presented in a manageable fashion will be unsuccessful in aiding children's self-regulatory behaviour if the parent fails to present these elements in a manner that engages the child's interest in the problem-solving task (Stright et al., 2001). In this way, harsh parental criticism or disapproval limits the child's motivation and internalization of

principles resulting in a failure to develop a sense of competence and consequently, skill acquisition.

Autonomy support. Finally, parental support of the child's autonomous efforts represents the culmination of the scaffolding process (Neitzel & Stright, 2003). Parents are required to negotiate the transfer of responsibility for the skill upon the child's satisfactory demonstration of the capacity for independent performance. As such, the parent must be sensitive to their child's level of mastery by providing appropriate intervention when their child is unsuccessful, while adequately withdrawing intervention when successful (Wood & Middleton, 1975). Parents can provide hints, questions, or cues that encourage the child's active involvement. In this manner, the child regards himself as an active participant in the development of a skill. Accordingly, research has demonstrated that autonomy-supportive parenting is associated with less acting out and more classroom competence in a study of children in grades 3 to 6 (Grolnick & Ryan, 1989).

On the contrary, parental over-control of their child's problem-solving efforts can serve to make the child feel as if he or she is a passive recipient in the skill acquisition process. This is tantamount to suggesting that the child cannot manage their own problem-solving and may foster dependent behaviour. Furthermore, children whose parents control their problem-solving efforts beyond what appears necessary may be capable of self-regulatory behaviours but fail to enact them because they are not aware that it is their responsibility (Neitzel & Stright, 2003).

Research by Calkins and Johnson (1998) provides support for the role of these three dimensions of scaffolding to children's self-regulatory development. In this study,

Calkins and Johnson examined the extent to which parents displayed behaviours such as, positive guidance (including praise, affection, and encouragement), and negative control (including scolding, restricting, and directing the child) during interactions with their child in a play situation. Mothers of two-year-old children who adopted more negative control strategies had children who demonstrated a greater amount of time acclimating themselves to the play object, used less distraction and exhibited lower levels of vagal suppression, considered by the researchers to be a physiological measure of emotion regulation. Moreover, the maternal styles of interaction were not related to their children's distress during the situation but were related to the strategies these children used to regulate their emotion. These authors suggest that as a result of the predominantly temperamental predisposition towards reactivity, it is less likely to be modulated by maternal socialization strategies. However, Calkins and Johnson point to the regulation strategies adopted by children to regulate their emotion as the component influenced by maternal styles of interaction. Consequently, while children may be innately more reactive, maternal scaffolding is critical for the child's development of effective strategies to regulate such reactivity.

Parent-Child Interactions

The foundation for self-regulatory development. While the studies reported above describe the necessity for children to develop self-regulation skills within the domains of cognition, emotion, and behaviour, they do not indicate how these skills are developed. A number of researchers implicate the parent-child relationship as the vital arena for such development (e.g., Gianino & Tronick 1988; Kopp, 1982; Neitzel & Stright, 2003). Caregivers, particularly maternal caregivers, have the unique opportunity to provide not

only practical information about self-regulatory strategies that can be utilized and/or the reasons that underlie those strategies, but they also have the potential to grant the empathic support and encouragement essential for their child's successful transition into an increasingly independent reality. From the research available, it is noted that caregivers enable their child's self-regulation through the provision of cognitive strategies for task completion, unconditional warmth and positive affect, as well as a keen sensitivity to their child's development.

In order for the child to successfully begin to initiate self-directed, purposeful behaviour children must possess an understanding of their environment as safe and predictable. According to attachment theorists, caregivers promote this understanding as a result of their keen sensitivity to their child's needs (Bowlby, 1969; Ainsworth, 1979). When caregivers are sufficiently responsive, their children begin to develop expectations about their caregiver's ability to meet their necessities. As such, they begin to appreciate that states of discomfort can be managed effectively, leading to the return of more stable conditions. In this way, the caregiver's ability to soothe and comfort their child lays the foundation for the their ability to self-regulate as the child develops an understanding that anxious states are transient and can be regulated initially by another's efforts, and with maturity, their own. Bowlby (1969) suggested the child's expectations of their caregiver are internalized as "working models" that consist of inner representations of their caregiver as accessible and responsive. As a result, these inner representations govern the child's future responses to events both internally and in their environment (Ainsworth, 1979).

Much attention has been centered on Ainsworth's conceptualization of attachment patterns (Ainsworth, Blehar, Waters, & Wall, 1978). These researchers originally identified three main patterns that served to characterize children as a result of interactions with caregivers during the Strange Situations Test. This test has been suggested to be a means to assess the quality of the infant-caregiver relationship, notwithstanding its focus on infant attachment behaviours (Sroufe & Fleeson, 1986). Primarily, it is found that children utilize their mother as a base from which to explore their environment and approach novel stimuli and are distressed by maternal absence, seeking direct contact or interaction with them upon their return. Children exhibiting this pattern are identified as securely attached. Less often, children are witnessed to exhibit difficulty separating from their caregiver in order to explore and are not easily comforted as a result of contact, often demonstrating anger in addition to contact seeking. These children are said to display an anxious/resistant pattern of attachment. Finally, those children who readily separate from their caregiver to explore their environment before separation and engage in active avoidance upon reunion are identified as anxious/avoidant.

Sroufe and Fleeson (1986) suggest that these interactions are indicative of the parent-child relationship history. Consequently, in opposition to their more anxiously attached peers, securely attached children and their caregivers have developed effective methods for terminating distress. Thus early in their development, securely attached children are being exposed to regulation techniques, which researchers have suggested become internalized over the course of their early years (Sroufe & Fleeson, 1986). Consistent with this assertion, research has shown that securely attached children are

cooperative and attentive with maternal instructions during problem-solving tasks, resulting in effective problem-solving (Matas, Arend, & Sroufe, 1978). In contrast, anxiously attached children are exposed to weaker regulation strategies if one considers their behaviour in the Strange Situation Test as a representation of their typical interaction with their caregiver. Thus, research has shown that anxiously attached children become easily frustrated and negative during joint problem-solving tasks (Matas et al., 1978). Interestingly, during these problem-solving interactions, mothers of anxiously attached children were inconsistent with support and relied upon a variety of devices including threats, bribes, anger, and commands to facilitate task completion. Furthermore, research suggests that anxiously attached children are more likely to exhibit aggression during their preschool years (Burgess, Marshall, Rubin, & Fox, 2003; Egeland, Pianta, & O'Brien, 1993). Therefore, it appears that the nature of the early attachment relationship sets the stage for either effective or poor self-regulation as the child matures.

In addition to the abundance of work garnered to the attachment relationship, research has demonstrated that the adopted style of parenting can have considerable effects on the child's internalization of self-regulatory techniques. Baumrind (1967) has proposed three types of parenting that could be considered to moderate a child's development of self-regulation. Authoritative parents demand and reinforce socially mature behaviour on the part of their children but encourage their child's input into decision-making and provide clear rationales as to why measures were taken. In addition, these parents establish clear limits while displaying warmth and a high level of responsiveness to their child's needs. On the contrary, while authoritarian parents

demand socially mature behaviour they are not likely to enlist their child's input in decision making, opting instead for a more controlling style of instruction. Authoritarian parents are less responsive to their child's needs and discourage their child's independence. Finally, permissive parents are characterized by their lack of emphasis concerning the imposition of demands on their child and little discouragement of their child's impulses. They are considered to be warm parents that encourage their child's independence but are too lax in regards to their authority over their child's behaviour.

On the basis of these typologies, it is clear that different parenting styles correspond to varying degrees of children's self-regulation as they mature. Research has demonstrated that children of authoritative parents display higher social competence and self-reliance, as well as fewer indications of school misconduct and delinquency (Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). On the contrary, children of authoritarian parents exhibited poor social competence and self-reliance, while children of permissive parents showed more instances of delinquent behaviour (Steinberg et al., 1994). It could be theorized that children of authoritative parents have been encouraged to engage in the cognitive strategizing and autonomous practice of self-regulatory tactics, while receiving adequate responsiveness that is optimal for the development of self-regulation during times of distress. Quite the reverse, for children of authoritarian parents who may be limited in their ability to initiate self-regulatory behaviour, while children of permissive parents may be hampered by the fact that they rarely face the consequences of their actions. In both cases, these children fail to develop the sense of personal agency that is essential for successful self-regulatory development.

Accordingly, research has demonstrated that authoritarian styles of parenting are associated with various children's externalizing behaviour, including aggression (Campbell, Breaux, Ewing, Szumowski, & Pierce, 1986; Dishion, 1990). Campbell and associates (1986) observed teacher-identified, hard-to-manage, 3-year-olds during structured play interactions with their mothers. In spite of the fact that the children labeled as having a behaviour problem did not exhibit more aggression or noncompliance during the observed interactions, mothers of these children were found to be more directive, and more negative than mothers of the comparison group. Furthermore, ratings of the quality of the interaction showed that the mothers of problem children were more intrusive and inappropriately over-directing of their child's play. This style of low maternal warmth and high control epitomizes the authoritarian parent.

Clearly, a child's development of self-regulation is influenced by their caregiver's effectiveness with respect to instilling such capacities within their child (Calkins et al., 1998). While it is certainly the case that children contribute unique dispositions to their self-regulatory development, it is the responsibility of the caregiver to provide the requisite support for the realization of these qualities. Presumably, caregivers of children with deficits in self-regulation would exhibit deficient skills, which negatively impact on their child's development of such skills. Correspondingly, research has demonstrated that mothers of aggressive children exhibit a range of qualities that could be suggested to limit their effectiveness in this regard (e.g., Bates & Bayles, 1988; Campbell et al., 1996; Nix et al., 1999).

Characteristics of mothers of aggressive preschoolers. In their role as the most prevalent primary caregiver, mothers of aggressive children have received a lot of

attention in regards to research examining the development of childhood aggression. With respect to aggressive children, the mother-child relationship is frequently one of high conflict. It is likely that the conflictual nature of this relationship is due, in part to both the antisocial qualities exhibited by aggressive children and the characteristics research has shown to be indicative of mothers of aggressive children. While the majority of treatment approaches for aggressive children concentrate on the child's deficiencies, mothers of aggressive children exhibit a number of qualities that may contribute to their child's manifestations of aggression including in the domains of cognitive and emotional support, as well as their advocacy of their child's independence.

In his formulation of discipline styles, Hoffman (1970) suggested that excessive use of power assertive techniques by parents was detrimental to their child's development. He proposed that such techniques were characterized by the parent's attempt to gain control over the child or their resources. For example, parents who endorse this method of discipline are likely to adopt spanking, threatening, or the removal of privileges as discipline strategies. The use of power assertive discipline serves to evoke a high level of arousal within the child that limits their ability to attend to their caregiver's explanations as to why their behaviour was inappropriate. As a result, children of parents who adopt power assertive discipline experience difficulty internalizing their caregiver's principles. Lacking the rationale for socially adaptive behaviour, Hoffman suggests these children mimic their caregiver's characteristic style of discipline with others. In line with Hoffman's theory, such harsh disciplinary practices have been shown to predict children's aggressiveness (Campbell et al., 1996; Dishion, 1990; Dodge, Pettit, & Bates, 1994). Additionally, mothers who adopt such control

oriented and totalitarian styles of parenting are more likely to deal with their child's aggression through the use of control and anger, while focusing on the child's compliance rather than promoting skill development (Hastings & Rubin, 1999). Therefore, these mothers may actually be contributing to their child's aggression by not endowing them with appropriate social skills and limiting their opportunities to practice self-directed, socially acceptable behaviour as a result of their emphasis on control.

Similarly, mothers who adopt harsh parenting practices have been found to be associated with children's difficulty in regulating emotions and consequently, aggression (Deater-Deckard & Dodge, 1997; Eisenberg et al., 1999; Chang, Schwartz, Dodge, & McBride-Chang, 2003). Recently, Chang et al. (2003) sought to discover the role of both maternal and paternal use of harsh parenting on children's emotion-regulation and aggression. Utilizing a Chinese sample of 3- to 6-year-old children, these authors found a number of telling relationships. First, harsh parenting was significantly related to children's aggression. However, using structural equation modeling techniques Chang et al. demonstrated that emotion regulation served to mediate this relationship. Interestingly, while the direct effect of mothers' harsh parenting on children's aggression was negligent, the mediated effect, contributed by the child's emotion regulation, was significant thus implicating the strong effect such maternal parenting practices have on children's emotion-regulation difficulties and as a result, aggression. These authors argue that harsh parenting can be viewed as a form of affect communication in which children are affected via both the modeling of aggressive behaviour and indirectly through emotion dysregulation.

In addition to mothers' power-assertive and harsh discipline tactics, maternal warmth plays a critical role in children's development of emotion-regulation and aggression. Consistently, research has shown that parental warmth is negatively correlated with externalizing behaviour. For instance, Bates and Bayles (1988) demonstrated that maternal affection was inversely related to 5- and 6-year-old boys and girls externalizing problems. Similarly, Booth, Rose-Krasnor, McKinnon, and Rubin (1994) found maternal warmth at age 4 was negatively related to externalizing problems at age 8 and maternal negativity was positively related to behaviour problems. Moreover, it has been shown that a lack of parental affection, rejection, low nurturance, and caregiver negativism toward the child result in hostile behaviour patterns in the child (Patterson, Reid, & Dishion, 1992). In contrast, maternal warmth has been associated with greater cooperation and less frustration during problem-solving tasks in toddlerhood (Matas et al., 1978). On the basis of these findings, it could be ascertained that mothers of aggressive children fail to provide the unconditional emotional support required by their children for the development of self-initiated behaviour.

Critical for the provision of an appropriately warm and supportive environment are the perceptions mothers have of their child's behaviour. As such, much attention has been directed towards the attributions of parents of aggressive children. It is apparent from research on maternal attributions of their aggressive children's behaviour that they possess characteristic negative and hostile attribution biases (Dix & Lochman, 1990; Nix et al., 1999). While it could be said that this tendency to perceive their child's behaviour as hostile is the result of repeated exposure to these deviant acts, it appears that such biases actually combine with harsh discipline to contribute to their aggression.

Specifically, the beliefs parents maintain in regards to the origins and development of their child's aggression will likely influence their adoption of specific parenting strategies. For instance, Nix et al., (1999) found that maternal hostile attribution biases predicted children's externalizing behaviour in their early school years. This relationship was mediated to a large extent by maternal harsh discipline strategies. The associations between these factors may be explained by findings that suggest abusive mothers, who are by definition harsh, are more likely to interpret the impetus of their child's behaviour as originating from spite, the intent of which is to purposely irritate the parent (Bauer & Twentyman, 1985). Furthermore, abusive mothers possess unrealistic expectations as to their child's abilities (Azar, Barnes, & Twentyman, 1988). While no causal connections can be established on the basis of such correlational findings, it is possible that parents of aggressive children maintain inordinate expectations of their child, which indicates they are insensitive to their developmental level. Inevitably, expectations cannot be met, leading to the maternal perception that the child is purposely behaving in such a manner so as to intentionally irritate them. These perceptions may result in maternal anger and the harsh, punitive discipline techniques employed by these parents. The use of such techniques reinforces aggression as a means to solve problems while failing to provide examples of alternative, more appropriate methods. Taken together, this process does not provide the aggressive child with a rationale for behaving in socially competent ways, the unconditional emotional support to feel comfortable enough to enact various alternative solutions, or the room to attempt such alternatives independently. In essence, it lays the foundation for poor self-regulatory functioning.

An alternative pathway explaining the role of parental attributions and subsequent parenting strategies in the expression of children's aggressive behaviour can be offered on the basis of research by Rubin and Mills (1990). Investigating such a link with mothers of aggressive 4-year-olds, these researchers found that mothers of aggressive children, despite showing anger in response to their children's aggression, were more likely to report the use of indirect- or no-response strategies to manage such acts. Additional findings demonstrated that mothers of aggressive children were more likely to attribute the aggression to age-related factors. Rubin and Mills offer an explanation of their findings that suggests these mothers may have utilized more direct approaches in the past, which serves to explain their belief in utilizing direct strategies to deal with aggression. Nevertheless, Rubin and Mills posit that these attempts may have been unsuccessful in limiting their child's aggression. As a result, these parents assume a defensive attributional position whereby they believe their child's aggression and resistance to direct strategies of redirection are based on transient, age-related factors that will pass with time and are impervious to their influence. Moreover, these researchers assert that such an attributional stance may be due to the fact that these mothers are intimidated by their child's behaviour. Thus, these mothers may be fostering their child's aggressive behaviour through a lack of consistency between their feelings in response to their child's behaviour and the measures they take to reduce it. In effect, mothers who adopt more indirect strategies to deter their child's aggression, or no strategies whatsoever, are negatively reinforcing their child's maladaptive behaviour (Patterson, 1982). Moreover, these strategies prove to be no more effective in promoting children's self-regulation as they do not provide useful instruction for the development of

alternative methods of dealing with problems and are limited in the amount of emotional support they provide for the child to the extent that the child is given feedback for problem-solving attempts.

Summary of the Problem and Objectives of the Present Study

The preceding review of the literature has demonstrated that aggressive children exhibit a range of cognitive, emotional, and behavioural difficulties that point to a likely deficit in self-regulation. In addition, the literature suggests that mothers of aggressive children display a number of cognitive, emotional, and behavioural difficulties that may contribute to their child's self-regulatory limitations. While many treatment approaches for aggression exist, only a few concentrate on the parent-child interaction (e.g., PCIT, Eyberg, Boggs, & Algina, 1995). The most popular of these interventions, parent management training (PMT) attempts to intervene at the parental level. Thus, it seems appropriate to examine the salient differences with respect to the ways in which mothers of aggressive children scaffold problem-solving skills to their children in comparison to mothers of non-aggressive children. As no study found to date has examined the construct of scaffolding in relation to the delineation of problem-solving skills to aggressive children, the present study represents a novel examination of aggressive parent-child dyads.

Study Hypotheses

In accordance with Neitzel and Stright's (2003) operationalization of the construct of scaffolding, the present study is designed to assess and compare the cognitive, emotional and transfer of responsibility scaffolding behaviours of mothers of aggressive preschoolers to matched mothers of non-aggressive preschoolers. To accomplish such

aims, archival, videotaped mother-child interactions during a structured task will be coded for scaffolding behaviours. The videotaped interactions have been utilized in previous research concerning play and limit-setting interactions (Landy & Menna, 2001; Landy & Menna, 1997; Menna & Landy, 2001). The current examination of the structured task mother-child interactions represents the first use of this data.

This study will attempt to identify differences with respect to the provision of cognitive support between mothers of aggressive and non-aggressive children on the basis of their ability to provide metacognitive information in the form of any information that makes salient the thinking behind the problem-solving process. Additionally, mothers will be assessed as to their facility to regulate task difficulty by providing instructions in small, manageable steps, and their capacity to review the steps of the task in relation to the overall goal of the task. With relation to the provision of emotional support, mothers will be assessed with respect to how they provide emotional support in the form of encouragement, positive comments about the child's ability to do the task, and/or nonverbal gestures such as smiles or tone of voice. Furthermore, mothers will be assessed on the basis of their rejection of the child. Rejection will be evaluated on the basis of instances of criticism, disapproval, dismissal of the child's efforts, and/or nonverbal gestures like frowns or grimaces. Third, mothers of aggressive and non-aggressive preschoolers will be assessed on the extent to which they encourage their child's active involvement in the task and autonomous behaviour. Therefore, mothers of aggressive and non-aggressive children will be assessed with respect to the degree to which the mother exercises control over the child's problem-solving attempts beyond what appears necessary for the child to do the task. In addition, mothers will be assessed

on the extent to which they use prompts, questions, and hints while providing assistance to the child as opposed to simply completing the task for the child. Therefore on the basis of the aforementioned literature review, it is predicted that:

1. Mothers of non-aggressive preschoolers will provide more metacognitive information to their children than mothers of aggressive preschoolers.

2. Mothers of non-aggressive preschoolers will exhibit better regulation of task difficulty than mothers of aggressive preschoolers.

3. Mothers of non-aggressive preschoolers will review the steps of the task and discuss progress in relation to the overall goal more often than mothers of aggressive preschoolers.

4. Mothers of non-aggressive preschoolers will provide more emotional support than mothers of aggressive preschoolers.

5. Mothers of aggressive preschoolers will exhibit more rejection of their child's problem-solving efforts than mothers of non-aggressive preschoolers.

6. Mothers of aggressive preschoolers will demonstrate a greater amount of control over their child's problem-solving attempts beyond what appears to be necessary than mothers of non-aggressive preschoolers.

7. Mothers of non-aggressive preschoolers will provide more encouragement of their child's active involvement in the problem-solving task than mothers of aggressive preschoolers.

In addition to the assessment of maternal scaffolding behaviours, preschool children will also be assessed in regards to their social competence. Specifically, the present study will evaluate both aggressive and non-aggressive preschoolers with respect to their

cooperation, assertion, responsibility, and self-control. On the basis of these assessments it is predicted that:

8. A positive relationship will exist between each of the seven maternal scaffolding variables and the four measures of children's social competence (i.e., cooperation, assertion, responsibility, and self-control).

CHAPTER III

Method

The present study utilized archival data collected between 1996 and 1999 in

Toronto, Ontario, Canada for the purpose of a larger study examining parental

characteristics and preschool aggression conducted by Rosanne Menna and Sarah Landy.

The research was approved by the ethics boards of the University of Toronto as well as

the University of Windsor. The present study uses archival data consisting of parental

responses to self-report questionnaires and videotapes of mother-child interactions.

Research approval for the present study was obtained from the ethics committee of the

University of Windsor.

Participants

Participants in the study are 60 child (30 aggressive and 30 non-aggressive) and

mother pairs. Children's ages ranged from 3 to 6 years, with a mean age of 4.52 years.

Participants were originally recruited through advertisements and articles in the local

newspapers, parenting magazines, and from parent resource centres and daycares.

Children were classified as aggressive if they met the criteria of having a parent-reported

Child Behavior Checklist (CBCL, Achenbach, 1991) score above the 95th percentile for

the Aggressive Behaviour Syndrome. Assignment to the comparison group was based on

a score within the normal range (below the 70th percentile) on all syndromes measured by

the CBCL. The comparison group children were matched with the aggressive sample for

gender and age. Children with serious developmental delays and mothers and children

with any medical condition or physical disability were excluded from the study.

Procedure

After informed written consent was obtained, assessments were scheduled at a children's mental health centre at which the study was taking place. Participation in the study involved two assessment sessions. The first required the pair to come to the centre to complete questionnaires. Mothers completed the CBCL with the help of a research assistant if required. The second visit entailed the videotaped interaction. For the aggressive children and their mothers, a third session took place when the pair completed several measures for the larger project.

Mother and child were asked to engage in the four components of the Parent Child Early Relational Assessment (ERA; Clarke, Musick, Stott, Klehr, & Cohler, 1984): a 10 minute structured teaching task; a 10 minute snack period; a 10 minute free play and a 10 minute separation and reunion. In this study, the structured teaching task is reported on only. For the structured teaching task segment, the mother and child were provided with 12 coloured one-inch blocks and the most difficult DLM matching cards (similar to WISC block design cards). The mother was provided with three instructions. First, the mother was instructed to build a tower with 9 of the coloured blocks and a bridge with the remaining 3. Then, the mother was to instruct her child to do the same. Second, the mother was instructed to have her child make a design with the coloured blocks that matched designs presented on cards. Finally, if time permitted, the dyad was instructed to read a book together. The interaction was videotaped in a room with a one-way observation mirror and lasted one hour. It was administered by two research assistants, one who ran the camera and gave instructions to the dyad, and another who watched from the observation room and brought the materials as needed.

Measures

Background Information. Mothers completed a background information questionnaire regarding mother's age, occupation, education level, ethnicity, marital status, child's age, child's gender, and child's health history.

Battelle Developmental Inventory (BDI; Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1984). The Battelle Developmental Inventory (BDI) was used to derive a Developmental Quotient (DQ) of the children. The BDI is a standardized individually administered assessment battery of key developmental skills in children from birth to 8 years. Items are grouped around 5 domains: personal-social, adaptive, motor, communication, and cognitive. BDI test-retest reliability is very high for each domain varying from .68 to .98. The BDI has very high correlations with the WISC-R (Wechsler, 1974), Stanford-Binet (SB:IV; Thorndike, Hagen, & Sattler, 1986), and the Peabody Picture Vocabulary Test (PPVT-III, Dunn & Dunn, 1997). Two subscales, communication and cognitive were used to assess the sample.

Child Behavior Checklist (CBCL; Achenbach, 1991). Mothers were asked to complete the Child Behavior Checklist. This widely used standardized behavioural checklist consists of 118 items reflecting behavioural symptoms based on the DSM-IV diagnoses as reported by parents and/or teachers. The scale has high construct validity and high correlations with other parent checklists. Test-retest reliabilities are .89 and inter-rater reliability varies from .67-.74.

Parental Scaffolding Coding Manual (Neitzel & Stright, 2003). To code the structured teaching task sessions for scaffolding behaviours used by the mothers to instruct their child's block building efforts, an observational scale developed by Neitzel

& Stright (2003) was utilized. Using the Parental Scaffolding Coding Manual, raters

scored the mothers' scaffolding behaviours and recorded the mother-child narrative from

the videotapes. Raters were the present researcher and a fellow graduate student. The

graduate student was trained by the current researcher to appropriately apply the

scaffolding scale. Raters were blind to which children were aggressive and non-

aggressive. Mothers' scaffolding behaviours were assessed in regards to their cognitive,

emotional and autonomy support. Seven behaviours were scored on a 5-point Likert-type

scale with 1 representing little or no indication of the scaffolding behaviour and 5

indicating substantial or high quality scaffolding behaviour. Definitions and examples for

the seven scaffolding behaviours are provided in Appendix A. Two of the seven

behaviours, rejection and controlling, were reversed scored. Mothers who exhibited a

high level of rejection were given a 1, and those who demonstrate little or no indication

of such behaviours were assessed a 5.

The training of the graduate student utilized for inter-rater agreement involved

three steps. First, the rater was instructed on the definition of the 7 scaffolding

behaviours. Coding forms were developed and provided to the rater in order to aid in this

process. These forms featured definitions for each of the five levels of coding per

variable. In addition, the forms contained room for the rater to note particular aspects of

the interaction that contributed to the scored. Hypothetical examples were reviewed prior

to viewing the tape. Second, the rater was instructed to view the tape in both a micro and

macro fashion before coding. It was believed the former allowed the rater to recognize

the more subtle aspects of the interaction, while the latter enabled the rater to place these

exchanges within the context of the interaction. Third, 3 videotapes of mother-child

dyads were randomly selected for the rater in order to orient her to the nature of the interaction and allow her practice with the application of the scaffolding scale. These dyads were not selected for calculation of inter-rater agreement. The primary researcher and inter-rater cleared up inconsistencies with respect to the application of the coding criteria prior to the calculation of inter-rater agreement.

Social Skills Rating System (SSRS; Gresham & Elliott, 1990). To assess children's social competence, mothers were required to complete the Social Skills Rating System (SSRS). In addition to subscales measuring problem behaviours and academic competence, this measure of children's social behaviours provides ratings on the basis of the perceived frequency and importance of the following positive social skills: cooperation, assertion, responsibility, and self-control. Children's cooperation was assessed on the basis of maternal responses to items such as "Puts away toys or other household property" and "Attempts household tasks before asking for your help". Items used to rate children's assertion included, "Joins group activities without being told to" and "Makes friends easily". Children's responsibility was examined on the basis of maternal responses to items such as, "Asks permission before using another family member's property". Children's self-control items included, "Controls temper when arguing with other children" and "speaks in an appropriate tone of voice at home". The ratings of these four social skills were used as a measure of the child's social competence. The SSRS has moderately high parent test-retest reliability, with correlations ranging from .77 to .87 for the social skills subscale. Internal consistency, derived on the basis of the parent form for social skill assessment, ranges from .74 to .90 indicating a relatively high degree of scale homogeneity (Gresham & Elliot, 1990).

CHAPTER IV

Results

Preliminary Analyses

Inter-rater reliability. Inter-rater reliability for the *Parental Scaffolding Coding Manual* was determined on the basis of ten (17%) mother-child problem-solving interactions. Inter-rater agreement was required to meet 80% in order for the coding system to be deemed reliable. Of the seven variables assessed using the coding system only one, controlling, failed to meet the 80% criterion. Consequently, the criteria for the levels of the controlling variable were adjusted so as to make the scoring of it less ambiguous. Subsequent inter-rater evaluation provided 90% agreement thus satisfying the inter-rater criterion. The adjustments made to the controlling variable were maintained for the ensuing scoring of mother-child problem-solving interactions. Cohen's Kappa reliability ranged from .67 to .85.

Accuracy of data entry and missing values. Prior to the analyses, child and maternal demographic variables as well as the primary dependent variables, maternal scaffolding and children's social competence, were examined for accuracy of data entry and missing values. No out-of-range values or univariate outliers were detected upon observation of histograms of the dependent variables. Examination of the data set revealed two cases lacking complete data on the seven maternal scaffolding variables and 17 cases without complete data on children's social competence measures. The pattern of the missing data was examined in order to determine the nature of its distribution within the sample. Sixteen cases possessed the maternal scaffolding variables but lacked the children's social competence measures. One case lacked data on both the maternal

scaffolding variables and children's social competence measures. One additional case possessed data for the children's social competence variables but lacked the maternal scaffolding variables. On the basis of the pattern of missing data the decision was made to eliminate the case lacking all dependent measures from further analyses. For the remaining cases featuring missing data on dependent measures it was decided to utilize expectation maximization methods in order to generate imputed values. Expectation maximization avoids the risk of overfitting, or the production of solutions that look better than they are, and provides realistic estimates of variance (Tabachnick & Fidell, 2001). Further support for this decision was provided on the basis of Little's MCAR test which suggested that the missing data were absent in a fashion that suggested randomness, $\chi^2(11) = 12.74, p = .311$. Thus, the sample used for all subsequent analyses consisted of 59 mother-child dyads, 29 aggressive and 30 non-aggressive.

Examination of the assumptions of univariate analyses. The data was then analyzed to ensure that it met the assumptions of univariate analyses including normality and homogeneity of variance. The distribution of the maternal scaffolding variables and the children's social competence variables were assessed with respect to their skewness and kurtosis for both the aggressive and non-aggressive groups. The distributions of the aggressive children's social competence measures were not significantly different from normality. However, aggressive mother's control ($M = 3.05, SD = 1.89$) was identified as significantly platykurtic. Like the aggressive children, the distributions of the non-aggressive children's social competence variables were not significantly different from normality with the exception of children's assertion ($M = 15.80, SD = 2.74$) which was significantly leptokurtic. Nevertheless, non-aggressive mother's regulation of task

difficulty (M = 2.83, SD = .86), review (M = 4.40, SD = 1.07), rejection (M = 4.63, SD = .67), control (M = 4.00, SD = 1.37), and encouragement of active involvement (M = 4.13, SD = 1.36) were all significantly negatively skewed. In addition, non-aggressive mother's review (M = 4.00, SD = 1.07) was significantly leptokurtic. Despite the aforementioned violations of normality no transformations were performed as the skewed variables shared the same direction of skewness. Furthermore, the variables suffering from kurtosis were not considered to be overly detrimental to the analyses. Homogeneity of variance was assessed using Levene's test for Equality of Variance. Levene's test for the children's social competence variables was non-significant which suggested that group variances did not differ substantially. With respect to the maternal scaffolding variables Levene's test was non-significant for metacognition and encouragement of child's active involvement. Nevertheless, maternal regulation of task difficulty, review, emotional support, rejection, and control were significant suggesting that group variances were not equal. As a result a more robust test of group differences, Welch's t-test, was interpreted for the main analyses.

Group differences on demographic data. Following the examination of the assumptions of univariate analyses, independent sample t-tests were conducted on mother and child demographic variables to ascertain the presence of potential confounds. A significant difference was found between the groups on family structure, t(32.37) = 2.20, p = .035, indicating that more mothers of aggressive preschoolers were single parents than mothers of non-aggressive preschoolers. Nevertheless, family structure was not significantly correlated with any of the dependent measures in the study and was thus not considered further. Demographic data on the sample are shown in Table 1.

Table 1

Characteristics of the Aggressive and Non-Aggressive Comparison Sample

Characteristics	Aggressive Sample (N=29)	Non-Aggressive Sample (N=30)
Child's mean age	4.58	4.59
Child Behavior Checklist		
Aggressive Scale	77.83	46.00
Destructive Scale	73.21	44.67
Mother's mean age	34.65	36.31
Mother's education level[a]	3.67	4.43
Family Income (%)		
Below 17,000	6.90	3.30
17,000 – 24,000	10.30	3.30
24,000 – 30,000	3.40	3.30
30,000 – 40,000	10.30	16.70
40,000+	51.70	70.00
Family Structure		
Single Parent	25.50[*]	6.70

[a]Mother's education is measured on a 1 to 7 continuous scale (Hollingshead, 1975).

*$p < .05$.

Maternal Scaffolding

Mothers of aggressive preschoolers vs. mothers of non-aggressive preschoolers.
In order to test specific hypotheses concerning group differences on maternal scaffolding variables independent sample t-tests were performed on all seven scaffolding behaviours: metacognitive information, regulation of task difficulty, review, emotional support, rejection, controlling, and encouragement of active involvement. The results revealed significant group differences on all maternal scaffolding variables with one exception. Table 2 depicts means and standard deviations for the seven maternal scaffolding variables along with corresponding probability levels. Figures 1, 2, and 3 show the differences between mothers of aggressive and non-aggressive preschoolers on the seven scaffolding behaviours.

Maternal cognitive support variables consist of metacognitive information, regulation of task difficulty, and review. As stated previously, mothers of non-aggressive preschoolers were expected to provide more metacognitive information when compared to mothers of aggressive preschoolers. The results revealed a trend in favour of the mothers of non-aggressive preschoolers over the mothers of aggressive preschoolers. Despite the trend in the hypothesized direction, the difference between groups failed to reach statistical significance. With respect to maternal regulation of task difficulty, it was hypothesized that mothers of non-aggressive preschoolers would exhibit better regulation of the difficulty of their child's task in relation to mothers of aggressive preschoolers. Results supported the hypothesis as mothers of non-aggressive preschoolers provided more regulation of task difficulty than mothers of aggressive preschoolers. Moreover, 77% of mothers of non-aggressive preschoolers consistently broke the task down into

Table 2

Maternal Scaffolding Means and Standard Deviations for Aggressive and Non-Aggressive Comparison Sample

Scaffolding Variable	Mothers of Aggressive Preschoolers		Mothers of Non-Aggressive Preschoolers		
	Mean	Standard Deviation	Mean	Standard Deviation	t
Cognitive Support					
Metacognitive Info	2.28	1.03	2.83	1.32	1.80
Regulation	3.71	1.62	4.53	.86	2.43*
Review	3.48	1.57	4.40	1.07	2.61*
Emotional Support					
Emotional Support	3.29	1.49	4.13	.90	2.62*
Rejection	3.60	1.54	4.63	.67	3.31**
Transfer of Responsibility					
Controlling	3.05	1.89	4.00	1.37	2.21*
Encouragement	3.27	1.67	4.13	1.36	2.19*

*p < .05

**p < .01

Figure 1. Mean scaffolding scores of mothers of aggressive and non-aggressive preschoolers as a function of metacognitive information, regulation of task difficulty, and review.
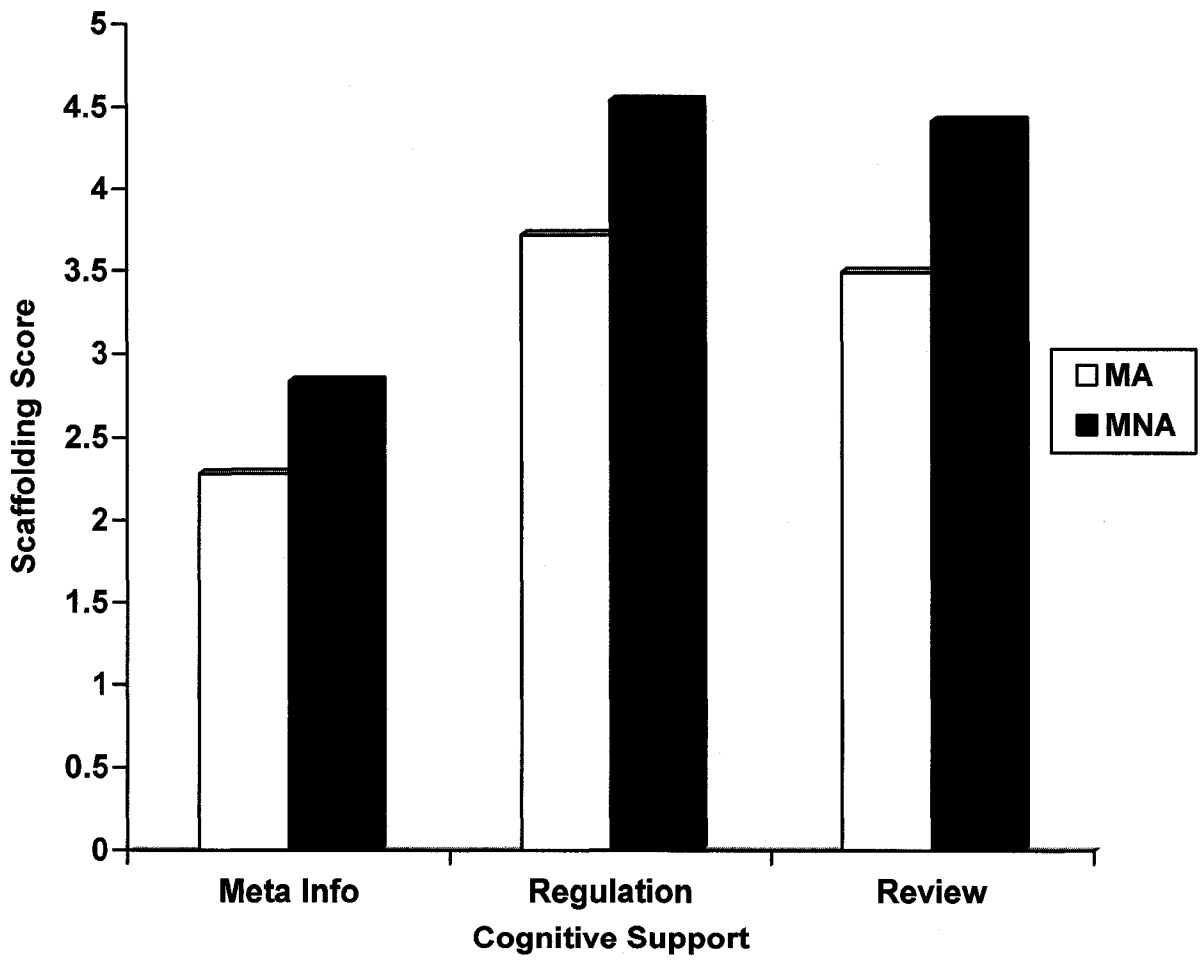
Figure 2. Mean scaffolding scores of mothers of aggressive and non-aggressive preschoolers as a function of emotional support and rejection.
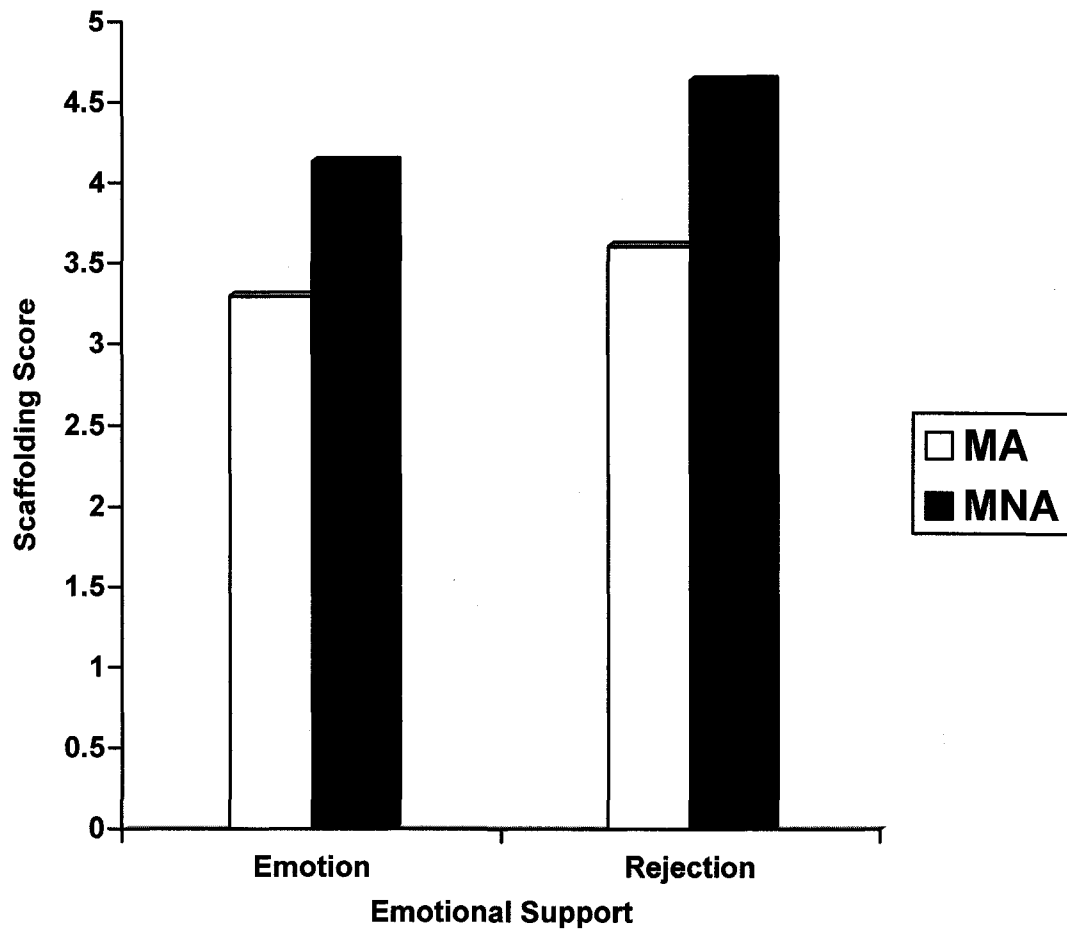
Figure 3. Mean scaffolding scores of mothers of aggressive and non-aggressive preschoolers as a function of controlling and encouragement of active involvement.
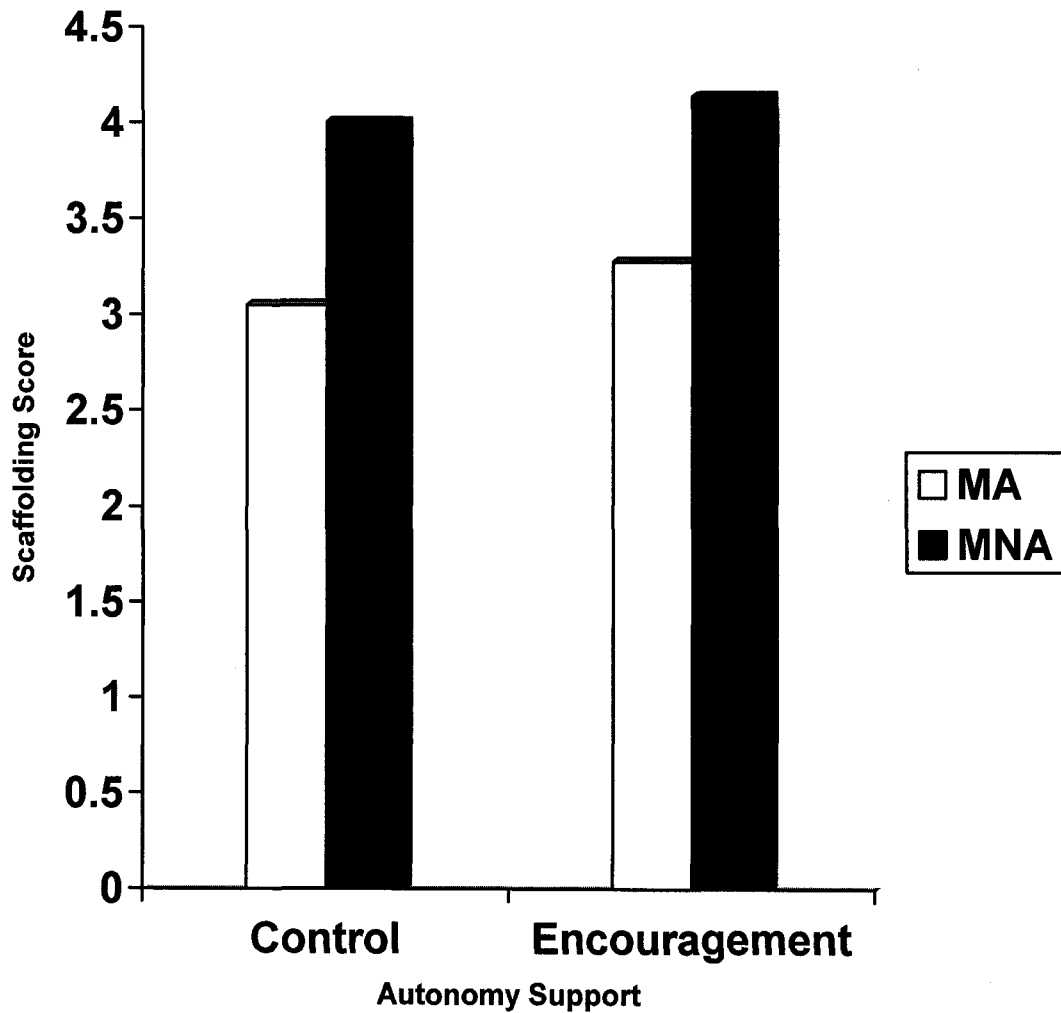
discrete steps whereas 21% of mothers of aggressive preschoolers failed to provide any

review the steps of the task and discuss progress in relation to the overall goal more often

than mothers of aggressive preschoolers. This hypothesis was also confirmed as mothers

deconstruction of the task for their child. For the final cognitive support variable,

maternal review, it was predicted that mothers of non-aggressive preschoolers would

of non-aggressive preschoolers provided more review in relation to mothers of aggressive

preschoolers. The vast majority of mothers of non-aggressive preschoolers frequently

reviewed the instructions for their child (73%). In contrast, 21% of mothers of aggressive

children did not review the steps of the task in relation to the overall goal at any point for

their child.

The emotional support variables consisted of overt signs of emotional support and

rejection. Mothers of non-aggressive preschoolers were expected to provide more

emotional support when compared to mothers of aggressive preschoolers. Results

revealed findings in the expected direction as mothers of non-aggressive preschoolers

provided more verbal and non-verbal instances of emotional support than mothers of

aggressive preschoolers. Interestingly, nearly all the mothers of non-aggressive

preschoolers (97%) demonstrated moderate to substantial indications of emotional

support including positive facial expressions and tone of voice, compliments and eye

contact. On the contrary, 35% of the mothers of aggressive preschoolers provided their

child with minimal to no overt signs of emotional support. In regards to rejection,

mothers of non-aggressive preschoolers were predicted to demonstrate fewer instances of

rejection in relation to mothers of aggressive preschoolers. Again, results confirmed the

hypothesis in the expected direction as mothers of non-aggressive preschoolers were

significantly less likely to reject their child's efforts than mothers of aggressive children. In fact, a review of the frequency of responses indicated that not one mother of a non-aggressive preschoolers exhibited more than one major instance of rejection. Moreover, 73% of mothers of non-aggressive preschoolers did not display even a minor instance of rejection of their child's efforts whereas 21% of mothers of aggressive preschoolers demonstrated several instances of rejection of their child's efforts.

The variables comprising maternal transfer of responsibility consisted of control and encouragement of children's active involvement. In terms of maternal control, it was hypothesized that mothers of non-aggressive preschoolers would demonstrate more appropriate control than mothers of aggressive preschoolers. Consistent with this hypothesis, the results indicated that mothers of non-aggressive preschoolers were more likely to exhibit control characterized by the recognition of their child's region of sensitivity and adherence to contingency rules in comparison with mothers of aggressive preschoolers. Ninety percent of mothers of non-aggressive preschoolers demonstrated at least moderate sensitivity to their child's region of sensitivity and general adherence to the contingency rules. In contrast, 55% of mothers of aggressive preschoolers demonstrated a lack of understanding with respect to their child's progress and multiple breaches of the contingency rules. Regarding maternal transfer of responsibility, it was predicted that mothers of non-aggressive preschoolers would provide more encouragement of their child's active involvement in the problem-solving task in relation to mothers of aggressive preschoolers. Results revealed that mothers of non-aggressive preschoolers did in fact provide more encouragement of their child's active involvement than mothers of aggressive preschoolers. Similar to the group differences on the

controlling variable described above, 90% of mothers of non-aggressive preschoolers consistently provided prompts, hints, and/or questions for their child with only a few indications of providing the child with the answer. Of the mothers of aggressive preschoolers, 28% failed to provide their child with a cue or performed the task for their child themselves.

Children's Social Competence

Aggressive preschoolers vs. non-aggressive preschoolers. Before examining the second set of hypotheses concerning the relationship between maternal scaffolding and children's social competence, aggressive and non-aggressive preschoolers were assessed with respect to differences on their social competence. Preschoolers were assessed on 4 variables considered representative of social competence including responsibility, assertion, cooperation, and self-control. Similar to the maternal scaffolding variables, independent sample t-tests were performed to ascertain group differences. The results revealed significant differences between the aggressive preschoolers and non-aggressive preschoolers on all aspects of social competence. Non-aggressive preschoolers were found to be significantly more responsible, assertive, cooperative and more capable of self-control than their aggressive peers. Table 3 lists means and standard deviations for the four preschooler social competence measures including probability levels.

Correlations between maternal scaffolding and preschoolers' social competence. The relationship between maternal scaffolding and preschoolers' social competence was examined in order to determine the potential influence of such practices on the development of preschoolers' problem-solving skills and in turn social skills. Pearson Product Moment Correlations revealed a number of significant relationships between the

Table 3

Children's Social Competence Means and Standard Deviations for Aggressive and Non-Aggressive Comparison Sample

Social Competence Variable	Aggressive Preschoolers		Non-Aggressive Preschoolers		
	Mean	Standard Deviation	Mean	Standard Deviation	t
Cooperation	8.92	2.58	12.88	2.68	4.50**
Assertion	12.46	2.97	15.80	2.74	4.62**
Responsibility	9.30	2.64	12.93	3.49	5.79**
Self-Control	7.46	2.33	13.19	3.09	8.01**

**$p < .01$

two sets of variables. However statistical significance was not ubiquitous indicating that maternal scaffolding may hold particular importance for some aspects of preschoolers' social competence over others. As such, the hypotheses pertaining to the relationship between maternal scaffolding and preschoolers' social competence were only partially confirmed. Correlations between maternal scaffolding variables and preschoolers' social competence variables are shown in Table 4.

With respect to the variables subsumed under the cognitive support element of maternal scaffolding it was hypothesized that all three – metacognitive information, regulation of task difficulty, and review – would be significantly positively correlated with preschoolers' social competence as measured by responsibility, assertion, cooperation, and self-control. The results indicated that maternal metacognitive information was significantly correlated with preschoolers' cooperation, and self-control. Additionally, a trend was discovered between metacognitive information and preschoolers' responsibility suggesting a moderate relationship between the two variables. Maternal regulation of task difficulty was significantly positively related with all four children's social competence variables. In order of their strength of association, maternal regulation of task difficulty was positively associated with preschoolers' responsibility, cooperation, self-control, and assertion. Likewise, maternal review was significantly positively associated with preschoolers' responsibility, self-control, and cooperation. Significant relationships were again found when the variables comprising maternal emotional support were examined with preschoolers' social competence. It was hypothesized that higher quality maternal emotional support would be positively correlated with preschoolers' social competence. In contrast, maternal rejection was

Table 4

Correlations Between Maternal Scaffolding Behaviours and Children's Social
Competence

Scaffolding Behaviour	Social Competence			
	Cooperation	Assertion	Responsibility	Self-Control
Metacognitive Info	.37**	.21	.25	.30*
Regulation	.38**	.26*	.49**	.37**
Review	.42**	.15	.56**	.45**
Emotional Support	.24	.14	.31*	.44**
Rejection	.38**	.21	.58**	.46**
Controlling	.39**	.17	.58**	.35**
Encouragement	.37**	.12	.38**	.33**

*p < .05

**p < .01

predicted to be inversely related to preschoolers' social competence. Results indicated that maternal emotional support was significantly correlated with preschoolers' self-control and preschoolers' responsibility.

A trend was found between maternal emotional support and preschoolers' cooperation indicating a moderate relationship between the variables. Maternal emotional support failed to reach a statistically significant relationship with preschoolers' assertion. Similarly, maternal rejection of their children's efforts was found to be positively related to preschoolers' responsibility, self-control, and cooperation. A non-significant relationship was found between maternal rejection and preschoolers' assertion. As maternal rejection was reversed scored these findings suggest that lower maternal rejection is positively associated with greater responsibility, self-control, and cooperation amongst preschoolers, thus partially confirming the hypothesis.

The final of the three aspects of maternal scaffolding is transfer of responsibility and was made up of control and encouragement of active involvement. Maternal control was expected to be inversely related with children's social competence such that maternal over-control (i.e., inappropriate control) would be negatively related to preschoolers' social skills. This hypothesis was supported in the case of preschoolers' responsibility, cooperation, and self-control. However, maternal control failed to reach statistical significance in terms of preschoolers' assertion. Maternal encouragement of their child's active involvement was predicted to be positively associated with preschoolers' social competence. Consistent with this hypothesis maternal encouragement of active involvement was significantly associated with preschoolers' responsibility, cooperation,

and self-control. Like maternal control, maternal encouragement of active involvement did not achieve a statistically significant relationship with preschoolers' assertion.

Correlations between maternal scaffolding and children's social competence by group. In order to gain a better understanding of the ways in which maternal scaffolding techniques influence children's social competence, separate correlations were conducted for both the aggressive and non-aggressive dyads. Pearson product-moment correlations revealed a plethora of significant relationships between the two sets of variables, which served to distinguish the influences of maternal scaffolding on children's social competence for both aggressive and non-aggressive dyads. In particular, correlational analyses indicated that each group possessed a unique pattern of significant findings. The correlations are displayed for both groups in Table 5.

With respect to mothers of aggressive preschoolers and their children, maternal scaffolding was consistently significantly correlated with children's responsibility. Of the cognitive support variables mothers' review demonstrated the strongest relationship with children's responsibility, followed by regulation of task difficulty, and metacognitive information. Similarly, mothers' emotional support and review were significantly related to children's responsibility. Finally, maternal control and encouragement of their children's active involvement were also significantly correlated with children's responsibility. While the relationships between aggressive mothers' scaffolding and their children's social competence were marked by the concentration of significant associations with children's responsibility, the non-aggressive dyads exhibited significant correlations across a few variables. Specifically, the variables considered to represent mothers' manner of instruction displayed statistically significant relationships with nearly all

Table 5

Correlations Between Maternal Scaffolding Behaviours and Children's Social
Competence by Group

Scaffolding Behaviour	Social Competence			
	Cooperation	Assertion	Responsibility	Self-Control
Aggressive				
Metacognitive Info	.28	-.04	.41*	.13
Regulation	.17	-.02	.43*	.13
Review	.21	-.27	.55**	.21
Emotional Support	.02	.00	.44*	.25
Rejection	.18	-.10	.66**	.32
Controlling	.17	-.20	.61**	.11
Encouragement	.25	-.18	.51**	.22
Non-Aggressive				
Metacognitive Info	.30	.22	.02	.23
Regulation	.43*	.40*	.48**	.41*
Review	.43*	.36*	.47**	.48**
Emotional Support	.09	-.10	-.05	.43*
Rejection	.22	.20	.34	.29
Controlling	.44*	.37*	.50**	.35
Encouragement	.29	.15	.10	.19

*p < .05

**p < .01

children's social competence measures. For instance, mothers' regulation of task difficulty was significantly correlated with children's responsibility, cooperation, self-control, and assertion. Likewise, mothers' review was significantly associated with children's self-control, responsibility, cooperation, and approached statistical significance with children's assertion. In addition, maternal control was significantly related to three children's social competence measures while approaching statistical significance with the fourth. Thus, mothers' control was positively associated with children's responsibility, cooperation, and assertion. The relationship between maternal control and children's self-control fell just shy of the accepted standard for significance. Mothers' use of metacognitive information, rejection, and encouragement of their children's active involvement were not significantly correlated with children's social competence despite a relatively close association between rejection and children's responsibility. Maternal emotional support was significantly related to children's self-control however it was relatively unrelated to children's cooperation, assertion, and responsibility.

CHAPTER V

Discussion

The discussion will proceed in six sections. First, for the hypotheses pertaining to the group differences on maternal scaffolding, the results will be explained and interpreted with respect to their importance for children's self-regulation. Second, the relationships between maternal scaffolding and children's social competence will be examined in terms of the formers influence on the latter. Thirdly, the pattern of relationships found between maternal scaffolding and children's social competence for each group will be discussed in regards to the identification of strategies critical for children's self-regulation and social competence. Fourth, these findings will be discussed in relation to their implications for treatment approaches designed to reduce children's aggression. Fifth, the major limitations of this study will be reviewed. Finally, directions for future research will be considered.

Maternal Scaffolding

Cognitive Support

Metacognitive information. Despite evidence for a trend in the hypothesized direction, a significant difference was not found between mothers of aggressive preschoolers and mothers of non-aggressive preschoolers with respect to the provision of metacognitive information. This null finding is likely a function of the limited instances of effective metacognitive information use witnessed during the problem-solving interactions. Two interpretations are proposed to account for this lack of use. First, appreciation of the reasons behind decision making may be less important for children of such a young age and/or lack of cognitive sophistication. Second, specific elements of the

instructional task may have precluded the use of metacognitive information as a scaffolding technique. Consistent with these interpretations, of 59 mothers, nearly half (49.2%) provided no or minimal metacognitive information. Nevertheless, the difference between the groups of mothers approached statistical significance suggesting that metacognitive information may not be an insignificant scaffolding technique in regards to the delineating of problem-solving skills.

The first interpretation offered for the null finding for mothers' use of metacognitive information is the age of the children studied. Preschoolers' problem-solving may yet to have developed to the point where consideration of the pertinent information behind decision-making is necessary. Instead, preschoolers may depend upon trial-and-error type problem-solving or direct modeling of their mother's problem-solving during this stage of development. As a consequence, mothers of preschoolers may opt for alternative scaffolding techniques (e.g., regulation of task difficulty, review) when engaged in problem-solving with their children. Support for this interpretation is found when the mean score for metacognitive information is compared with the remaining six scaffolding variables and the two cognitive support variables in particular. Metacognitive information represented the least coded scaffolding technique used by mothers of preschoolers irrespective of group status. In comparison, the means for the maternal emotional support and transfer of responsibility variables were considerably higher. Moreover, mothers' adopted the two alternative cognitive support strategies, regulation of task difficulty and review with more frequency and effectiveness. It is possible that the relatively large difference between mothers' use of alternative scaffolding techniques as opposed to metacognitive information reflects their belief that their children will not

benefit from this type of intervention. The vast but conflicting research directed toward age differences in false belief understanding lend support to this interpretation (e.g., Wellman, Cross, & Watson, 2001).

Theory of mind refers to a child's ability to recognize the mentalistic qualities (i.e., intentions, emotions, beliefs, or desires) that lie behind human behaviour (Flavell, 1999). In essence, theory of mind understanding requires cognitive depth insofar as it permits one to determine the rationale for their own, or another's, behaviour. While lacking in precision, research generally suggests that children acquire this quality over the preschool years with the greatest development occurring between 36 and 54 months of age (Wellman et al., 2001). With this in mind, a mother's decision to use metacognitive information as a scaffolding strategy implies that she believes her child is capable of understanding the relatively complex notion of the reasons that lie behind decision-making. It is possible that given the age of the children in the present study, mothers' relied less upon metacognitive information due to the fact that they were sensitive to their child's cognitive limitations and thus were not confident that their child could make constructive use of such knowledge. Perhaps, those mothers who utilized metacognitive information were those of the older children in the study or those with more advanced cognitive abilities. However, this was not the focus of the study.

The second interpretation posed for the lack of a significant difference between mothers of aggressive and mothers of non-aggressive preschoolers in regards to metacognitive information is that the instructional task used for this study was not conducive to its use. As stated previously, the instructional task required the mother and child to build a tower with 9 blocks, a bridge with 3 blocks, and reproduce 4 block

patterns depicted on DLM matching cards. In coding the problem-solving interactions for maternal use of metacognitive information it became apparent that the vast majority of preschoolers managed to successfully complete both the tower and bridge portions of the interaction. In fact, for many of the preschoolers the tower and bridge tasks appeared to be of less difficulty in comparison to the block building tasks involving the DLM matching cards. Due to the relative ease with which the preschoolers completed the tower and bridge tasks mothers' metacognitive information was often not needed by their children despite frequent maternal regulation of task difficulty and review. The latter tasks involving the DLM matching cards appeared to be more difficult for the children as many struggled to determine aspects of the figures such as height, depth and the position of blocks. While mothers' use of scaffolding techniques remained stable or became more frequent with increasing difficulty, their use of metacognitive information was less frequent and usually pertained to aspects less germane to the task at hand (e.g. the rationale for why a previous structure had to be dismantled). A possible reason for the decrease in concrete instances of metacognitive information during the DLM matching card tasks was the presence of the card as a reference point. Not surprisingly, mothers utilized both regulation of task difficulty and review in referencing the card but rarely needed to explain the rationale behind a decision as the depiction of the pattern on the card served to preclude such a technique. Other studies examining maternal use of metacognitive information have utilized tasks that provide more opportunities for the use of this technique.

Conceivably, more complex block design tasks or tasks requiring more interpretation and planning on the part of the child would illicit more instances of

maternal metacognitive use. In a series of studies, Neitzel, Stright, and colleagues (2001, 2003, 2004) have found ample maternal metacognitive use during interactions involving a revision of Green's (1995) referential communication task, a block puzzle task, an open-ended planning task, and a creative language task. Aside from the block puzzle task which resembles the task used in the present study, the diversity of the aforementioned tasks seems to have forced mothers to draw upon a wider array of metacognitive information including knowledge crucial for planning. Unfortunately, the instructional task used in the present study appears to have not been as effective in this regard.

Regulation of task difficulty. As expected mothers of non-aggressive preschoolers utilized regulation of task difficulty more frequently than did mothers of aggressive preschoolers. In fact, regulation of task difficulty represented the most frequently used cognitive support strategy utilized by mothers irrespective of group status. Like mothers' use of metacognitive information, maternal use of regulation of task difficulty could also be interpreted as a function of their children's age. However in this case, mothers' tended to rely more heavily on regulation of task difficulty implying that it is a scaffolding technique more appropriate for younger children. This is supported by the fact that approximately two-thirds of the entire sample demonstrated consistent use of regulation of task difficulty. The significant difference between the groups in regulating task difficulty implicates its use as an effective tool in mothers' delineation of problem-solving skills to their children.

Despite a large number of mothers of aggressive preschoolers who demonstrated consistent regulation of task difficulty, they can be differentiated from mothers of non-aggressive preschoolers by a few key aspects. First, mothers of aggressive preschoolers

were more likely to fail to provide any form of regulation of task difficulty. Examination of the videotapes does not allow for the determination of the motives for this lack of instruction however research does provides some clues. As stated previously, mothers of aggressive children have been shown to have a poor understanding of their child's developmental norms. Consequently, they often interpret tasks to be within their child's range of ability and when not completed these mothers feel their child has behaved in an intentional manner so as to spite them (Rickard, Graziano, & Forehand, 1984). Second, a number of mothers of aggressive preschoolers were found to sabotage their own regulation of task difficulty by turning the nature of the task into a competition thereby negating its putative value. In addition, a few of these mothers exacerbated this ineffective strategy by out-performing their children. Not surprisingly, the children in these interactions became frustrated and experienced substantial difficulty in completing the task. This type of interaction is less shocking if one considers research by Prinstein and La Greca (1999) that suggests mothers' own social skills are the primary predictor of their children's social competence. Other behaviours demonstrated by preschoolers of inconsistent regulators included self-defeating comments (e.g., "I can't do it!"), reduced interest, misbehaviour, and feelings of being overwhelmed (e.g., "It's too hard").

In contrast, mothers of non-aggressive preschoolers were more likely to exhibit a number of strategies that served to successfully reduce the difficulty of the task for their child. For instance, the majority of consistent regulators of task difficulty broke the task down into a step-by-step procedure that progressed by colour or row. During the DLM matching card tasks, these mothers frequently covered sections of the patterns in order for their child to concentrate on one, more manageable element at a time. Additional

strategies employed include counting the requisite number of blocks, holding the card closer, or placing the card on the table so that the child could place the blocks in the correct position. The children of these mothers demonstrated the opposite pattern of behaviours of those described above. For instance, children of consistent regulators seemed to gain confidence with each completed task, approached tasks as a challenge they could meet, and rarely displayed behaviour which would suggest they were overwhelmed. Of particular note were children who adopted their mothers' regulation strategies for their independent use as the interaction progressed. These cases provide evidence for Vygotsky's (1978) notion that children begin to internalize external (i.e., adult) directives and strategies in developing self-regulatory skills.

Review. Maternal review and regulation of task difficulty are cognitive support variables that refer to the mother's manner of instruction. Therefore consistent with the significant difference found for maternal regulation of task difficulty, mothers of non-aggressive preschoolers were found to more effectively review the steps of the task in relation to its overall goal than mothers of aggressive preschoolers. Maternal review was a common strategy used by mothers from both groups indicating its utility with preschool age children. Over half of the sample provided consistent review including nearly half of mothers of aggressive preschoolers. Despite its overall popularity as a scaffolding technique, mothers of non-aggressive preschoolers were far more consistent when it came to reviewing tasks steps with their child. Of the 30 mothers of non-aggressive preschoolers, only one failed to review the steps of the tasks with her child while 22 consistently reviewed. The overwhelmingly consistent use of review amongst mothers of non-aggressive preschoolers points to its importance during problem-solving interactions.

Mothers of non-aggressive preschoolers displayed a variety of strategies that were considered to represent review. The most frequent of these strategies was counting the number of blocks already used in order to determine the amount still left to be used. Due to its similarity with regulation of task difficulty, review was often distinguished from the regulation on the basis of the timing of its application. For instance, when mothers counted blocks prior to the child's building of the structure it was coded as an instance of regulation. This limited the amount of attention the child needed to direct towards less pertinent aspects of the task while allowing them to concentrate on more important elements. On the contrary, if in the midst of the task mothers (and children) counted the blocks in order to determine the number of blocks left to be used it was coded as an example of review. In the latter scenario, the mother had helped the child evaluate his/her progress in relation to the overall goal. Additional examples of maternal strategies considered to be instances of review included repeating parts of the instructions following the child's completion of an initial step and referring the child's attention to either the mother's model or the DLM matching card in order to assess whether the child's structure was accurate and/or complete. In contrast, mothers who scored low on review were characterized by a general absence of instances of review.

Children of mothers who utilized consistent review appeared to display two prominent behaviours indicative of self-regulation. The first was greater on-task behaviour characterized by more concentrated attention. These children were less likely to become disinterested in the task and seemed eager to meet the challenge of completing the structure. The second behaviour of children of consistent reviewers was the self-recognition and self-correction of mistakes. The latter is consistent with children who

adopted their mothers' regulation strategies as stated above. It appeared that children of consistent reviewers maintained a portion of their attention on the overall goal of the task, which likely enabled them to independently identify and correct their structures. Quite the opposite, children of poor reviewers seemed more off-task, frustrated, confused, and less interested.

Implications of maternal cognitive support for children's self-regulation. Despite the absence of a statistically significant difference, the results indicate that mothers of non-aggressive preschoolers were clearly more effective in utilizing metacognitive information during interactions with their children when compared to mothers of aggressive preschoolers. These findings are relatively consistent with those of Neitzel, Stright and colleagues (2001, 2003, 2004) with kindergarten and school-age children. These researchers have found that maternal use of metacognitive information is implicated in children's academic self-regulation in the form of cognitive awareness and management. More specifically, children who receive metacognitive information are more likely to use metacognitive talk, monitoring, and help-seeking although both metacognitive talk and monitoring were moderated by mothers' manner of instruction in the case of kindergartners (Neitzel & Stright, 2003; Stright et al., 2001). Thus given its relationship with children's self-regulatory behaviour, metacognitive information should not be discredited as a strategy for the development of children's self-regulation.

Maternal manner of instruction (i.e., regulation of task difficulty and review) served three main purposes: introduction, maintenance, and redirection. In reality these methods served to assist preschoolers with the allocation and control of their attention. Neitzel, Stright and colleagues (2001, 2003, 2004) have consistently found that mothers'

manner of instruction is critical in their children's comprehension and internalization of metacognitive information insofar as it permits them the opportunity to focus their attention on the pertinent aspects of the task or in other words, regulate their attention. Moreover, maternal strategies designed to support their children's attentional control have been found to have positive effects in this regard from infancy to early childhood. For instance, a number of studies have demonstrated that mothers' use of structured, attention-directing strategies, as opposed to simple attention orientation, are associated with increased infant attention (e.g., Bono & Stifter, 2003; Findji, 1998; Landry, Garner, Swank, & Baldwin, 1996). Specifically, these studies found that maternal introduction, maintenance, and redirection were associated with greater infant focused attention across play and problem-solving situations. These findings remain stable during the toddler years and extend beyond attentional regulation to indicators of emotional and behavioural regulation. Putnam, Spritz, & Stifter (2002) demonstrated that mothers' use of distraction (i.e., redirection) was associated with children who were more able to abstain from touching an attractive toy, which serves as an indicator of behavioural and attentional regulation. Similarly, Braungart-Reiker, Garwood, and Stifter (1997) discovered that less maternal guidance in combination with more control (discussed below) was related to higher maternal ratings of children's negative reactivity. Additionally, these children demonstrated more noncompliance and less committed compliance. Finally, Supplee, Shaw, Hailstones, and Hartman (2004) demonstrated that maternal instruction predicted children's academic self-regulation and emotion regulation at school entry after controlling for children's negative emotionality and maternal education, depression, and IQ. Thus it would seem that the findings in the present study as well as those examining

similar maternal instructional and attention-directing techniques suggest that mothers' use of cognitive support has a pervasive influence on children's development of self-regulation.

Emotional Support

Emotional support. Mothers' use of emotional support was coded on the basis of positive feedback in the form of supportive facial expressions, comforting gestures, a warm and encouraging tone of voice, and compliments. While most mothers demonstrated at least one of these criteria, ratings were based on the variety and consistency of their use during the interactions with their children. On this basis, mothers of non-aggressive preschoolers were clearly more effective employers of emotional support in comparison with mothers of aggressive preschoolers. In fact, no mothers of non-aggressive children failed to demonstrate at least one instance of emotional support and the vast majority of the mothers provided moderate to substantial emotional support. Greater than one-third of mothers of aggressive preschoolers provided little or no examples of emotional support. This finding adds to an already large body of research that implicates parental warmth and affection as critical elements in a child's development of social competence (e.g., Bates & Bayles, 1988; Booth et al., 1994; Matas et al., 1978; Steelman, Assel, Swank, Smith, & Landry, 2002).

The primary advantage of the conceptualization of scaffolding used in this study (Neitzel & Stright, 2003) is its incorporation of those elements of the parent-child interaction that cannot be accounted for through simple transcription. In terms of emotional support, the operational definition used here allows for the acknowledgement of the more subtle aspects of the interaction including eye contact and tone of voice.

Observation of the mother-child interactions revealed stark contrasts between the groups on these more subtle aspects and their influence on preschoolers' problem-solving. Thus, while previous studies involving maternal scaffolding assessed the contents of maternal instructions, the present study was able to evaluate how the nature of these instructions were attenuated by mothers' emotional expression.

Emotionally supportive mothers frequently and consistently used a variety of emotionally responsive tactics that appeared to promote their children's problem-solving efforts. For example, mothers who exhibited high quality emotional support maintained eye contact both with their child and on the task. Additionally, emotionally supportive mothers frequently reassured their children's efforts both while in the process of building (e.g., "It looks like you've got it!") and following mistakes (e.g., "Good try. That's a hard one."). Interestingly, these mothers did not avoid pointing out their child's mistakes, however they did so in a fashion that did not discourage or humiliate the child while promoting their continued effort. Maternal facial expressions also served to reassure children as well as convey a sense of achievement upon task completion. Furthermore, mothers who demonstrated good emotional support used adjustments in their tone of voice to express a range of emotions such as excitement and surprise. This more nurturing tone also seemed to facilitate children's acceptance of maternal instruction as it was presumably less threatening and/or critical of their efforts. Finally, consistent with Menna and Landy (1997), emotionally supportive mothers were not threatened by their child's misbehaviour. Recognizing their child was moving off-task, these mothers frequently changed their manner of instruction either from regulation to review or vice versa in order to regain their child's attention.

In general, poor emotional supporters were inconsistent with their use of the aforementioned techniques. This inconsistency seemingly conveyed the mothers' modest interest in their child's efforts. They provided limited eye contact, few smiles, and nearly no compliments, which seemed to foster a superficial environment unfavourable to problem-solving instruction or learning. Of particular note were mothers who were overly concerned with the efficiency with which their children completed the tasks. These mothers appeared to provide conditional support for their children contingent upon their rapid and successful completion of the task. While these interactions were characterized by a lack of quality emotional support they were also indicative of mothers' rejection (see below) of their children's efforts.

The differences between children of consistent and inconsistent emotionally supportive mothers' were substantial. Those with mothers who provided consistent emotional support demonstrated more on-task behaviour, which was likely due to the fact that they seemed to enjoy the tasks as well as interacting with their mother. Children of emotionally supportive mothers appeared to display more affect yet only a few lost control of their emotions. When they did become overly frustrated or disappointed it seemed these children were usually able to regain their composure more readily than children of less emotionally supportive mothers. The latter group was characterized by frustration, frequent misbehaviour and a lack of enjoyment with respect to the tasks.

Rejection. Maternal rejection was distinguished from mothers who were emotionally unsupportive by the particularly cruel and malevolent nature with which they interacted with their children. Unlike emotionally unsupportive mothers, who failed to consistently display positive emotional signals, rejecting mothers used verbal and non-

verbal indicators of their apparent displeasure with their child. Due to the somewhat artificial nature of the interaction it is not surprising that few overt signs of maternal rejection were detected. Nevertheless, six mothers exhibited several obvious signs of rejection during the problem-solving interactions. Consistent with the hypothesis, all of these cases were mothers of aggressive preschoolers. Furthermore, over half of the mothers of aggressive preschoolers demonstrated at least a minor instance of rejection toward their child. This is contrasted by the mothers of non-aggressive preschoolers of whom none demonstrated a major example of rejection and nearly three-quarters did not display any indication of rejection whatsoever.

Despite only a few major instances of rejection, these mothers were easily distinguishable from mothers who were non-rejecting. A few of the more subtle rejecting behaviours of these mothers were rolling their eyes, sighs, and negative body language, all of which served to convey the mothers' disappointment, frustration, and even exasperation with their child. More severe instances of maternal rejection included sarcastic comments or questions (e.g., "Are you going to try or are you just going to sit there?") and harsh redirection (e.g., "No, it goes this way!"). In sum these signs of rejection served to foster an anxious environment characterized by a lack of cohesion between rejecting mothers and their children. As suggested above, children of rejecting mothers began to show signs of increasing stress as some mothers pressed them to come up with the correct response in order to complete the task. Needless to say, these children exhibited frustration, confusion, anxiety and a lack of self-confidence. Those mothers who combined rejection with an overly controlling nature (see below) seemed to have

children who gave up more quickly and were more dependent. Many of these maternal and child behaviours are consistent with those of abusive parents and abused children.

Implications of maternal emotional support for children's self-regulation. From a holistic standpoint, emotionally supportive and unsupportive mothers established vastly different environments for their children's problem-solving. For instance, emotionally supportive mothers were emotionally responsive to their children's problem-solving efforts irrespective of their success. The impact of this practice can be viewed as threefold. First, children of emotionally supportive mothers appeared to enjoy the task more than those of less emotionally supportive mothers. As a result these dyads displayed a better rapport during interactions, which could be considered the crucial prerequisite for children's self-regulatory development. Second, maternal emotional responsiveness conveyed to their children their genuine interest in the activity. Consistent with this, research by Lehman, Steier, Guidash, and Wanna (2002) has illustrated that mothers' emotional availability is the strongest predictor of children's compliance during free play and clean-up tasks. Third, emotional responsiveness may help to facilitate children's internalization of problem-solving strategies. As stated, emotionally responsive mothers provided consistent affective support regardless of their children's performance. This consistency likely serves to establish an optimal level of arousal for which to receive maternal instruction. In contrast, rejecting mothers' appear to cultivate an environment of heightened arousal characterized by fear and anxiety. As discussed in the introduction, such heightened states of arousal serve to limit the amount of attention children place on maternal instruction as they are preoccupied with the consequences of their actions (Hoffman, 1994).

Maternal emotional support also serves to provide children the vital emotion socialization required for adaptive emotion regulation. Emotion socialization is typically most evident in the case of positive emotions. Nevertheless, it is the socialization of negative emotions that is critical for children prone to emotional dysregulation. In order for children to function adaptively, when experiencing difficulty they require the capacity to appropriately express their feelings as well as regain composure. It is likely that emotionally supportive mothers foster these qualities in their children through their own reactions to failure and disappointment. When expressed adaptively, mothers' emotional expressions serve as a model for the coordination of regulatory systems. Thus, emotionally supportive mothers concentrate attention on correction rather than dwelling on mistakes, which limits negative emotions and promotes positive action. In turn, the effective coordination of regulatory systems prevents the development of perseverative feedback loops that result in the volatile and unremitting reactions associated with emotional dysregulation.

Quite the opposite, consistently harsh and rejecting mothers may cultivate children's insecurity leading to a lack of coordination with respect to regulatory systems and disabling emotionality (Chang et al., 2003). The pathway toward maladaptive emotionality likely begins with repeated maternal negativity and arousal-heightening responses. These practices strip children of the sense of self-efficacy necessary for resilience in the face of struggles. Given this lack of resilience, it's possible that children of rejecting mothers become overly sensitive to failure which leads to them to ruminate on these failures, thus contributing to their negative emotionality and promoting volatile responses. Thus, void of adaptive regulatory processes these children are prone to

perseverative feedback loops that increase emotional intensity. Support for the failure of regulatory system coordination in children of rejecting mothers is found in the research of Calkins and colleagues (Calkins, Smith, Gill, & Johnson, 1998) who found that negative maternal behaviour is related to poor physiological regulation, less adaptive emotion regulation, and noncompliance.

Transfer of Responsibility

Controlling. The variables representing maternal transfer of responsibility (controlling and encouragement of active involvement) concentrated on the timing and locus of mothers' instruction, respectively. Thus, maternal control assessed the mothers' recognition of preschoolers' region of sensitivity and the appropriate use of contingency rules. As predicted, mothers' of non-aggressive preschoolers were more apt to intervene in their child's region of sensitivity and appropriately apply contingency rules when providing instruction than mothers of aggressive preschoolers. The differences between the groups was particularly telling considering that 90% of mothers of non-aggressive preschoolers provided instruction only when their child required it or demonstrated a single incident of minor under/over-control. In comparison, while roughly only one-quarter of mothers consistently under/over-controlled the problem-solving interactions, the vast majority of these mothers were those of aggressive preschoolers. These findings are consistent with those of researchers who have examined parental control and instructional style among parents of children with poor social skills.

Mothers who demonstrated appropriate levels of control over their child's problem-solving were sensitive to their child's developmental level which enabled them to intervene only when necessary, using appropriate levels of instruction. These mothers

displayed patience while attentively following their child's efforts and appeared content to allow them to complete the task on their own if they were able to do so. On the other hand, sensing difficulty these mothers intervened with instruction that was appropriate for their child's level of understanding. This instruction was typically succinct insofar as it did not inundate the child with alternatives. Immediately following instruction these mothers tended to refrain from introducing more instruction until their child had the opportunity to attempt the next stage of the task on their own. Overall, these mother-child dyads displayed synchronicity and an ample exchange of dialogue both of which are characteristic of good rapport.

Sroufe and Fleeson (1986) have suggested that the interactions observed during the Strange Situation Test (Ainsworth et al., 1978) could be assumed to represent the nature of the parent-child attachment relationship rather than specific attachment behaviours. Likewise, the instructional task coded in the present study can be understood to represent the typical behaviours that have characterized the mother-child problem-solving relationship. Thus, just as securely attached children and their parents have developed effective strategies for dealing with periods of distress, so to have appropriately controlling mothers and their children developed effective methods for dealing with problems. Children of appropriately controlling mothers exhibited more concentration on the task, less emotional breakdowns, and more on-task behaviour. In line with positive levels of rapport, these children seemed to be more likely to try different strategies on their own and ask for further assistance when they encountered difficulty. Moreover, these children appeared to enjoy the task.

While mothers who exhibited appropriate levels of control seemed to have developed a positive rapport with their children, inappropriately controlling mothers generated an environment typified by irregularity. Many of these mothers failed to establish a predictable pattern of intervention. As such, many inappropriately controlling mothers were equally likely to adopt both a laissez-faire and power assertive style of parenting during the same task. Consequently, children of these mothers often were more frustrated and confused likely due to the fact that their mothers were unreliable. With respect to under-controlling mothers, it was observed that they frequently allowed their child to flounder before intervening. This usually led to the child becoming frustrated to the point where they were not in a state to accept instruction. Quite the opposite but no more effective, over-controlling mothers frequently failed to recede following instruction. This strategy regularly led to unproductive power struggles illustrated by children's obstinacy and argumentativeness. Unlike the rapport found between mothers who exhibited appropriate control, the interaction between under-controlling mothers and their children resembled strangers whereas those of over-controlling mothers and their children were exceedingly contentious.

Encouragement of the child's active involvement. Encouragement of the child's active involvement was evaluated based on the extent to which mothers' used positive encouragement or open-ended prompts (e.g., questions, hints) to promote their child's autonomous problem-solving. This was contrasted by mother's who were overly directive of their child's problem-solving and relied on negative encouragement which was characterized by providing their children with the correct solutions and/or completing the tasks themselves. For the most part, mothers used positive encouragement far more than

negative encouragement as evidenced by the fact that over half of the sample consistently assisted their children through the use of prompts, questions, or hints. However, as expected mothers of non-aggressive preschoolers relied exclusively on positive encouragement far more than mothers of aggressive preschoolers. Two-thirds of mothers of non-aggressive preschoolers consistently used positive encouragement compared to less than half of mothers of aggressive preschoolers. Furthermore, only three mothers of non-aggressive preschoolers were overly directive of their child's problem-solving. Like the findings for the preceding six scaffolding variables discussed above, these results are consistent with research on mothers of aggressive children.

To suggest that mothers who consistently positively encouraged their children's active involvement simply provided open-ended prompts would not capture the full extent of the impact these techniques had on their children's problem-solving. In addition to utilizing these techniques these mothers fostered their children's autonomous problem-solving in numerous ways. For instance, positively encouraging mothers regularly kept the progression of the task moving forward while allowing their children to dictate the speed of their problem-solving. Thus, their children appeared more independent as well as more willing to approach the task as a challenge they could meet (e.g., "I can do that one!"). They provided subtle prompts, hints or question (e.g., "Where do you think the green one should go?") only when their children's efforts appeared to stall. This permitted a more comfortable interaction that seemed to cultivate their children's understanding of the problem. Furthermore, these mothers allowed their children to interpret the nature of the structures for themselves thereby encouraging their creativity. Perhaps as a consequence, children of these mothers were less anxious and exhibited few signs of

frustration. Lastly, positively encouraging mothers did not rely on one particular technique for promoting their children's active involvement. Instead, they utilized all three interchangeably which served to aid in maintaining their children's attention. This was effective as children of positively encouraging mothers displayed more on-task behaviour. Most importantly, these mothers were more effective at making the task interesting and as a result more enjoyable for their children.

In contrast to mothers who provided consistent positive encouragement, negatively encouraging mothers dominated the problem-solving interactions which served to alienate their children from the task. As the operational definition suggests, these mothers were highly directive (e.g., "You need nine blocks") and used commands (e.g., "Put the yellow one on top of the red one...") to assist their children in completing the task. Understandably, children of these mothers were more dependent during problem-solving interaction and were often fearful of making mistakes. In essence, children of negatively encouraging mothers became their assistants as the mothers completed the tasks themselves. A few negatively encouraging mothers initially allowed their children to direct the problem-solving interaction however when they made an error these mothers usurped their children's efforts. What is more, the majority of the negatively encouraging mothers used coercive tactics to motivate their children. These tactics included bribes (e.g., "If you finish this one, I will do the next one"), appeals to third parties (e.g., "You have to finish it because the lady said so"), and other manipulative comments (e.g., "It's not that hard...I think your brother could do this"). Interestingly, it appeared that the children of these mothers were less motivated to engage

in the task following the use of these coercive strategies. In all, negatively encouraging mothers facilitated a superficial understanding of problem-solving in their children.

Implications of maternal autonomy support for children's self-regulation. If the goal of self-regulation is the internalization of adult approaches to problem scenarios, than children must be afforded the opportunity to use such approaches independently. In doing so children can begin to gain a fuller understanding of the reasons why to approach a problem in a particular fashion, how to appropriately manage it, and what they can expect following certain actions. These experiences help to foster children's development of self-efficacy, which represents a necessary component for adequate self-regulatory functioning. In addition, these experiences provide children with a store of self-regulatory devices to draw upon during problem situations. However, self-regulatory competence requires more than the mere independent opportunity to solve problems. Rather it depends on adults' recognition and sensitivity to developmental norms such that they can progressively allocate more autonomy to their children as they mature.

Autonomy supportive mothers convey to their children that they are the "owners" of the task but they are not alone in their efforts. It is likely this stance that promotes the committed form of compliance that Kochanska and colleagues (Kochanska & Askan, 1995) see as vital for self-regulatory proficiency. These mothers enable their children the opportunity to internalize the maternal agenda without unnecessary interference. Thus, while responsive to their needs, these mothers allow their children the chance to approach problems for themselves, which in turn lets them recognize the effectiveness of such behaviours, and permits them to experience the resulting reward. As a consequence, children of mothers who promote their autonomous behaviour are able to recognize the

intrinsic value of such regulatory abilities. Furthermore, the impact of maternal autonomy support extends to both the attentional and emotional correlates of self-regulation. For instance, the opportunity to confront a problem independently forces children to allocate the vast majority of their attentional resources to the task. Additionally, these mothers' quick and developmentally appropriate responses to their children's problem-solving setbacks limit the extent to which they can become overwrought by failure.

As opposed to autonomy supportive mothers, mothers who are overly involved in their children's management of problems and rely on directive instruction limit their children's self-regulatory development. In essence, these mothers strip their children of the opportunity to confront problem situations through a process of micromanagement and command-like instruction. This approach seemingly leaves children alienated from their own difficult situations and void of the capacity for self-regulation. Without a modicum of self-regulatory ability these children become dependent on external forms of regulation such as close monitoring and medication. Not surprisingly, the vast majority of children who experience aggression or other externalizing forms of psychopathology display severe impulsivity characterized by an inability to delay gratification. Indicative of a lack of behavioural regulation, these traits can be attributable to the superficial understanding of self-regulation these children possess. Given the fact that their difficulties have largely been other-regulated, these children are equipped with a scarcity of regulatory strategies. Thus, when confronted with situations that tax their self-regulation they are prone to impulsive forms of behaviour, which often result in recklessness, or worse, aggression. Similar outcomes are found in children of mothers who adopt a less controlling but no more effective interaction style.

Consistently under-controlling and permissive mothers poorly equip their children with self-regulatory strategies leaving them vulnerable to regulatory difficulties like inattention, impulsivity and noncompliance. In fact, mothers who are characterized as under-controlling and permissive serve to negatively reinforce their children's regulatory difficulties. Confronted with problem situations children of these mothers are forced to resort to behaviours that are likely to garner her attention. Over the course of the child's early years, a pattern may develop whereby under-controlling and permissive mothers limit their support to only those times when their children appear disturbed. As a consequence children may begin to steadily increase the intensity of this poorly regulated behaviour while also becoming more reliant on it. The result of these poorly regulated interactions is a well-established regulatory repertoire that is not only maladaptive but relies on illiciting others for support and guidance. This pattern is consistent with studies suggesting that parental under-control and permissiveness is associated with behaviour regulation deficits. For instance, Schalenbourg and Verschueren (2003) found that young children's hostile and aggressive behaviour was predicted by paternal permissiveness in combination with a maternal style characterized by more permissiveness and less authoritative or authoritarian parenting styles. Similarly, research has shown that parents of children with externalizing problems were more likely to engage in a permissive pattern of interaction with their children during problem-solving tasks in comparison to parents of children with comorbid internalizing and externalizing difficulties (Granic & Lamey, 2002). Interestingly, these researchers found that parents and children with comorbid difficulties moved from a permissive pattern to a mutually hostile pattern of interaction after a planned perturbation.

Somewhat unexpectedly, a third poor maternal autonomy support tactic was observed during the problem-solving interactions. This involved coercive attempts by mothers to gain children's compliance such as bribes and appeals to third party authority. Each of these tactics served to discourage children's development of self-regulation insofar as it pertains to the internalization of maternal instruction. Seemingly, in relying on bribes to elicit their children's compliance, coercive mothers are endorsing the more immature form of compliance identified by Kochanska and her colleagues (Kochanska & Askan, 1995) as situational. As they suggested, situational compliance does not involve the internalization of the maternal agenda; rather, it is limited to domain-specific events. Furthermore, bribes may limit children's self-regulatory development by prematurely alleviating the problem scenario. Thus, children fail to gain the self-efficacy needed to persevere in times of struggle. With respect to mothers' appeals to third party authority, mothers fail to convey to their children the intrinsic value of problem-solving while reducing their standing as the primary agent for their self-regulatory development. Consistent with these patterns research has consistently shown coercive parenting practices to be associated with behaviour problems (e.g., Alvarenga & Piccinini, 2001). Moreover, these assertions are aligned with Patterson's (1982) depiction of coercive parenting and its influence on the establishment of poor communication patterns and maladaptive child behaviour.

Maternal scaffolding: The means to children's self-regulatory maturity

As discussed in the introduction, Vygotsky saw inner speech as the means to children's self-regulatory maturity. The caregiver's role in the development of their children's inner speech is the acknowledgement and sensitivity to the sub-content of their

children's thoughts and words. In this way, together with their child, caregiver's create meaning, which serves to unify the child's thoughts and words and thus promote children's more volitional control of their cognitions, emotions, and behaviours. The results of the present study suggest that scaffolding, as it pertains to cognitive, emotional and autonomy support, represents the tool for the development of meaning between child and caregiver. As such, effective scaffolding whether metacognitive information, emotional support and/or appropriate levels of control serve to satisfy the need for the recognition and sensitivity to the latent structure of children's thoughts and words. What is more, scaffolding techniques such as regulation of task difficulty and review as well the encouragement of children's active involvement act as a springboard from which children can begin to expand on their self-regulatory capacities by incorporating more specific strategies that may permit socially competent behaviour.

The influence of maternal scaffolding then may be twofold. First, as detailed above, maternal scaffolding aids in children's development of self-regulation. Without a foundation of self-regulatory competence children's cognitive, emotional and behavioural functioning fail to coordinate and operate in isolation of each other. Vygotsky noted that the independence of these processes represented immaturity, or worse yet, psychopathology (cited from Bruner, 1987). Second, with a foundation of self-regulatory competence in place maternal scaffolding may help children with the development of the skills needed for more socially competent behaviour. Having developed the ability to concentrate their attention, manage their emotions and control their behaviour, children are in a position to be receptive to the relatively more advanced skills required for successful functioning in society. It is in this way that Vygotsky's ideas extend beyond

the realm of mere education and into the realm of cultural transmission (Bruner, 1987).

Thus, it is possible that mothers' use of scaffolding techniques establishes the conditions

for internalization as well as fosters the development of social competence.

Children's Social Competence

Differences between Aggressive and Non-Aggressive Preschoolers

   Social competence. Given the inherent self-regulatory deficits of aggressive

preschoolers, no formal hypotheses were made with respect to children's cooperation,

assertion, responsibility, or self-control. Not surprisingly, non-aggressive preschoolers

were significantly differentiated from their more aggressive peers on all measures of

social competence. In fact, the mean differences between the groups suggest non-

aggressive preschoolers are far more socially competent than aggressive preschoolers

especially in regards to self-control. This reflects the pervasive self-regulatory difficulties

experienced by aggressive children and supports the numerous treatment approaches

based on the notion that aggressive children possess deficits in regards to social skills

(e.g., Factor & Shilmoeller, 1983; Spivack & Shure, 1974; Spivack et al., 1976).

   In addition, these findings enabled examination of the second set of hypotheses.

Specifically, given the near ubiquity of the significant differences between mothers of

aggressive and non-aggressive preschoolers on the scaffolding measures and the inherent

implication for children's aggression and poor self-regulation, these results beseeched the

examination of the relationship between maternal scaffolding and children's social

competence. Thus, the discussion that follows serves to interpret the findings which

suggest maternal scaffolding strategies have specific utility for the delineation of

children's social skills.

Correlations between Maternal Scaffolding and Children's Social Competence

The distinct pattern of relationships found between mothers' scaffolding techniques and children's social competence suggests these tactics play a role in the latter's development. In particular, the near universality of significant associations among all seven maternal scaffolding variables and children's cooperation, responsibility, and self-control not only indicates that the tactics mothers employ are crucial in their children's social skill development but that children may benefit from these strategies as early as the preschool years. On the other hand, the fact that only mothers' regulation of task difficulty was significantly correlated with children's assertion is somewhat puzzling. One possible explanation for this finding is that assertion represents a social skill that is more temperamentally based and thus less influenced by maternal scaffolding.

Cooperation. Consistent with the hypothesis, the variables comprising cognitive and autonomy support were highly (positively) correlated with children's cooperation. Mothers' rejection was also significantly associated with children's cooperation, however emotional support fell short of statistical significance. The relationship between cognitive support and cooperation can be interpreted in a couple of ways. First, mothers' use of metacognitive information may provide children with the perspective necessary to engage in activities with others. Thus, in providing their children with the reasons behind decision-making children not only become more effective problem-solvers but develop an understanding of their peers' thought processes during joint activities. As a result, children may be more likely to coordinate their efforts with others. Support for this interpretation is found in research by Capage and Watson (2001) who found that performance on false belief tasks was positively correlated with children's social

competence. Second, the ability to regulate task difficulty and review progress in relation to the overall goal of the task may be conducive to cooperation insofar as they enable the distribution of tasks and help to establish a common goal. Thus, assuming the Vygotskian notion of internalization, mothers' use of regulation and review may provide children with prosocial strategies which lead to coordinated efforts with others.

In regards to the relationship between the maternal autonomy support variables and children's cooperation, appropriate control and encouragement of children's active involvement may impact cooperation through the development of children's independence. These strategies may serve to foster children's intrinsic appreciation for problem-solving while reducing their dependence on others. Autonomous preschoolers have been shown to be psychologically well-adjusted (Deci & Ryan, 1994), know how to relate to others, take responsibility for their actions, and trust both themselves and others without becoming excessively reliant (Bretherton, 1987). These traits likely make autonomous children more attractive playmates for other children.

The results pertaining to the variables subsumed under children's emotional support can be explained according to the nature of the mother-child problem-solving history. For instance, on the basis of their prior problem-solving experiences, children who have developed the expectation that their efforts will not be met with rejection are more likely to engage in joint tasks with others. Furthermore, given the implications of maternal emotional support for children's emotion regulation, children of emotionally supportive mothers are more likely to modulate their emotions during moments of conflict or misunderstanding. In turn, the regulation of emotion allows children to continue their cooperative efforts rather than destroy such efforts through displays of

excessive emotionality. Consistent with this idea, Denham and Grout (1992) found that the ways in which mothers of preschool children express emotions and cope with negative emotions influenced their children's expressions of emotions, understanding of emotions and coping with emotions. What is more, mothers' happiness was related to children's emotional positivity, prosocial behaviour, and social competence. In sum, an effective mother-child problem-solving history that features displays of effective emotion coping, in all probability sets the stage for children's cooperation with peers through the establishment of self-regulatory competence.

Responsibility. Like the relationships between maternal scaffolding techniques and children's cooperation, the correlations among the former with children's responsibility were nearly all significant with one minor exception. The strength of the associations suggest that mothers' manner of instruction (regulation of task difficulty and review) and autonomy support were particularly important in their children's responsibility. In addition, maternal emotional support was also significantly correlated with children's responsibility. Mothers' use of metacognitive information failed to reach a statistically significant relationship with children's responsibility, however the difference from significance was negligible. In all, the results serve to support the hypothesis in regards to the relationship between maternal scaffolding and children's responsibility.

With respect to mothers' manner of instruction, providing children with specific strategies like regulation and review may enhance their ability to assume accountability for tasks or actions thereby promoting follow through on instruction and completion of tasks. Perhaps the ability to interpret instructions in such a manner as to break the requirements into more manageable parts serves to reduce the burdensome nature of

requests and increase children's belief that they can complete tasks. Consequently children begin to accept tasks as their own, confident that they can complete them. The validity of this assertion requires further research. Nevertheless, the acquisition of such self-regulatory skills likely encourages the child's manifestation of prosocial rules including responsibility. That is, while children of this age may grasp the intrinsic value of responsibility (i.e., self-regulated as opposed to other-regulated), it is perhaps more likely that they understand responsibility only insofar as it pertains to self-care (i.e., "my job") (Warton & Goodnow, 1991). This represents a necessary precondition toward a full understanding of responsibility. As Piaget (1966) suggested, children possess an "almost mystical respect" for rules before developing an intrinsic understanding of their use. This development may be facilitated by mothers' use of metacognitive information. Although technically not statistically significant, mothers' metacognitive information was essentially implicated in children's responsibility as well. Presumably providing children with the metacognitive information behind problem-solving promotes their responsibility by increasing this intrinsic understanding of task purpose.

Concerning mothers' autonomy support, by encouraging their children's independent involvement, mothers' establish an expectation for assuming task responsibility at an early age. Given the opportunity to independently solve problems, these children have in turn experienced the consequences associated with their actions. Together, the opportunity to independently problem-solve and experience consequences may serve to develop the child's understanding that they are responsible for their actions. In line with this explanation, Neitzel and Stright (2003) suggest that children of mothers who are overly controlling may not realize that they are responsible for tasks due to a

history of problem-solving in which their mothers typically assumed responsibility for their tasks.

Maternal rejection and emotional support were also significantly correlated with children's responsibility. Children who experience rejection may avoid assuming responsibility for their actions due to fear. Attempting to avoid harsh criticism and ridicule, these children may avoid tasks altogether or place responsibility on others. In contrast, those children of mothers who are unconditionally warm are likely more open to assuming responsibility as they understand that their efforts will be accepted regardless of their performance. This is consistent with research investigating the link between children's attachment and social competence. For instance, in addition to showing that insecurely attached boys were more aggressive, had more behaviour problems, and were less well liked than their securely attached peers, Cohn (1990) found that insecurely attached boys were less socially competent as well.

Self-control. In many respects self-control represents the most representative social skill influenced by self-regulation. Perhaps not surprisingly then maternal scaffolding techniques were all significantly (positively) correlated with children's self-control, which confirms the hypothesis. Furthermore, the mean differences between aggressive and non-aggressive preschoolers were the largest for self-control. This would seem to point to the wide gap between these groups with respect to self-regulation given the quintessential feature of self-regulation is one's ability to adjust their thoughts, feelings and actions in such a way as to meet the demands of a particular situation.

Maternal emotional support and rejection were highly associated with children's self-control, which would seem to support research implicating warm and sensitive

parenting practices as well as secure attachments in children's prosocial behaviour (e.g.,

Rose-Krasnor, Rubin, Booth, & Coplan, 1996; Steelman et al., 2002). As a result of their

problem-solving history children of emotionally supportive mothers have developed an

expectation that their efforts will be met with supportive responses that convey that these

efforts were meaningful. Furthermore, when these children demonstrate behaviours their

mothers feel is inappropriate they are consistently redirected in a firm yet supportive

fashion. In turn, children of emotionally supportive mothers develop an understanding of

what is socially acceptable behaviour and what is not. In contrast, mothers of aggressive

children tend to be inconsistent with respect to disciplining their children's behaviour.

Therefore, it has been suggested that mothers of aggressive children not only punish more

inappropriate behaviour but they discipline prosocial behaviour as well (Menna & Landy,

2001). As a result, children of these mothers develop a poor understanding of the conduct

required for adaptive functioning.

Mothers' provision of cognitive strategies like metacognitive information,

regulation of task difficulty and review furnish their children with strategies for managing

troubling situations. As discussed in the preceding section, these techniques help to

establish regulatory functions like the capacity for sustained attention, the modulation of

emotion, and the delay of gratification which enable children to confront both task and

interpersonal problems in more effective ways. Possessed with a better understanding of

the nature of problems and how to manage them, children of cognitively supportive

mothers are less likely to be overwhelmed by problem situations. Moreover, these

children are more apt to recognize when tasks or situations are beyond their capacity to

solve and as a result, seek assistance in an appropriate fashion (Neitzel & Stright, 2003).

Together, the ability to confront problems in more effective ways and seek help when needed may serve to prevent children from losing control during situations that require problem-solving.

Mothers' autonomy supporting strategies impact their children's self-control through their role in their children's development of a positive sense of personal agency. Consequently, having been provided the opportunity to confront problems these children are more accustomed to the challenges that less confident and more dependent children perceive as unfeasible. Children of autonomy supportive mothers have learned how to regulate themselves in the face of challenges, which prevents them from becoming overly burdened and losing control. In contrast, in response to challenges children of poor autonomy supporting mothers may engage in behaviours which for all intents and purposes represent poor conduct, however they are likely meant to elicit others' assistance. They are rigid in the problem-solving strategies as a result of a limited number of opportunities to engage in such activities and thus more prone to disappointment when these strategies are unsuccessful. This is supported by research demonstrating that children of overly controlling mothers are less creative during homework-like tasks (Grolnick, Gurland, DeCourcey, & Jacob, 2002). In sum, autonomy supportive parenting provides children the requisite experience to meet problem situations in prosocial and adaptive ways.

Correlations between Maternal Scaffolding and Children's Social Confidence by Group

The decision was made to conduct additional correlation analyses between maternal scaffolding and children's social competence by group in order to identify how mothers facilitate their children's development of self-competence. The resulting patterns

of significant relationships were particularly telling given the inherent differences in self-regulation between aggressive and non-aggressive children. For mothers of non-aggressive preschoolers, regulation of task difficulty, review and control were nearly significantly related to all four children's social competence variables. Mothers' emotional support was also correlated with children's self-control for the non-aggressive group. In contrast, all seven of the maternal scaffolding practices utilized by mothers of aggressive preschoolers were significantly associated only with children's responsibility. There were no other significant relationships found between mothers' scaffolding and children's social competence for the aggressive group. The results seem to point to the differences between mothers of non-aggressive preschoolers and mothers of aggressive preschoolers with respect to how they foster their children's self-regulatory development and consequently their social competence.

What can be extrapolated from these findings is that mothers' of non-aggressive preschoolers are effectively facilitating their children's self-regulatory development while mothers of non-aggressive preschoolers are promoting their children's reliance on others for regulation. In utilizing strategies such as regulation of task difficulty and review, mothers of aggressive preschoolers are providing their children with strategies that are useful in regulating their thoughts, emotions and behaviours. However, more than simply modeling these practices, mothers of non-aggressive preschoolers are doing so in such a way as to be appropriate for their children's developmental level. In essence, these mothers are fostering these skills in Vygotsky's notion of the zone of proximal development and thus promoting children's internalization of these skills. This interpretation fits with a number of studies that suggest that maternal support and

appropriate control predict children's social competence. For instance, McGrath, Sullivan and Seifer (1998) found that mothers of the most competent preschoolers, were characterized by higher responsivity, involvement and appropriate control compared to mothers of less competent children. In addition, Crockenberg and Litman (1990) discovered that mothers who used less powerful methods of control had children who were more compliant and self-assertive. These researchers concluded that the combination of appropriate control and guidance were critical in children's compliance while limiting their defiance.

As might be expected, mothers of aggressive preschoolers are not as likely to provide their children with effective skills for self-regulation nor recognize their children's level of development. What is interesting is that these mothers are promoting their children's responsibility through their scaffolding techniques. However, despite its prosocial nature, responsible behaviour does not imply that one is self-regulated. Instead responsibility, insofar as it represents obedience, may be more a reflection of other-regulated behaviour rather than self-regulated behaviour. In this sense, children's responsibility is more akin to what Kochanska and colleagues (Kochanska & Askan, 1995) described as situational compliance, which is transient and inherently other-regulated. If in fact this is the impact that mothers of aggressive preschoolers have on their children's self-regulation and social behaviour, it may be said that these mothers are promoting reactive rather than proactive problem-solving. The strategies utilized by mothers of aggressive preschoolers are fundamentally detrimental to their children's internalization of self-regulatory skills, render them with only limited self-regulatory functioning, and are thus not conducive to their social skill development.

The implications of the patterns of relationships described above for children's social competence as it pertains to self-regulation become greater as these children mature. By definition, non-aggressive preschoolers have developed adaptive self-regulatory functions which act as a foundation from which they can begin to learn, practice, and gain some measure of mastery over social skills. With a base of self-regulation these children become receptive to the social practices deemed appropriate for interaction in our culture. In turn, appropriate social skills are developed through interactions with significant others who demonstrate the appropriate use of a variety of prosocial behaviours. In this way, scaffolding not only influences children's development of self-regulation but social skills as well. On the contrary, aggressive preschoolers have yet to develop the capacity for self-regulation and as such rely on other-regulation for social functioning. This becomes problematic as these children begin school and their social environment increasingly expands. Without a base of self-regulation these children are limited to only a superficial understanding of socially competent behaviour. Their inability to regulate their thoughts, emotions, or actions prevents poorly self-regulated children from engaging in the very interactions that help to establish social competence. As they mature, its likely children who fail to develop a modicum of self-regulation will be prone to a variety of social and psychological difficulties. Evidence for this assertion is found in the aforementioned research which suggests childhood aggression is related to more diverse forms of psychopathology (e.g., Cairns et al., 1989; Parker & Asher, 1987).

Implications for the Treatment of Childhood Aggression

The above discussion served to illustrate how scaffolding is implicated in children's self-regulation and social competence. Maternal scaffolding clearly

differentiated between mothers of aggressive and non-aggressive preschoolers and exhibited a number of significant relationships with the ultimate goal of treatment approaches, namely children's social competence. Given its association with children's early development it becomes necessary to examine scaffolding's potential role in the treatment of children's aggression. Specifically, it is worth exploring what benefits scaffolding can provide for existing approaches directed toward reducing aggression in childhood.

The majority of treatment approaches for children's aggression and more broadly, children's externalizing disorders, address children's social and problem-solving skill development through work with the child or the parents (e.g., Spivack & Shure, 1974; Spivack et al., 1976; Patterson et al., 1975). They are based on the premise that children who exhibit maladaptive behaviours possess a deficit in the requisite skills needed to function effectively in society (Coie & Dodge, 1998; Dodge & Price, 1994). Through teaching these children adaptive social and problem-solving skills it is believed that they will begin to utilize such skills during social interactions in lieu of their more aggressive and/or externalizing tendencies. In many respects, these treatment approaches are effective in both reducing children's aggression and in promoting their prosocial behaviour. However, a large percentage of children continue to exhibit aggressive tendencies throughout childhood (Tremblay et al., 2005), and develop more serious psychopathology or criminal behaviour in adolescence and adulthood (Kupersmidt, Coie, & Dodge, 1990). One limitation that can apply to the preponderance of existing treatment approaches for children's aggression is that they fail to acknowledge, or bypass, the establishment of children's self-regulation. In fact, with increasing regularity children

who exhibit maladaptive externalizing behaviours are prescribed medication the purpose of which is to regulate their cognitions, emotions, and/or behaviours. There is little doubt that the use of medication is necessary in severe cases of aggression or externalizing disorders, however the over-reliance on medication for children's self-regulation may be detrimental to children's development as a number of these medications carry with them potentially serious side effects (Breggin & Breggin, 1995; Health Canada, 2005; Ideus & Cooper, 1995; Whittington, Kendall, & Pilling, 2005). Moreover, the use of medications in establishing children's self-regulation may fail to address the critical role of the parent-child relationship in children's self-regulatory functioning and burgeoning social skills. Assuming the stability self-regulation provides, treatment approaches for children's aggression and externalizing disorders need to focus on developing self-regulation in children who exhibit these maladaptive behaviours either prior to or simultaneous to their social and problem-solving skill instruction. This involves working with both mothers and children to produce more appropriate interactions. In improving these interactions, treatment approaches can help to develop children's self-regulation in its more natural domain as well as reduce the potential for continued aggressive and externalizing behaviour as children mature.

Scaffolding, as it pertains to mothers' delineation of self-regulatory skills to their children, may represent an effective strategy for intervention within the mother-child dyad. Its influence for existing treatment approaches for children's aggression can be seen as threefold. First, scaffolding directs the focus of intervention toward the mother-child interaction instead of toward the child or mother in isolation. This enables an understanding of the context in which the child's self-regulatory capacities are

developing. As a result, mental health professionals can begin to identify the specific aspects of this relationship that are inhibiting the child's development of self-regulation. More specifically, as was evidenced in many of the videotaped interactions in the present study, mothers of aggressive preschoolers often provided their children with cognitive support, however in a manner that was insensitive to their level of development and/or was overly direct. Furthermore, many of these mothers provided little emotional support and were harsh and rejecting toward their children's problem-solving efforts. Simply focusing intervention efforts on the child or mother in isolation may not allow for the identification of these more subtle aspects of their interaction. Thus, a focus on the mother-child interaction permits mental health professionals the opportunity to conceptualize the nature of this interaction and how it impacts children's development. Second, having identified the aspects of the mother-child interaction that detract from children's self-regulatory development, mental health professionals can work with mothers and children alike to improve such aspects utilizing scaffolding techniques. Mental health professionals can instruct mothers on the use of particular techniques related to cognitive, emotional, or autonomy support which would be beneficial to their children's self-regulatory development. Similarly, these professionals can reinforce maternal scaffolding efforts by utilizing similar strategies with children during treatment. In this way, intervention is coordinated between the home environment and the treatment milieu, which may aid in children's development of self-regulation through the generalization of skills across settings. Finally, the present study demonstrates that scaffolding serves to differentiate mothers of aggressive and non-aggressive children as early as the preschool years. This suggests that scaffolding may be a form of intervention

that is tailored to preschoolers' cognitive, emotional, and behavioural level of functioning. Given the paucity of interventions designed for aggressive preschoolers, scaffolding may represent an effective means for working with preschool age children who exhibit externalizing behaviour problems. Taken together, scaffolding may be a promising construct for intervention with aggressive preschoolers.

Limitations of the Present Study

The present study found evidence to support the majority of the hypotheses set forth in the introduction. Nevertheless, there were a few aspects of the study that limit the magnitude of the findings. First, in spite of the fact that the groups were matched with respect to age and gender, the differential use of scaffolding techniques between the genders was not examined. It is possible that mothers relied more heavily upon particular strategies during interactions with boys as opposed to girls or vice versa. Such information may be useful in treatment settings. In addition, the overrepresentation of Caucasian families limits the generalization of results to other ethnicities. Given the fact that other cultures may place more emphasis on specific forms of regulation or gauge social competence on the basis of alternative skills, this lack of diversity represents a drawback to the present study. Therefore, there are a range of factors that may preclude generalization to populations that may benefit from intervention for childhood aggression.

Second, the use of a series of block design tasks represents a limitation insofar as it reduced the range of problem-solving behaviours exhibited by children and thus instructional techniques utilized by their mothers. This may have been no more evident than in the evaluation of maternal metacognitive information, which as indicated above

was the least utilized scaffolding strategy. Future studies may benefit from the use of a range of problem-solving tasks that include planning activities, social problem-solving activities, and tasks that limit mothers' reliance on aids in their provision of instruction. As discussed in regards to metacognitive information, Neitzel and Stright (2003) included an eclectic set of four problem-solving tasks that required both mothers and children to utilize a range of skills in order to complete them.

Thirdly, the seven maternal scaffolding behaviours exhibited high intercorrelations. While the strength of their associations did not violate the assumption of multicollinearity, the correlations between the variables did preclude a clear interpretation of each variables contribution to the explanation of variance. Thus, in the present study a model is implied but not explicitly tested. This problem may be corrected in a couple of ways. For instance, the use of a variety of tasks may result in a more assorted use of scaffolding techniques. In addition, subtle changes to the scaffolding coding system may be necessary for different types of instructional tasks. Such was the case in the present study with respect to the variable controlling. Despite this limitation, it is believed the results of the present study were sufficient to implicate maternal scaffolding in children's self-regulation vis-à-vis aggression and social competence.

Fourth, although mothers continue to represent the primary caregiver in the majority of homes in our society, the role of fathers and older siblings in children's problem-solving needs to be ascertained. Fathers may contribute in unique ways to their children's development of self-regulation via a different approach to problem-solving. Moreover, the examination of mothers' and fathers' with both their daughters and sons may point to particular styles of interaction that serve to promote or inhibit children's

problem-solving. Similarly, older siblings are likely significant contributors to their brothers' and sisters' acquisition of problem-solving skills due their more advanced and diverse skill base yet closer proximity in age. Interestingly, the vast majority of preschoolers in the present study had either no siblings or only one sibling. Future studies would benefit from the examination of the impact of older siblings on children's problem-solving development.

Future Directions

The present study represents a novel application of the construct of scaffolding as it pertains to preschoolers' aggression. As such, it suggests a variety of directions for future examinations with respect to the impact of caregiver scaffolding on children's development of self-regulation, social and problem-solving skills, and overall social competence. It is believed that this conceptualization of scaffolding serves to unite related but separate lines of research that point to optimal caregiver practices in the children's early socialization. For this reason, future research needs to expand on scaffolding's role in children's self-regulatory development by examining it more directly as well as delve into the psychological factors that may influence caregiver's provision of scaffolding.

As suggested in the preceding section, future research should investigate the utility of scaffolding in relation to children's age, gender and form of psychopathology. For instance, such research would be useful in determining the specific strategies that are useful for both younger and older children. Given the rapid changes in children's cognitive and social development, it is possible that children are more responsive to particular aspects of scaffolding during their preschool years that they no longer respond

to during their school age years. Similarly, individual strategies may be more beneficial for boys as opposed to girls or vice versa. Examining the utility of scaffolding techniques as they pertain to gender is interesting given the differences in the types of aggression considered to be more representative of boys and girls respectively (e.g., Crick & Grotpeter, 1995). Perhaps most importantly, scaffolding's relationship to children with internalizing difficulties needs to be analyzed. Like children with externalizing disorders, children with early forms of internalizing disorders may possess an inadequate balance between their instinctive needs to approach and avoid. Research clarifying the effect of scaffolding on children with internalizing disorders may implicate particular strategies critical for these children's self-regulation.

Clearly, mothers do not represent the sole influence on children's self-regulation and social competency. Future research needs to examine the role of both fathers and older siblings on children's self-regulatory development. Research has demonstrated that boys' and girls' social competence may be associated to their relationship with same-sex parents (Ohannessian, Lerner, Lerner, & von Eye, 1998). Thus, future research considering the differences in scaffolding between mothers and fathers with their sons and daughters respectively, may help top identify specific elements of those relationships that either contribute or hinder children's self-regulation. In addition, older siblings may have a large impact on their brothers' and sisters' self-regulation through their modeling or instruction of appropriate and/or inappropriate responses to problem situations. What is evident is that there is an over-concentration of research on mothers with respect to their children's development while there remains a lack of studies exploring the roles of both fathers and siblings. In sum, future research may go a long way in aiding mental

health professionals to establish a more well-rounded understanding of familial relations and particular family members' influence on children's self-regulation.

Future research needs to more clearly determine the role scaffolding may play in children's development of self-regulation. The present study suggests that this conceptualization of scaffolding is implicated in children's self-regulatory development however children's self-regulation is only implied on the basis of their aggression. Future studies involving scaffolding and children's self-regulation needs to utilize more objective measure of children's self-regulation such as physiological measures (e.g., Porges, 1996). The use of more specific measures of children's self-regulation may permit analyses involving the role of scaffolding as a mediator and/or moderator in children's self-competency. Additionally, such measures may help future studies to examine the interactions between scaffolding and children's temperamental qualities in the development of their self-regulation. Finally, future research should explore scaffolding's influence in longitudinal designs which seek to identify its long-term impact on children's and even adolescent's development.

One additional line of research that may hold particular importance for mental health professionals attempting to work with aggressive children and their families are studies exploring the role of both children's and mothers' attributions and perceptions of each other. A number of studies conducted by MacKinnon and colleagues have explored these attributions and found they have a substantial impact on children's aggression and social competence (e.g., MacKinnon-Lewis, Lamb, Arbuckle, & Baradaran, 1992; MacKinnon-Lewis, Volling, Lamb, & Dechman, 1994; MacKinnon-Lewis, Lamb, Hattie, & Baradaran, 2001). Their findings point to the bidirectional influence both mothers and

children have on the establishment of interactions characterized by hostility and

coerciveness. Furthermore, these researchers have shown that this style of interaction is

linked to children's aggressive behaviour. Thus, research needs to explore how these

attributions impact the quality of caregiver scaffolding and what impact they hold for

mental health professionals attempting to work with aggressive children.

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Appendix A

Definitions and Examples of Maternal Scaffolding Behaviours (Neitzel & Stright, 2003)

Scaffolding Behaviour	Definition	Example
Metacognitive information	The degree to which the parent provides information makes salient the thinking behind the problem-solving process.	"That was a very complicated description, so try to imagine in your mind what it might look like before you try to make it."
Regulation of task difficulty	The degree to which the parent gives instructions in small, manageable steps to simplify or reduce the complexity of the task.	"Let's separate all the same coloured blocks. First..."
Review	The extent to which the parent reviews the steps of the task and discusses progress in relation to the overall goal of the task.	"Okay, you finished the tower; now, let's make the bridge. Remember, we have to have a tower and a bridge when we are all done."
Emotional support	The extent to which the parent provides comfort and support verbally (e.g., words of encouragement, positive comments) or nonverbally (e.g., smiles, tone of voice).	"Good job! It's really hard but I know you can do it."

Scaffolding Behaviour	Definition	Example
Rejection	Redirection that is done in a negative way including criticism, disapproval or disgust, dismissal of the child's efforts, or nonverbal gestures of nonsupport.	"I knew you wouldn't be able to do it because you never listen."
Controlling	The extent to which the parent presents instruction consistent with the child's developmental level including the recognition of the child's region of sensitivity and observation of contingency rules.	Instruction in the region between the child's highest level of demonstrated success and their first instance of failure. Also, when the child is successful the parent refrains from providing instruction; when the child struggles, instruction is increased.
Encouragement of Active Involvement	The degree to which the parent encourages the child's active involvement in the task through the use of prompts, questions, and hints rather than simply stating the answer, directing the child's actions, or doing the task.	"Now we have finished the tower. What should we do next?"

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