Developing Autonomy and Social Competence from Preschool to Middle Childhood in a High-Risk Sample of Children: Links to Mutuality and Maternal Childhood Histories of Risk

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ABSTRACT

Developing Autonomy and Social Competence from Preschool to Middle Childhood in a High-Risk Sample of Children: Links to Mutuality and Maternal Childhood Histories of Risk

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Learning to be autonomous while maintaining close relationships with others is a fundamental task toward developing social competence. This challenge is particularly noteworthy during middle childhood, when parents begin to gradually relinquish control over their children, and children's social networks expand to include the school environment. Preceding factors (e.g., mothers' childhood histories, mother-child interactions at preschool) shed light on the processes underlying developing autonomy and social competence in mother-child interactions at middle-childhood. Investigating these processes is particularly relevant in high-risk families, where the likelihood of psychosocial problems is increased.

The present prospective, intergenerational study was designed to examine developing autonomy and social competence in a high-risk sample of mother-child dyads at middle childhood, as well as links to mother-child mutuality, mothers' childhood histories of risk, and mother-child interactions and behaviour problems during preschool. Women from the *Concordia Longitudinal Risk Project*, whose levels of aggression and social withdrawal were assessed during childhood, participated with their children in a series of naturalistic interactions at two time points; observational coding measures were employed in order to investigate autonomy and mutuality in middle childhood (children aged 10-13), and maternal requests and child noncompliance in preschool (children aged 2-6). Questionnaires were administered to mothers, children, and teachers to assess

children's social competence and problems.

In line with the study's hypotheses, results indicated that mutuality behaviours predicted autonomy behaviours. Mothers' behaviours predicted children's behaviours, for both autonomy and mutuality, suggesting an atmosphere of reciprocity within the dyad. Children's behaviours at middle childhood predicted concurrent measures of social competence and problems, underscoring the relationship between autonomy, mutuality, and social competence. Children's behaviour problems were stable across the two time points, and mothers' request strategies at preschool predicted mothers' autonomy support at middle childhood. Furthermore, effects of maternal risk (education, childhood aggression and withdrawal) and child sex were also revealed.

This study was the first to longitudinally investigate autonomy from preschool to middle childhood. Results highlight how autonomy behaviours in mother-child interactions relate to developing social competence at middle childhood in families at risk. Findings underscore the significance of middle childhood in determining children's developmental trajectories, and have important implications for developing policies and programs that promote positive outcomes in vulnerable families.

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Chapter 1: General Introduction

Often referred to as the "school years", middle childhood[1] is a developmental period characterized by significant, idiosyncratic changes in physical, cognitive, and social growth (Collins, 1984b; Feldman, 2005). However, middle childhood is caught between preschool and adolescence, two stages that command the lion's share of attention from developmental researchers. The relative lack of research interest in middle childhood may stem from the fact that the unique characteristics of this period appear to be less clearly defined than those of infancy, preschool, or adolescence (Collins, 1984a; Maccoby, 1984). Historically, the significance of middle childhood was often inaccurately underrated. For example, this stage was often referred to as a period of *latency*, a word commonly misconstrued to suggest inactivity (Collins, 1984a; Cooper, Coll, Bartko, Davis, & Chatman, 2005). Despite this misconception, the middle childhood years "mark a distinctive period between major developmental transition points" (p. 1, Collins, 1984a). Furthermore, the significance of this phase is owed in large part to the role it plays in setting a child's future life course (Collins & van Dulmen, 2006). Whereas the early childhood years lay the groundwork for all areas of development, events that take place during middle childhood have the ability to solidify, or shake, these early foundations. As children enter institutions outside the family context, behaviour and circumstances (over which the child may or may not have control)

[1] *Middle childhood* typically refers to 6-12 years of age (Collins, 1984a; Feldman, 2005). According to Sullivan's model of social-personality development, *preadolescence* (also referred to as *late middle childhood*; Collins & Madsen, 2003) refers to ages 9-12 (Buhrmester & Furman, 1986; www.merriam-webster.com, n.d.). Because both terms match the ages of the children who participated in this study, the two terms will henceforth be used interchangeably.

exert increasing influence on the life trajectory that the child will follow in adolescence and beyond (Huston & Ripke, 2006a). Moreover, research has shown that behaviour and functioning in adolescence and adulthood are more reliably predicted from middle childhood than from preschool and infancy (Collins, 2005). The contrasting roles of preschool and middle childhood pose a paradox; mounting evidence indicates the importance of early prevention and intervention (e.g., Banaschewski, 2010; Krakow, 2010; Tremblay, 2010), yet the unique nature of middle childhood makes it a critical time for promoting resilience and reducing risk (Huston & Ripke, 2006a). An understanding of the features and processes that characterize development in middle childhood is, therefore, imperative in order to truly appreciate the distinctive contributions of this period relative to other stages of life.

Although the majority of today's preschoolers attend some form of daycare, the mandatory start of formal schooling marks the onset of middle childhood and defines the social context that guides and structures development throughout this period (Collins, 1984a). Participation in new settings (e.g., school, extracurricular activities, peer groups) is accompanied by demands for greater independence, as well as other novel tasks and challenges. A myriad of developmental changes occurring during this phase (e.g., improved perspective-taking and moral reasoning skills, self-concept consolidation, and social relationship formation) enable children to acquire the competencies that facilitate their ability to navigate these new environments (Collins, 2005; Huesmann, Dubow, Eron, & Boxer, 2006). Notably, social interaction (particularly of a dyadic nature) has been shown to play a pivotal role in cognitive development during middle childhood (Fischer & Bullock, 1984). While dyadic interaction in preschool primarily involves a

parent[2] (Collins & Madsen, 2003; Lindsey, Cremeens, & Caldera, 2010), middle childhood offers a host of new social partners. The school context offers numerous opportunities to build and practice social competencies. As children spend increasing amounts of time away from their parents and their homes, preadolescents must learn to transfer the social skills gleaned from parent-child interactions. More specifically, children need to learn how to generalize the skills acquired through interactions that were primarily vertical in nature (i.e., assymetrical interactions based on a power hierarchy, as in a parent-child relationship) in order to demonstrate social competence in horizontal interactions (i.e., symmetrical interactions related to partner equality, typical of most peer relationships; Russell, Pettit, & Mize, 1998). In addition, children must also learn to reconcile their needs and goals with those of the people with whom they interact (Markus & Nurius, 1984). Therefore, building social competence and emerging autonomy become paramount in middle childhood; however, the paucity of research on this topic is striking.

The present dissertation was designed to investigate autonomy behaviours in mother-child interactions and their relationship to children's social competence at middle childhood. More specifically, the relationships between autonomy and mutuality in mother-child interactions were examined, as well as how these behaviours were associated with children's social competence. In addition, the predictive contributions of mothers' childhood histories of risk, as well as emerging autonomy in mother-child interactions and children's behaviour problems at preschool, were explored. Taken together, the current study marks a valuable contribution to our knowledge of social

[2] Although the literature frequently refers to "parenting" and "parent behaviours", this dissertation focuses more specifically on the role of the mother. Research has shown that mothers are children's primary interaction partners, and primary agents of socialization, until they enter formal schooling.

development from preschool to middle childhood.

Social Competence

According to Erikson's stage of *Industry vs. Inferiority*, the principal task of middle childhood is to master the basic competencies necessary for adulthood (Feldman, 2005). Chief among those skills is social competence, defined generally as effectiveness in interaction (Rose-Krasnor, 1997) and serving the lifelong goal of satisfying mutually-beneficial needs in reciprocal relationships (Hastings et al., 2006). Social competence is a multi-faceted construct that is transactional, context-dependent, and developmentally determined (Rose-Krasnor, 1997; Dirks, Treat, & Weersing, 2007). Whereas early childhood is marked by the fundamentals of social skills learning, middle childhood affords countless opportunities to practice and improve these skills. Early parent-child interactions form the basis for later social competencies, and learning to generalize these competencies to other contexts is an important goal of middle childhood (Huston & Ripke, 2006b; Masten & Coatsworth, 1998; Weinfield, Ogawa, & Egeland, 2002). Social skills are enhanced in middle childhood, resulting from a newfound awareness of the self as a social being (Markus & Nurius, 1984). Children learn to define their identity in abstract terms that integrate self- and other-perceptions, made possible by the social-cognitive abilities (i.e., Piaget's *formal operations*, including perspective-taking and hypothetical reasoning) that emerge in preadolescence (Fischer & Bullock, 1984). Tasks pertaining to developing social competence in middle childhood are more complex and diverse relative to preschool, yet not quite as intricate as the social challenges that surface in adolescence. More specifically, social competence in middle childhood is marked in part by the ability to initiate and engage others in social interactions, independently adjust

behaviour to accommodate contextual and interpersonal demands, as well as resolve conflict using prosocial means (Hastings et al., 2006). Two important skill-sets that are central to social competence include the ability to think and act autonomously, and the ability to engage in reciprocal, cooperative interactions.

Autonomy

Autonomy is a broad, multi-dimensional construct that has been conceptualized, defined, and studied by researchers using a variety of approaches and frameworks (e.g., cognitive, emotional, behavioural, and developmental; Feldman & Wood, 1994; Grolnick, Gurland, DeCourcey, & Jacob, 2002; Noom, Dekovic, & Meeus, 2001; Zimmer-Gembeck & Collins, 2003). In general terms, autonomy refers to cognitive, behavioural, and emotional processes involving choice, personal control, and independent decision-making (Rothbaum & Trommsdorff, 2007; Zimmer-Gembeck & Collins, 2003). Autonomy development is first exhibited during the second year of life, when toddlers begin to perceive themselves as separate from their caregivers (Crockenberg & Litman, 1990; Kuczynski, Kochanska, Radke-Yarrow, Girnius-Brown, 1987). In early childhood, noncompliance often signifies emerging autonomy, as children attempt to assert their needs and desires in the context of the parent-child relationship (Dix, Stewart, Gershoff, & Day, 2007; Kuczynski et al., 1987). Across autonomy development, children acquire new skills, and as a result, continually face new tasks and challenges related to their independence (Zimmer-Gembeck & Collins, 2003). For example, preschoolers learn to say no to parental requests, school age children negotiate decisions pertaining to their chores and extracurricular activities, and adolescents choose whether or not to engage in "popular" risky behaviours. Although these autonomy behaviours are frequently regarded

as developmental outcomes; autonomy can also be viewed as a familial process influencing child development (Barber, 1997; Feldman & Wood, 1994; Zimmer-Gembeck & Collins, 2003). Family interactions that center around, or reflect, developing autonomy (e.g., discussing allowance, curfew) have been associated with different aspects of children's adjustment and functioning (Allen, Hauser, Bell, & O'Connor, 1994; Allen, Hauser, Eickholt, Bell, & O'Connor, 1994; Marsh, McFarland, Allen, McElhaney, & Land, 2003; Ng, Kenney-Benson, & Pomerantz, 2004).

Autonomy regains importance in middle childhood, when the majority of preadolescents' leisure time is spent with peers, engaging in social activities with reduced parental supervision (Collins, 1984a; Crockenberg & Litman, 1990; Dix et al., 2007). Children's autonomous strivings are impacted by developing abilities in middle childhood; namely, preadolescents' evolving understanding of the limits of parental authority, improved capacity for increasingly more mature and complex negotiation, and their desire to distinguish their identity from their parents (Cooper, Coll, Bartko, Davis, & Chatman, 2005; Mattanah, 2001; Vuchinich, Angelelli, & Gatherum, 1996). Preadolescents display improved perspective-taking and moral reasoning skills relative to preschoolers, yet they lack the abstract reasoning and problem-solving skills exhibited by adolescents that engender safe and mature autonomous functioning (Kaplan, 1991). Although the transition from parental management to full-fledged autonomy occurs during adolescence, parents begin to anticipate this milestone by allowing preadolescents to contribute to family decision-making processes (Berk, 1997; Collins, 1984b; Feldman & Wood, 1994; Maccoby, 1984; Wray-Lake, Crouter, & McHale, 2010). Participation in decision-making is a key feature of co-regulation, a collaborative process whereby

parents supervise their children's everyday momentary decisions (instead of making decisions for children), in preparation for the subsequent shift to autonomous functioning in adolescence and adulthood (Berk, 1997; Collins, 1984b; Maccoby, 1984). Therefore, autonomy development in middle childhood is an important bridge between the close parental supervision of the early years and the independence that is afforded to adolescents. Independence implies freedom from the control of others, without necessarily isolating oneself from others. Therefore, the ability to assert one's autonomy while simultaneously maintaining close social ties is a developmental challenge that is central to social competence and pervasive across the lifespan (Allen, Hauser, Bell, & O'Connor, 1994; Kuperminc, Allen, Arthur, 1996; Rose-Krasnor, 1997).

Mutuality

Maintaining close relationships requires the ability to engage in warm, synchronous interactions. Mutuality is a quality of dyadic interaction that is characterized by reciprocal, cooperative, mutually warm interactions, and is also referred to in the literature as synchrony, reciprocity, relatedness, and mutually responsive orientation (e.g., Barber, Bolitho, & Bertrand, 2001; Criss, Shaw, & Ingoldsby, 2003; Deater-Deckard, Atzaba-Poria, & Pike, 2004; Deater-Deckard & Petrill, 2004; Harrist & Waugh, 2002; Kochanska, Aksan, Prisco, & Adams, 2008; Lindsey, Cremeens, & Caldera, 2010). While these terms are often used synonymously in the literature, one consistent definition for the overall construct has yet to be operationalized; in the present dissertation, the term mutuality will be used to describe interactions where the partners demonstrate cooperation and warmth. Although mutuality can be investigated in any dyadic interaction, it is of particular relevance to the parent-child relationship due to the role it

plays in the process of parent-child socialization (Kochanska, 1997; Maccoby, 2007). Synchronicity and responsiveness in interactions implies that parents are attuned to their children's needs, while children are similarly learning to anticipate and internalize their parents' goals and values. Parent-child mutuality is thus fundamental to the socialization process because children who perceive that their needs and wishes are respected and supported by their parents are more likely to comply with and internalize parental requests and values (Criss et al., 2003; Deater-Deckard et al., 2004; Harrist & Waugh, 2002; Kochanska, 1997; Kochanska & Murray, 2000; Laible & Thompson, 2007). Mutuality may play a unique role in middle-childhood, when parental socialization moves from externally regulating children to a system of co-regulation (Berk, 1997; Maccoby, 1984). Mutually responsive interaction styles facilitate the development of self-regulatory skills, including autonomy, and set the stage for children to become socially competent members of society (Harrist & Waugh, 2002; Deater-Deckard et al., 2004). Mutuality has been heavily researched in parent-child dyads from infancy to preschool (e.g., Feldman, 2003; Harrist & Waugh, 2002; Kochanska, Aksan, Prisco, & Adams, 2008; Lindsey, Mize, & Pettit, 1997); however, a handful of studies have recently emerged acknowledging the significance of mutuality in middle childhood (Criss, Shaw, & Ingoldsby, 2003; Deater-Deckard et al., 2004; Deater-Deckard & Petrill, 2004) and adolescence (Barber, Bolitho, & Bertrand, 2001; Denissen, van Aken, & Dubas, 2009; Harach & Pettit, 2005; Lindsey, Colwell, Frabutt, Chambers, & MacKinnon-Lewis, 2008). Findings have shown that parent-child mutuality measured subsequent to the preschool period correlates with both parents' and children's personality traits, as well as with socioeconomic status (SES).

Autonomy and Mutuality: Implications for Socialization and Development

Socialization involves a constellation of bidirectional and transactional processes by which children are taught the skills, values, and behaviours necessary for social competence (Maccoby, 2007; Hastings et al., 2006). Historically, socialization was conceptualized around parenting strategies involving control and discipline, and their influence on children's behaviours (Grusec & Davidov, 2007). For example, parental monitoring, praise, affection, and warmth were associated with children's social competence and prosocial behaviour, while parenting strategies characterized by punishment, as well as harsh, hostile, or coercive behaviours were associated with children's negative outcomes including aggression and decreased prosocial behaviour (Domitrovich & Bierman, 2001; Stack, Serbin, Enns, Ruttle, & Barrieau, 2010). These two broad categories of parenting behaviour have clear implications for children's developing autonomy as well as the limits of mutual responsiveness within the parent-child dyad.

More recent views of socialization focus on the parent-child bond as the primary mechanism for transmitting social information to children (Laible & Thompson, 2007). The relationship perspective on socialization maintains that certain key features of a close parent-child relationship facilitate children's identification with their parents (and vice versa); these features include reciprocity (i.e., matching or complementary behaviours), mutual contributions (i.e., both partners contributing equally to the relationship), and affective history (i.e., cumulative shared emotional experiences). This identification increases children's motivation to cooperate with their parents' requests, and adopt their beliefs and values (Grusec & Davidov, 2007*;* Laible & Thompson, 2007). Early

emerging autonomy behaviours best exemplify how mutuality facilitates socialization. More specifically, studies on willing compliance in preschoolers (e.g., Kochanska, 1997; Kochanska & Aksan, 1995; Parpal & Maccoby, 1985) demonstrate how a mutually-responsive parent-child relationship can increase the likelihood that children's autonomous behaviours will match parental expectations and directives. This system of reciprocity sets the foundation for middle-childhood, when parents slowly transition from externally regulating children's behaviour, to a system of co-regulation (Collins & Madsen, 2003; Maccoby, 1984). Through participation in mutually beneficial interactions, parents engender a longstanding cooperative relationship with their children (Grusec & Davidov, 2007). Parents who subsequently continue to act in synchrony with their children's evolving needs and abilities are more likely to have adolescents who recognize parental authority and demonstrate competent, safe, and mature autonomous behaviour (Maccoby, 2007). Taken together, autonomy, mutuality, and social competence can be conceptualized as an equilateral triangle that points upward, where the bottom two vertices represent autonomy and mutuality, and the apex represents social competence. Autonomy and mutuality are two important aspects of social competence, and serve as both indices and facilitators of social competence. Moreover, mutuality may also serve to facilitate autonomy, particularly in middle childhood when mutual responsiveness can act as a catalyst for the socialization, development, and internalization of regulatory abilities.

Middle childhood is an ideal time to study the links between autonomy, mutuality, and social competence in the context of the parent-child relationship. Children's cognitive skills at this age put them in a unique position in the parent-child hierarchy,

relative to their younger or older peers. Unlike preschoolers, preadolescents discover that parental authority no longer rests solely on reward or punishment, and that a dynamic of exchange is now feasible (Maccoby, 1984). However, unlike adolescents, they are not yet ready to contemplate emancipating themselves completely from parental authority. Secondly, findings indicate that the shift of regulatory responsibilities from parent to child typically occurring during this transitional period may be accelerated in mutually responsive dyads (Criss et al., 2003). Third, as school-age children spend increasingly more time with peers, and less time with parents, high-levels of parent-child mutuality are key to ensuring that children will make safe autonomous decisions when not under direct parental supervision (Criss et al., 2003). Fourth, preadolescence marks an optimal time to study the links between autonomy and mutuality because children at this age are focused on competency-building and goal attainment (particularly in the social realm), and are motivated to practice both independent (i.e., autonomy) and cooperative (i.e., mutually responsive) skills (Huston & Ripke, 2006a; Weinfield et al., 2002). The middle childhood years signify a unique developmental stage whereby children embark on a variety of positive and negative life trajectories (Collins, 2005; Cooper, Coll, Bartko, Davis, & Chatman, 2005; Huston & Ripke, 2006a). Given that autonomy and mutuality are both strongly tied to social competence (e.g., Allen, Hauser, Bell, & O'Connor, 1994; Deater-Deckard & Petrill, 2004; Dix, Stewart, Gershoff, & Day, 2007; Lindsey, Cremeens, & Caldera, 2010), this developmental period is pivotal in elucidating the factors that influence whether children will follow paths towards social competence or paths that include social deficits or psychosocial problems. While it is has been established that middle childhood is a time when children's life trajectories begin to

crystallize, a greater understanding of how autonomy and mutuality enhance developing social competence in middle childhood would mark a significant contribution to the field by offering insight into how children can be steered toward trajectories of successful development.

Trajectories of developing autonomy beginning in early childhood can shed light on social development in preadolescence. Longitudinal measurement of any construct must assume a developmentally-sensitive perspective, in order to account for the notion that, over time, the same underlying construct manifests differently as a function of development (Jimenez, Dekovic, & Hidalgo, 2009; Weinfield et al., 2002). Children's behaviours evolve rapidly with the acquisition of new skills and abilities; if parents are attuned to these changes in their children, then their own behaviours will shift accordingly (Kerig, 2001). Consequently, researchers have proposed an *organizational perspective on development*, suggesting that the best way to study stability or change in a given construct over time is to examine behaviours that differ slightly yet are conceptually related (Sroufe, 1979; Weinfield et al., 2002). More specifically, measurement of a given construct must capture specific, age-salient tasks (Masten & Coatsworth, 1998; Shaffer, Burt, Obradovic, Herbers, & Masten, 2009). A socially appropriate request-compliance exchange with a toddler might entail a parental request, followed by a tantrum or passive noncompliance, and the parent subsequently employing a physical intervention (e.g., picking up the child). With a preadolescent, an equally appropriate request-compliance exchange might involve the child negotiating or requesting that the initial demand be modified, followed by the parent providing a logical explanation for their request. In both cases, different yet conceptually related behaviours

are indicative of the same underlying construct; namely, developing autonomy. Development similarly affects the measurement of social competence; while the underlying conceptualization (i.e., effectiveness in interaction) remains generally constant across the lifespan, the relative importance of specific behaviours and indices may shift over time (Rose-Krasnor, 1997; Shaffer et al., 2009). Autonomy and social competence are closely tied in early childhood; while occasional noncompliance typically signifies emerging autonomy (Crockenberg & Litman, 1990; Dix et al., 2007; Kuczynski et al., 1987), excessive noncompliance is often indicative of a behaviour problem (Campbell, 1997; Cole, Zahn-Waxler, Fox, Usher, & Welsh, 1996; Degnan, Calkins, Keane, & Hill-Soderlund, 2008; Emond, Ormel, Veenstra, & Oldehinkel, 2007;Wakschlag, Tolan, & Leventhal, 2010). Behaviour problems provide a useful index of social competence throughout childhood, so long as the specific behaviours that are assessed reflect children's developing abilities and evolving circumstances (Emond, Ormel, Veenstra, Oldehinkel, 2007; Howe, 2004; Kerig, 2001; Wakschlag, Tolan, & Leventhal, 2010).

Aggression and Social Withdrawal: Maladaptive Behavioural Styles

Problematic behaviour that is generally stable across time can be conceptualized as a maladaptive behavioural style. Aggression and social withdrawal are two behavioural styles that, when demonstrated in childhood, have evidenced stability across development, and into parenthood (or motherhood, for the purposes of this study; Coie & Dodge, 1998; Rubin, Burgess, & Coplan, 2002; Serbin et al., 2004; Warman & Cohen, 2000). As a behavioural style, aggression refers to a propensity to act aversively across time and settings (e.g., Cairns, Cairns, Xie, Leung, & Hearne, 1998; Patterson, 1982;

Patterson, DeBaryshe, & Ramsey, 1989; Serbin et al., 1998), including a broad range of overt and covert behaviours aimed at inflicting harm to a person's body, emotional wellbeing, or social relations (Card, Stucky, Sawalani, & Little, 2008; Putallaz & Bierman, 2004). Overall, aggression in childhood has been associated with maladjustment later in life, including delinquency, crime, and substance abuse (Card et al., 2008; Werner & Crick, 2004). Girls are uniquely affected by childhood aggression; subsequent outcomes include school failure, early parenthood, and partner violence (Capaldi, Kim, & Shortt, 2004; Putallaz & Bierman, 2004; Serbin & Karp, 2004; Serbin et al., 2004). When highly aggressive girls grow up and raise children of their own, they are likely to continue to behave aggressively with their own children, thus perpetuating coercive cycles of interaction (Patterson, 1982, 2002). In so doing, their children are trained to respond in a similarly aversive manner in contexts outside the family environment. Particularly for girls, aggressive behaviour may be a central ingredient in a complex, intergenerational social pattern, placing themselves and their children at risk for maladaptive psychosocial outcomes (Odgers et al., 2008; Patterson, 1982, 2002; Serbin et al., 2004; Serbin et al., 1998).

Social withdrawal is another important behavioural style that puts women, and their children, at risk for poor psychosocial outcomes. Social withdrawal is a heterogeneous construct (e.g., Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Harrist, Zaia, Bates, Dodge, & Pettit, 1997; Spinrad et al., 2004) that is associated with insecurity, negative self-perceptions, loneliness, and dependency, and is predictive of internalizing difficulties (Rubin, 1993; Rubin, Chen, McDougall, Bowker, & McKinnon, 1995). The processes by which social withdrawal negatively impacts subsequent family interactions

and child outcomes are rather different, and possibly less direct than those implicated in aggressive interactions. During childhood, withdrawn girls often remove themselves from social interactions, thus hindering their developing social competence and leading to dissatisfaction (Ladd & Burgess, 1999). Given that the stability of social withdrawal has been established, at least through to late adolescence (Moskowitz, Schwartzman, & Ledingham, 1985; Rubin, 1993; Rubin, Burgess, & Coplan, 2002; Rubin & Coplan, 2004), this combination of poor social skills and discontent is likely to impinge on the quality of the mother-child relationship. Furthermore, withdrawn mothers may contribute to their children's behavioural development either by modeling their maladaptive behavioural styles or by using inappropriate or ineffective socialization strategies (Grunzeweig et al., 2009; Serbin et al., 1998; Stack et al., 2006; Stack, Serbin, Grunzeweig et al., 2005). These women, as a result of their socially-limited experiences, may not have learned appropriate techniques or strategies for getting their needs met. Furthermore, research has shown that mothers of withdrawn children are more likely to adhere to overcontrolling, coercive, and power-assertive styles of parenting (Rubin, Burgess, & Hastings, 2002; Rubin, Stewart, & Coplan, 1995). This experience of parental overcontrol has been shown to exacerbate any existing social deficits in children (Rubin, Burgess, & Coplan, 2002).

Finally, results from studies have shown that the interaction of aggression and social withdrawal uniquely contributes to children's psychosocial outcomes and subsequent parenting. Children exhibiting co-occurring aggression and social withdrawal are more likely to develop learning difficulties, as well as other externalizing and internalizing problems (Farmer, Bierman, et al., 2002; Ladd & Burgess, 1999). In

particular, girls identified as both highly aggressive and highly withdrawn have been found to be at elevated risk for teen parenthood, obstetric and delivery complications, and chronic disease, among other things (Serbin et al., 2004; Serbin et al., 1998; Serbin, Peters, McAffer, & Schwartzman, 1991). Taken together, individuals who demonstrate aggression and/or social withdrawal tend to find themselves in environments and experiences that further aggravate their circumstances and impede their development, as well as those of their children. Furthermore, these behavioural styles may affect their own developing autonomy and social competence, as well as the ways in which they socialize these skills in their offspring. Autonomy and social competence are two important skill-sets that could help steer children towards positive life trajectories, and enable them to change their risky behaviour.

Intergenerational Transfer of Risk

The mechanisms by which mothers' maladaptive behavioural styles and aversive childhood experiences put subsequent generations at risk for negative life trajectories have become an important focus of developmental research (Chapman & Scott, 2001). Intergenerational risk studies investigate how the behaviours, characteristics, and experiences of parents predict their subsequent outcomes and wellbeing, as well as those of their children (Chapman & Scott, 2001; Serbin & Stack, 1998). In terms of their methodologies, these studies typically employ prospective designs (i.e., data on the parent generation was collected when parents were children) in order to investigate continuities and discontinuities across (at least two) generations, as well as variables or mechanisms that explain these continuities or lack thereof (Bailey, Hill, Oesterle, & Hawkins, 2009; Shaw, 2003). Current theories generally agree that genetic and

environmental factors interact to produce intergenerational continuities (Serbin & Karp, 2003); consistent with the basic tenets of developmental psychopathology. That is, causal processes (1) must be understood in terms of complex, reciprocal pathways that include both direct and indirect effects, whereby a single risk factor may lead to a variety of outcomes, (2) acknowledge continuities and discontinuities in development, including age-based sensitivities to certain outcomes, and (3) can be, but are not necessarily, influenced by risk and protective mechanisms (Jimenez et al., 2009; Rutter & Sroufe, 2000; Serbin & Karp, 2004).

Over the last two decades, intergenerational research has focused on identifying the causal processes that influence the outcomes of children born at risk; in fact, developmental journals have devoted three special sections to this matter (see Belsky, Conger, & Capaldi, 2009; Capaldi, Conger, Hops, & Thornberry, 2003; Serbin & Stack, 1998). One of the first innovations that transformed the study of the intergenerational transfer of risk was the use of prospective, longitudinal designs (Serbin & Stack, 1998), rather than retrospective designs that were fraught with measurement error. These projects employed two-generation samples in order to investigate continuity of behaviour within and across generations, and examine parental experiences, environments, and characteristics that affect the outcome of offspring. However, these studies were, for the most part, limited by designs and analyses that were predominantly correlational in nature. Since then, many long-term intergenerational projects have grown to include three-generation samples; coupled with advances in statistical modelling, these projects are now in a better position to test theoretical models of causal processes and mechanisms of transfer. Furthermore, the field has taken a unified approach to this area of research,

allowing for the replication of designs, measures, and findings across samples (Capaldi, Conger et al., 2003).

Two important issues, among others, have predominated the literature on the intergenerational transfer of risk. One important concern is the issue of continuity versus discontinuity, and understanding the factors that moderate intergenerational continuities (Conger, Belsky, Capaldi, 2009; Dubow, Huesmann, & Boxer, 2003; Rutter, 1998; Thornberry, Hops, Conger, & Capaldi, 2003). Until recently, most studies examined continuities in negative behaviours (e.g., aggression) rather than positive behaviours (e.g., prosocial behaviours; Conger et al., 2009). A second and related issue concerns whether continuities across generations can be explained by direct associations or by indirect or mediating variables (Belsky et al., 2009; Capaldi, Conger et al., 2003; Conger, Neppl, Kim, & Scaramella, 2003). The investigation of mediating variables, often conceptualized as mechanisms, is key to understanding intergenerational cycles of risk, as well as determining the target of interventions.

Several mechanisms (that are not necessarily mutually exclusive) have been postulated in order to explain how individuals (or girls, in the case of the present study) who demonstrate patterns of maladaptive behaviour in childhood subsequently pass on their difficulties to their offspring. One explanation suggests that problematic relationships serve as a mechanism for the intergenerational transfer of risk in individuals who demonstrate maladaptive behavioural styles in childhood (e.g., aggression, social withdrawal). These patterns of behaviour evidence stability across the lifespan, thus continually hindering relationships with peers, co-workers, authority figures, spouses, and eventually, offspring (Serbin, Stack, et al., 2004; Temcheff et al., 2008). These

impaired relationships compromise family functioning, including parenting, as well as a wide variety of developmental, physical and mental health outcomes in the next generation (Serbin & Karp, 2004).

A second perspective on the study of risk transfer employs social learning theory to explain the ways that parental behaviours and problems are echoed in the lives of their offspring. Social learning theory suggests that children learn to repeat the behaviours exhibited by family members through observational learning, modelling, patterns of reinforcement, and direct training via repeated interactions over time (Chapman & Scott, 2001; Conger et al., 2003; Shaffer, Burt, Obradovic, Herbers, & Masten, 2009). This concept is exemplified in Patterson's model of coercive family processes (Dishion, Patterson, & Griesler, 1994; Patterson, 2002), whereby parents and children react to each other's hostile behaviour with either increased aggression or complete acquiescence, leading to an eventual reinforcement of the partner's use of aversive behaviours.

Third, recent research has investigated the role of parenting practices and behaviours in explaining the continuity of maladaptive behaviour across generations (Capaldi, Conger et al., 2003; Dubow et al., 2003; Thornberry et al., 2003). This hypothesis derives from the social development model, an offshoot of social learning theory, which postulates that various socialization processes contribute to the development of maladaptive (e.g., externalizing) behaviour (Bailey et al., 2009). Studies have shown that the relationship between maladaptive behaviour in two generations is mediated by parenting (Capaldi, Conger et al., 2003; Conger et al. 2003).

A fourth mechanism of transfer involves the ability to demonstrate competence in age-salient tasks that are essential to successful development (i.e., *developmental tasks*).

Achieving developmental tasks in early childhood facilitates competence in subsequent developmental tasks that continue to emerge as children develop (Masten & Cicchetti, 2010). Similarly, failure to achieve certain fundamental tasks can thwart success in other areas of development, with implications across domains and over time. This overflow of problematic development has been described as "developmental cascades". In the face of adversity, competence in developmental tasks is key to resilience, whereas failure to achieve competence in these tasks may play a pivotal role in the long-term risks associated with maladaptive behavioural styles in childhood (Masten & Cicchetti, 2010; Masten & Coatsworth, 1998; Masten et al., 2005). For example, childhood aggression can impinge on academic achievement, thus limiting occupational opportunities, and increasing the likelihood of economic stress. Children in families exhibiting these cascades of cumulative risk are susceptible to immediate maladaptive outcomes, as well as long-term physical and mental health problems (Repetti, Taylor, & Seeman, 2002).

A fifth view of intergenerational risk transfer emphasizes the interaction between development and the socioeconomic context in which it is couched (Caspi, 2004; Conger & Donnellan, 2007; Conger & Dogan, 2007; Masten & Coatsworth, 1998). SES is reflected by income, education, and occupation, each of which have been shown to affect parenting and child development. Recent revisions to this theory posit that SES and individual development reciprocally influence one another, as well as the development of the subsequent generation (Conger & Donnellan, 2007). That is, individuals' traits and abilities determine the quality of their social and economic circumstances, which also influence individual development and parenting, thus affecting the continuity and subsequent intergenerational transfer of risk. This theory can be used to explain the

socialization of autonomy; according to the model, working class parents espouse conformity and obedience in their children as a result of the time and financial constraints imposed by their jobs, whereas parents in more prestigious occupations can afford the time and money required to reason with their children, consider their perspectives, and encourage independent decision-making (Conger & Dogan, 2007).

Despite the causal processes and mechanisms that have been proposed, intergenerational risk implies that maladaptive outcomes are a possibility, not a certainty; in other words, not all children will repeat the developmental trajectories established by their parents. In fact, many children who grow up at psychosocial risk do not exhibit problems later in life (Cairns & Cairns, 1994; Chase-Lansdale & Votruba-Drzal, 2004; Feinstein & Bynner, 2006; Saltaris et al., 2004; Serbin & Karp, 2004; Serbin et al., 1998; Serbin et al., 2004). Therefore, research that seeks to identify the causal mechanisms and moderating factors underlying the transfer of risk is essential to promoting competence and preventing maladaptive outcomes in vulnerable families (Luthar & Cicchetti, 2000; Serbin & Karp, 2004; Serbin & Stack, 1998). Prospective, longitudinal, and intergenerational investigations of high-risk families that assess parents and children at similar developmental periods, provide the ideal method of investigating continuities and discontinuities across generations, and elucidating the factors and mechanisms that underly the transfer of risk (Charman, 2009; Conger et al., 2003; Rutter & Sroufe, 2000; Serbin & Karp, 2003).

Concordia Longitudinal Risk Project

The *Concordia Longitudinal Risk Project* (henceforth referred to as the *Concordia Project*) is a long-term prospective, intergenerational investigation of families

at psychosocial risk. The *Concordia Project* comprises a community-based sample of individuals first recruited in 1976-78 (Ledingham, 1981; Schwartzman, Ledingham, & Serbin, 1985). At the project's inception, peer ratings were used to identify 1774 inner-city school-aged children as highly aggressive, socially withdrawn, or high on both dimensions; notably, boys and girls were approximately equally represented. These original participants have since become parents, making it possible to study the transfer of risk to their offspring. Recent studies with this sample have revealed that mothers' childhood histories of risk can lead to problematic parenting and subsequent deviant behaviour patterns in offspring (e.g., De Genna et al, 2006; Grunzeweig et al., 2009; Saltaris et al., 2004; Serbin et al., 1998; Serbin et al., 2004). More specifically, mothers who were aggressive in childhood were more likely to demonstrate behaviours indicative of aggression when interacting with their children (Bentley, 2002; Enns et al., 2009) and mothers who were socially withdrawn in childhood were more likely to demonstrate poor interaction skills (Bentley, 2002; Enns et al., 2009; Grunzeweig et al., 2009). Furthermore, their children were also more apt to exhibit poor social skills in these interactions (Bentley, 2002; Enns et al., 2009; Grunzeweig et al., 2009).

A recent study from the *Concordia Project* (Grunzeweig et al., 2009) investigated a sample of mothers and their preschool-aged children in order to determine how mothers' childhood histories of aggression and social withdrawal influenced children's compliance to maternal requests in a series of naturalistic interactions. Results revealed that mothers who were socially withdrawn during childhood were more likely to employ intrusive requests (i.e., physical interventions, repetitions, and requests without opportunity to comply). In addition, mothers who were aggressive during childhood were

more likely to repeat their requests. These types of intrusive, repetitive requests subsequently predicted higher rates of children's noncompliance. Taken together, mothers' childhood histories of risk predicted their parenting strategies, which subsequently predicted their preschoolers' behaviour.

The Present Study

The current study revisited this subsample of high-risk families (Grunzeweig et al., 2009) in order to investigate autonomy development and social competence in middle childhood. Given that that mutuality is central to the socialization of self-regulatory abilities, the contributions of mutuality to autonomy behaviours demonstrated by mothers and their children were investigated. Secondly, in light of research on the intergenerational transfer of risk, this study was also designed to investigate associations between mothers' childhood histories of risk, autonomy and mutuality in mother-child interactions, and children's social outcomes at middle childhood. Thirdly, drawing on theories suggesting that noncompliance represents early emerging autonomy development, the links between request-compliance exchanges at preschool, autonomy behaviours at middle childhood, and children's behaviour problems at both time points were examined.

Part 1 of this study focused on mother-child interactions in middle childhood (n = 94). The objective of *Part 1* was to examine the relationships between mothers' and children's displays of autonomy and mutuality in naturalistic mother-child interactions. It was hypothesized that mothers' behaviours would contribute to the prediction of children's behaviours, and that mutuality behaviours would contribute to the prediction of autonomy behaviours. *Part 2* focused on the intergenerational transfer of risk (n = 64;

these *mothers* were all original participants of the *Concordia Project* , and constitute a subsample of the participants from *Part 1*). The objective of *Part 2 wa*s to examine the relationships between (a) mothers' childhood histories of aggression and social withdrawal, (b) mothers' and children's displays of autonomy and mutuality during mother-child interactions (measured at middle childhood), and (c) children's social competence (also measured at middle childhood). It was hypothesized that mothers' childhood histories of aggression and social withdrawal would (through different routes) contribute to the prediction of mothers' and children's mutuality and autonomy behaviours, which would in turn predict children's social competence and problems. *Part 3* focused on the development of autonomy and social competence from preschool to middle childhood (n = 41; these participants *also* participated in Grunzeweig et al., 2009, and are a subsample of the participants from *Part 2*). The objective of *Part 3* was to examine the relationships between mothers' request strategies, children's noncompliance, and children's behaviour problems (all measured during preschool) and mothers' and children's displays of autonomy and children's behaviour problems (all measured during middle childhood). More specific hypotheses for the three parts are described in the Results section.

The present study was the first of its kind to use observational methods to assess autonomy and mutuality in mother-child interactions in middle childhood. Moreover, this was the first study to longitudinally examine developing autonomy from preschool to middle childhood. The features of this study (e.g., a prospective, longitudinal investigation of mother-child dyads using multi-informant and observational measures) make it an excellent design for studying the intergenerational transfer of risk. The results

of this study mark an important contribution to our understanding of the development of autonomy across childhood, and its relationship to developing social competence in high-risk families.

Chapter 2: Dissertation Study

Autonomy, Mutuality, and Social Competence in Middle Childhood:
Links to Early Childhood and Maternal Histories of Risk

Manuscript to be submitted

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Abstract

This study examined developing autonomy and social competence in high-risk mother-child dyads at middle childhood, and explored links to mother-child mutuality, mothers' childhood histories of risk, and mother-child interactions and behaviour problems at preschool. Families from a prospective, intergenerational study participated in a series of naturalistic interactions at two time points; observational coding was employed in order to investigate autonomy and mutuality at middle childhood (age 10-13), and maternal requests and child noncompliance at preschool (age 2-6). Children's social competence and problems were also assessed at both time points. Results indicated that mutuality behaviours predicted autonomy behaviours, underscoring the link between these two constructs. Mothers' behaviours predicted child behaviours, suggesting that mother-child interactions shape children's developing social skills. Children's behaviours were associated with concurrent/preschool social outcomes, and mothers' preschool request strategies predicted subsequent autonomy support. Effects of maternal risk (education, childhood aggression and withdrawal) and child sex were also revealed. Findings elucidate the role of developing autonomy and social competence in vulnerable families, and underscore the importance of middle childhood in promoting children's positive outcomes.

From toddlerhood to adulthood, autonomy is a central component of an individual's developing social competence (e.g., Barber & Harmon, 2002; Crockenberg & Litman, 1990; Dennis, Cole, Zahn-Waxler, & Mizuta, 2002; Dix, Stewart, Gershoff, & Day, 2007; Friedman, Holmbeck, DeLucia, Jandasek, & Zebracki, 2009; Marsh, McFarland, Allen, McElhaney, & Land, 2003; Mattanah, 2001; McElhaney & Allen, 2001; Ng, Kenny-Benson, & Pomerantz, 2004). Across the lifespan, learning to become autonomous, while still maintaining close relationships with others, is a task inherent to social competence (Allen, Hauser, Bell, & O'Connor, 1994; Allen, Hauser, Eickholt, Bell, & O'Connor, 1994; Crockenberg & Litman, 1990; Dennis et al., 2002; Kuperminc, Allen, & Arthur, 1996; Mendez, Fantuzzo, & Cicchetti, 2002; Phinney, Kim-Jo, Osorio, & Vilhjalmsdottir, 2005; Rose-Krasnor, 1997; Zimmer-Gembeck & Collins, 2003). Studying developing autonomy and social competence is especially important in high-risk families, where individuals frequently struggle to master developmental tasks and navigate pivotal life transitions (Allen, Hauser, Eickholt, et al., 1994; Allen, Hauser, O'Connor, Bell, & Eickholt, 1996; Conger & Donnellan, 2007; Friedman et al., 2009; Marsh et al., 2003; Masten & Coatsworth, 1998; McElhaney & Allen, 2001; Serbin et al., 1998; Serbin & Karp, 2004). The present study was designed to investigate links between chidren's developing autonomy and social competence in a sample of high-risk families. More specifically, this study examined the relationships between: (1) mothers' and children's displays of autonomy and mutuality during naturalistic interactions in middle-childhood, (2) mothers' childhood histories of aggression and social withdrawal, autonomy and mutuality in mother-child interactions, and children's social competence in

middle childhood, and (3) autonomy development and children's behaviour problems from preschool to middle childhood[3].

Certain behaviours exhibited by children and adolescents during parent-child interactions are indicative of autonomy development; e.g., noncompliance with parental requests, negotiation attempts, and providing a reason to substantiate an argument (Donovan, Leavitt, & Walsh, 2000; McElhaney & Allen, 2001; Zimmer-Gembeck & Collins, 2003). Although preschool and adolescence have been identified as critical periods of autonomy development, it is also important to explore periods of transition in order to further shed light on developing processes and skills (Collins, Laursen, Mortensen, Luebker, & Ferreira, 1997). While the preschool and adolescent periods have received extensive attention (e.g., Barber & Harmon, 2002; Crockenberg & Litman, 1990; McElhaney & Allen, 2001; Weinfield, Ogawa, & Egeland, 2002; Zimmer-Gembeck & Collins, 2003), research has largely neglected preadolescence in the study of autonomy development (Mattanah, 2001; Wray-Lake, Crouter, & McHale, 2010).

Parental responses to children's behaviour have been implicated in children's developing autonomy (e.g., Allen, Hauser, Eickholt, et al., 1994; Barber & Harmon, 2002; Barber, Olsen, & Shagle, 1994; Grolnick, Gurland, DeCourcey, & Jacob, 2002; Mattanah, 2001; Mills & Rubin, 1998; Pettit, Laird, Dodge, Bates, & Criss, 2001; Pinquart & Silbereisen, 2002). In order to foster children's autonomy development, parents need to model socially appropriate autonomous behaviour (e.g., stating a reason

[2] *Middle childhood* typically refers to 6-12 years of age (Collins, 1984a; Feldman, 2005). According to Sullivan's model of social-personality development, *preadolescence* (also referred to as *late middle childhood*; Collins & Madsen, 2003) refers to ages 9-12 (Buhrmester & Furman, 1986; www.merriam-webster.com, n.d.). Because both terms match the ages of the children who participated in this study, the two terms will henceforth be used interchangeably.

to support a request), while gradually curbing their efforts to control (McElhaney & Allen, 2001). Parenting strategies that encourage children to assert their needs and desires, and develop their independent identities (i.e., autonomy support), have been correlated with children's sophisticated and competent methods of self-assertion, as well as social competence and overall wellbeing (Allen, Hauser, Bell, & O'Connor, 1994; Braungart-Rieker, Garwood, & Stifter, 1997; Crockenberg & Litman, 1990; Kuczynski, Kochanska, Radke-Yarrow, Girnius-Brown, 1987; Mattanah, 2001; Zimmer-Gembeck & Collins, 2003). In contrast, parental psychological control (i.e., interfering with children's autonomous strivings) has been associated with compromised autonomy development in children, as well as impairments in self-regulation and self-worth, and increased rates of psychosocial problems (Barber & Harmon, 2002; Crockenberg & Litman, 1990; Marsh et al., 2003; McElhaney & Allen, 2001; Mills & Rubin, 1998; Pettit et al., 2001). Despite this wealth of research, few studies examined parental autonomy support or interference behaviours in middle childhood (Grolnick et al., 2002; Mattanah, 2001).

Autonomy development flourishes in the context of close and positive parent-child relationships, whereby children can experiment with their independence in a safe and supportive environment (Friedman et al., 2009; Harrist & Waugh, 2002; Zimmer-Gembeck & Collins, 2003). That is, parents must be attuned and responsive to their children's needs, as well as provide a warm environment in which children can freely assert themselves. Parent-child relationships characterized by synchronous, cooperative, and mutually warm interactions are said to exhibit dyadic mutuality, also referred to as synchrony, reciprocity, relatedness, and mutual responsive orientation (Barber, Bolitho, & Bertrand, 2001; Criss, Shaw, & Ingoldsby, 2003; Deater-Deckard, Atzaba-Poria, &

Pike, 2004; Deater-Deckard & Petrill, 2004; Harrist & Waugh, 2002; Kochanska, Aksan, Prisco, & Adams, 2008). While these terms are often used synonymously in the literature, one consistent definition for the overall construct has yet to be operationalized; in the present paper, the term mutuality will be used to describe interactions where the partners demonstrate both cooperation and warmth. Mutuality has been shown to represent an important quality of parent-child interactions from infancy to preschool (Feldman, 2003; Harrist & Waugh, 2002; Kochanska et al., 2008; Lindsey, Mize, & Pettit, 1997). A handful of studies have recently emerged acknowledging the significance of mutuality in middle childhood (Criss et al., 2003; Deater-Deckard et al., 2004; Deater-Deckard & Petrill, 2004) and adolescence (Barber et al., 2001; Denissen, van Aken, & Dubas, 2009; Harach & Pettit, 2005; Lindsey, Colwell, Frabutt, Chambers, MacKinnon-Lewis, 2008). Findings from this small body of literature suggest that children from families with higher levels of parent-child mutuality are more likely to have better social skills and fewer behaviour problems, as well as lower levels of parent-child conflict (Barber et al., 2001; Criss et al., 2003; Deater-Deckard et al., 2004; Deater-Deckard & Petrill, 2004; Denissen et al., 2009; Harach & Pettit, 2005).

According to the relationship perspective on socialization, mutually responsive interaction styles facilitate the development of self-regulatory skills, including autonomy, and lay the groundwork for children to become socially competent members of society (Harrist & Waugh, 2002; Deater-Deckard et al., 2004). Links between autonomy and mutuality have been investigated in adolescence (e.g., Allen, Hauser, Bell, & O'Connor, 1994; Allen, Hauser, Eickholt, et al., 1994; Allen, Hauser, O'Connor, Bell, & Eickholt, 1996; Kuperminc, Allen, & Arthur, 1996), and the role of mutuality in the development

of self-regulation and social competence has been explored in the preschool years (e.g., Harrist & Waugh, 2002; Kochanska, 1997; Kochanska, Aksan, Prisco, & Adams, 2008; Kochanska & Murray, 2000; Lindsey, Cremeens, & Caldera, 2010). However, researchers have largely overlooked the association between autonomy and mutuality in middle childhood, as well as links between these constructs and social competence.

Social competence is a heterogeneous construct referring to effectiveness in interaction (Rose-Krasnor, 1997). From a behavioural perspective, social competence encompasses the characteristics of social interaction that promote adjustment and prevent psychosocial problems, including the ability to initiate interaction, respond contingently to the social signals of others, and refrain from the overt display of negative behaviours that would impede reciprocal interaction (Creasey, Jarvis, & Berk, 1998; Dirks, Treat, & Weersing, 2007; Rose-Krasnor, 1997). Included under the umbrella of social competence is the ability to achieve personal goals while maintaining positive relationships with others (Rose-Krasnor, 1997); therefore, autonomy and mutuality can be conceptualized as both indices, as well as facilitators, of social competence. Given that impaired social functioning in childhood is associated with an increased risk for serious adjustment difficulties later in life (Creasey et al., 1998; Dirks et al., 2007), middle childhood offers a valuable context for studying the roles of autonomy and mutuality in children's developing social competence.

Three main features of middle-childhood make it an ideal time frame for studying the links between autonomy, mutuality, and social competence. Firstly, Erikson defined middle-childhood as a period marked by competency-building and goal attainment (Thomas, 2000). Furthermore, middle childhood is brimming with developmental change

(e.g., improved perspective-taking and moral reasoning skills, self-concept consolidation, and social relationship formation), and as a result, autonomy and mutuality may be expressed differently in this period relative to preschool or adolescence (Collins, 1984b; Collins, 2005; Feldman, 2005; Huesmann, Dubow, Eron, & Boxer, 2006). Secondly, the parent-child relationship at this stage is characterized by co-regulation, whereby parents are transitioning from a period where they managed their preschoolers, to a period where their adolescents will be afforded increasing independence (Collins & Madsen, 2003; Maccoby, 1984). Moreover, the shift of regulatory responsibilities from parent to child that typically occurs during this transitional period may be accelerated in mutually responsive dyads (Criss et al., 2003). Thirdly, middle-childhood is most notably associated with school entry, and the newfound environments and relationships that it brings. As school-age children spend progressively more more time with peers, and less time with parents, high levels of parent-child mutuality increase the likelihood that children will make safe autonomous decisions when not under direct parental supervision (Criss et al., 2003). Taken together, middle childhood represents an ideal period for studying the collective importance of autonomy, mutuality, and social competence in mother-child interactions.

Mother-child interactions in preschool can elucidate the early foundations of autonomy and social competence, as skills acquired through early family interactions have been shown to set the stage for developing social abilities in middle childhood (Huston & Ripke, 2006b; Masten & Coatsworth, 1998). In early childhood, autonomy and social competence are tightly intertwined; excessive noncompliance may increase the likelihood of behaviour problems, and threaten social competence in the school years and

beyond (Emond, Ormel, Veenstra, & Oldehinkel, 2007; Masten & Coatsworth, 1998; O'Leary, Slep, & Reid, 1999; Patterson, DeBaryshe, & Ramsey, 1989). Longitudinal measurement of autonomy and social competence must assume a developmentally-sensitive perspective due to the fact that the same underlying construct manifests differently over time (Jimenez, Dekovic, & Hidalgo, 2009; Kerig, 2001; Sroufe, 1979; Wakschlag, Tolan, & Leventhal, 2010; Weinfield et al., 2002). Children's autonomy behaviours evolve (e.g., toddlers throw tantrums, preadolescents negotiate), and parental responses vary accordingly (e.g., physical intervention, providing a logical explanation). Similarly, the underlying conceptualization of social competence remains generally constant across the lifespan (i.e., effectiveness in interaction); however, the relative importance of specific behaviours and indices shifts over time (Rose-Krasnor, 1997).

Behaviour problems provide a useful index of social competence, and can also reflect aberrant autonomy development (Kerig, 2001; Smith, Calkins, Keane, Anastopoulos, & Shelton, 2004). Problematic behaviour in childhood is often stable across development, affecting not only the lives of the individuals exhibiting problems, but impacting their significant relationships (e.g., spouses and children). Two important and stable maladaptive behavioural styles are aggression and social withdrawal. Childhood aggression and withdrawal have the potential to undermine autonomy, mutuality, and especially social competence; moreover, failure to achieve competence in developmentally-salient tasks (such as these) further aggravate the risk of maladaptive life trajectories for children with behavioural problems (Masten & Coatsworth, 1998; Masten et al., 2005). When demonstrated in childhood, aggression and social withdrawal can put individuals at risk for negative life trajectories that impinge on children's ability

to adapt to major life transitions, including parenthood (Caspi & Moffitt, 1995; Coie & Dodge, 1998; Huesmann et al., 2006; Rubin, Burgess, & Coplan, 2002; Serbin et al., 1998; Serbin et al., 2004). Furthermore, children who also grow up in adverse child-rearing environments are at an even greater disadvantage, as poor environmental circumstances are associated with increased difficulty establishing and maintaining supportive relationships, persisting into adulthood (Boyle & Lipman, 2002; Conger & Donnellan, 2007; Pagani et al., 2006).

Together, maladaptive behavioural styles and socioecological risk increase the likelihood that children growing up with these problems will carry their difficulties into their own families (Conger & Donnellan, 2007; Serbin & Karp, 2003; Serbin & Karp, 2004; Serbin et al., 2004; Serbin & Stack, 1998). Furthermore, these individuals will likely employ parenting strategies that, through a variety of mechanisms (e.g., social learning, coercive processes), jeopardize their offspring, thus perpetuating intergenerational cycles of risk (Bailey, Hill, Oesterle, & Hawkins, 2009; Belsky, Conger, & Capaldi, 2009; Conger, Neppl, Kim, & Scaramella, 2003; Patterson, 2002). As such, children who grow up at risk are more likely to become the parents of another disadvantaged generation, demonstrating a myriad of mental and physical health problems (Caspi & Moffitt, 1995; Saltaris et al., 2004; Serbin et al., 2004; De Genna, Stack, Serbin, Ledingham, & Schwartzman, 2006). Social competence, a chief developmental task of middle childhood, is critical to understanding why some children remain at risk and others circumvent adversity and emerge resilient (Masten & Coatsworth, 1998; Shaffer, Burt, Obradovc, Herbers, & Masten, 2009). As such, it is important to consider the possible factors (e.g., behavioural styles, mother-child

mutuality, autonomy development, socioeconomic status) that determine whether at-risk children will demonstrate social competence in the face of adverse circumstances (Jimenez et al., 2009; Masten & Coatsworth, 1998).

In light of these factors, it is crucial to study social competence in high-risk families (i.e., originating from low socioeconomic neighbourhoods and/or displaying maladaptive behavioural styles), who have been shown to exhibit an increased rate of psychosocial problems and interaction difficulties (Boyle & Lipman, 2002; Shaw et al., 1998). The *Concordia Longitudinal Risk Project* (henceforth referred to as the *Concordia Project*), which began in 1976, is an ongoing inter-generational investigation of families at psychosocial risk (De Genna, Stack, Serbin, Ledingham, & Schwartzman, 2007; Schwartzman, Ledingham, & Serbin, 1985; Serbin et al., 1998; Temcheff et al., 2008). The original participants comprised a large, community-based research sample of children living in disadvantaged neighbourhoods, who were assessed using measures of aggressive and social withdrawal (Pekarik, Prinz, Leibert, Weintraub, & Neale, 1976), and have been followed until the present. Now in their 30s and 40s, many of these original participants have since had children of their own, providing the unique opportunity to study the continuity of risk across generations.

Recent studies from the *Concordia Project* have revealed that mothers' histories of childhood risk can lead to problematic parenting and subsequent deviant behaviour patterns in offspring (e.g., De Genna et al, 2006; Saltaris et al., 2004; Serbin et al., 1998; Serbin et al., 2004). One study (Grunzeweig, Stack, Serbin, Ledingham, & Schwartzman, 2009) investigated a sample of mothers and their preschool-aged children in order to determine how mothers' childhood histories of aggression and social withdrawal

influenced children's compliance to requests in a series of naturalistic interactions. Results revealed that mothers who were socially withdrawn during childhood were more likely to employ intrusive requests (i.e., physical interventions, repetitions, and requests without opportunity to comply), which subsequently predicted children's noncompliant behaviour. In addition, mothers who were aggressive during childhood were more likely to repeat their requests, which also predicted children's noncompliance. Taken together, mothers' high-risk childhood histories predicted their parenting strategies, which subsequently predicted their children's behaviour.

Request-compliance interactions represent early indicators of later autonomy development (Crockenberg & Litman, 1990; Dix et al., 2007). The current study revisited this aforementioned subsample of high-risk families (Grunzeweig et al., 2009) in order to investigate autonomy development and social competence from preschool to middle childhood. *Part 1* of the study focused on mother-child interactions in middle childhood (n = 94). The objective of *Part 1* was to examine the relationships between mothers' and children's displays of autonomy and mutuality during naturalistic mother-child interactions. It was hypothesized that mothers' behaviours would contribute to the prediction of children's behaviours (in line with social learning theory), and that mutuality behaviours would contribute to the prediction of autonomy behaviours. *Part 2* focused on the intergenerational transfer of risk (n = 64; these participants are a subsample of the participants from *Part 1*). The objective of *Part 2* was to examine the relationships between (a) mothers' childhood histories of aggression and social withdrawal, (b) mothers' and children's displays of autonomy and mutuality during mother-child interactions (measured at middle childhood), and (c) children's social

competence (also measured at middle childhood). It was hypothesized that mothers' histories of childhood aggression and social withdrawal would (through different routes) contribute to the prediction of mothers' and children's mutuality and autonomy behaviours, which would in turn predict children's social competence and problems. *Part 3* focused on the development of autonomy and social competence from preschool to middle childhood (n = 41; these participants are a subsample of the participants from *Part 2*, who also participated in Grunzeweig et al., 2009). The objective of *Part 3* was to examine the relationships between mothers' request strategies, children's noncompliance, and children's behaviour problems (all measured during preschool) and mothers' and children's displays of autonomy and children's behaviour problems (all measured during middle childhood). It was hypothesized that preschool request strategies and noncompliance would predict maternal and child autonomy at middle childhood, and that preschool noncompliance would predict behaviour problems at both time points. Specific hypotheses for each of the three parts are presented in the Results section.

Method

Identification of Participating Families

The participants in this study represent a subsample of the *Concordia Project*. The *Concordia Project* originated in 1976, when a total of 4109 students across grades 1, 4, and 7 were recruited from French language public schools in inner-city, low socioeconomic neighbourhoods in Montreal, Canada (Ledingham, 1981; Schwartzman et al., 1985). 1774 children (864 boys; 910 girls) who met inclusion criteria were screened for aggression and social withdrawal by means of a French translation of the *Pupil Evaluation Inventory* (Pekarik et al., 1976), a peer-nomination instrument that compares

children to their classmates (matched for age and sex). The PEI contains 34 items loading onto three factors: Aggression, Social Withdrawal, and Likeability[4]. Children were considered to be at high psychosocial risk if they obtained extreme scores on dimensions of aggression, withdrawal, or both; comparison children from the same schools and neighbourhoods, who did not obtain extreme aggression or withdrawal scores, were also included[5]. These original participants have since had children of their own, some of whom comprise the families from which the participants for the current study were selected. A more detailed description of the original methodology can be found in Schwartzman et al. (1985).

Current Sample

Many of the 1774 original participants of the *Concordia Project* continue to be followed. As they became parents, these participants and their offspring were then followed in different waves of testing. The present dissertation focuses on a subsample of 175 families that participated in a longitudinal study of parents and children including at least three waves of testing. Of these 175 families, participants were selected for the current wave of testing if the target child was between the ages of 9 and 12 years and was still living with the original-participant parent at the time of recruitment. Of the 119

[4] Aggression items included statements such as "those who start a fight over nothing" and "those who are mean and cruel to other children". Withdrawal items included statements such as "those who have very few friends" and "those who aren't noticed much". Likeability items included statements such as "those who help others" and "those whom everybody likes".

[5] Children identified as Aggressive scored above the 95th percentile on Aggression and below the 75th percentile on Withdrawal. Children identified as Withdrawn scored above the 95th percentile on Withdrawal and below the 75th percentile on Aggression. Children identified as Aggressive-Withdrawn scored above the 75th percentile on both scales. Comparison children scored between the 25th and 75th percentiles on both scales.

children who met these inclusion criteria, 105 mothers consented to participate. Due to technical difficulties with the videotaped interactions, data for 94 mother-child dyads were available for use in the present study. Children (n = 94) were 10 to 13 years old at the time that they participated.

This study is divided into three parts. Ninety-four mothers participated with their children (40 boys, 54 girls) in *Part 1* of the study, which examined the relationships between mothers' and children's autonomy and mutuality behaviours during mother-child interactions in middle childhood. These 94 mothers included 64 females who were recruited as children to participate in the initial phase of the *Concordia Project*, as well as 30 female partners of male participants who were also recruited as children to the initial phase of the *Concordia Project*. These 64 original female participants and their children (25 boys, 39 girls) were included in *Part 2* of the study, which examined how autonomy and mutuality during preadolescent mother-child interactions were predicted by mothers' childhood histories of aggression and social withdrawal, and predictive of other measures of children's social competence during middle childhood. Of these 64 families, 41 had previously participated in a study on mother-child interactions (Grunzeweig et al., 2009) when the target children were preschoolers (19 boys, 22 girls). These 41 dyads were included in *Part 3* of the current study, which examined whether children's behaviour problems and interactions with their mothers during middle childhood were predicted by their behaviour problems and interactions with their mothers during preschool.

Table 1 summarizes the participants' demographic characteristics, as well as mothers' childhood aggression and withdrawal scores, for the three subsamples. In order to verify the generalizability of the subsamples, it was important to compare these

variables to the larger sample of 175 families from the *Concordia Project* for whom intergenerational data has been obtained (including those who did not meet inclusion criteria for the current study). Z-scores revealed no significant differences. It was also important to verify the representativeness of the 64 original female participants of the *Concordia Project* in the current study to the larger sample of original female participants of the *Concordia Project* who are known to be mothers (n = 653), as well as the larger sample of original female participants of the *Concordia Intergenerational Project* who are known to be mothers (n = 114). These mothers were compared along dimensions of aggression and withdrawal, as well as education (diploma received) and age at birth of first child. Z-scores revealed that the mothers in the current sample were slightly more educated that the mothers in the larger sample of 653 mothers (Table 2).

Although Aggression and Withdrawal scores were analyzed as dimensional variables, it was also important to ensure that, for each of the three subsamples, the families of parents with high aggression or withdrawal scores did not differ from the comparison families in the current sample on the aforementioned demographic variables. T-test analyses indicated no significant differences on any of these variables, except that for all three subsamples, mothers from the comparison group had approximately 1 to 2 more years of education than mothers from the risk groups. Table 3 summarizes the demographic characteristics for the risk and comparison participants, and Table 4 indicates, for the three subsamples, the number of families originating from each of the three risk groups.

Procedure

Overview. This study took place over two time points; when the children were of

middle childhood age (*Parts 1* and *2*), and when they were in preschool (*Part 3*). At each time point, families were visited at home by a graduate-level experimenter and a research assistant, both of whom were blind to mothers' childhood risk status. Mothers gave written informed consent, completed interviews and a battery of questionnaires (assessing demographics as well as children's development and adjustment), and participated in mother-child interactions. At middle childhood, questionnaire packages (assessing development and adjustment) were also administered to the children and their teachers. Upon completing the research protocol, mothers and children were compensated for their participation. All of the data collection was conducted in French.

Middle childhood interactions. The mother-child interactions at middle childhood comprised a Strategy Game and a Conflict Task, which were videotaped while the research staff waited in a separate room. For the 4-minute Strategy Game, the dyad was asked to play Jenga (a strategic cooperative block game whereby participants remove blocks one at a time from a previously assembled tower, and replace the blocks on top of the tower without letting it collapse). The 6-minute Conflict Task comprised a discussion about topics specifically selected according to the participants' ratings on the *Conflict Questionnaire*, which was completed prior to the interactions. The *Conflict Questionnaire* requires parents and children to rate (separately) the degree to which the dyad is in conflict over 14 common age-appropriate issues (e.g., chores, homework, getting along with siblings). The issue rated most problematic by both mother and child was selected for discussion. Throughout both tasks, mothers and children remained seated at a table.

Preschool interactions. The mother-child interactions at preschool consisted of three tasks, which were videotaped while the research staff waited in a separate room.

First, the participants completed a 4- or 7-minute puzzle task (for children aged 24 to 42 months and 43 to 72 months, respectively), whereby mothers were instructed to work with their children on a set of standardized age-appropriate puzzles. Next, the dyad participated in a 4-minute free play, whereby mothers were instructed to play with their children as they normally would using a standardized pre-arranged set of age-appropriate toys (a tea-set, a telephone, a doll, three books, and some blocks). Last, the dyad completed a 3-minute command task, whereby mothers were instructed to ask their children to perform several tasks (e.g., "stand up", "pick up the book"). Throughout the tasks, mothers and children remained seated on a standardized mat on the floor.

Measures

Demographics. At both time points, mothers completed the *Demographic Information Questionnaire* (DIQ), in order to gather demographic information about the participating families (e.g., mothers' current age, age at birth of first child, marital status, number of years of education, occupational status, etc.). The DIQ, which was developed for the *Concordia Project*, has been shown to be an effective measure of participant demographics (e.g., Serbin et al., 1998; Saltaris et al., 2004; De Genna et al., 2007).

In addition, the *Standard International Occupational Prestige Scale* (SIOPS; Ganzeboom & Treiman, 1996) was used to measure the family's occupational status (defined as the occupational status of the parent who participated in the *Concordia Project* as a child). This widely used scale has satisfactory psychometric properties (Ganzeboom & Treiman, 1996). The types of jobs corresponding to the mean scores of the subsamples in the current study include: secretary, office manager, teacher, and production department manager.

Social competence. In this study, as well as in other recent intergenerational investigations (e.g., Shaffer et al., 2009), social competence was defined as a broad adaptive construct reflecting multiple components of social functioning (i.e., social skills and psychosocial problems), as reported by multiple informants.

***Social skills*.** The *Matson Evaluation of Social Skills with Youngsters* (MESSY; Matson, 1990) is a rating scale designed to assess the frequency of school-age children's appropriate and inappropriate social behaviours. The self-report (62 items) and parent/teacher-report (64 items) forms were administered to children, as well as mothers and teachers, respectively. The Total scores were used in the analyses, with higher scores indicative of poorer overall social skills. This scale has satisfactory validity as well as test-retest and internal reliability, and is most valuable when used with a multi-informant approach (Bell-Dolan & Allan, 1998).

Preadolescents were also administered the 34-item self-report form of the *Social Skills Rating System* (SSRS, Gresham & Elliott, 1990), which assesses the frequency of prosocial behaviours. The Total scale, with higher scores reflecting better social skills, was employed in the analyses. The SSRS Total score has acceptable internal consistency and reliability (Diperna & Volpe, 2005).

Psychosocial problems. Mothers completed the *Child Behaviour Checklist* (CBCL; Achenbach, 1991a) at both time points. The CBCL, a widely-used and well-established instrument, is a 114-item parent-report measure of behavioural and emotional problems in children. The Internalizing, Externalizing and Total Problem scale scores were used in the statistical analyses. *The Teacher Report Form* (TRF; Achenbach, 1991b), the counterpart to the CBCL, was administered to the children's teachers at

middle childhood. The Internalizing and Externalizing Problems and the Appropriate Behaviour scales were employed from this 113-item measure assessing behavioural and emotional functioning at school. Evidence for satisfactory test-retest reliability, as well as content, construct, and criterion-related validity has been demonstrated (Achenbach, 1991a, 1991b).

An adaptation of the *Pupil Evaluation Inventory* (Pekarik et al., 1976), which was the peer-nomination instrument used to assess the parents when they were children in the initial phase of the *Concordia Project*, was designed for the current study in order to assess the tendency to display behaviours that load onto factors reflecting Aggression, Social Withdrawal, and Likeability in offspring. Separate versions of this 34-item scale were completed by children and teachers at middle childhood, and all three factors were used in the analyses.

Preadolescents were also administered the *Revised Children's Manifest Anxiety Scale* (RCMAS; Reynolds & Richmond, 1978) and the *Children's Depression Inventory* (CDI; Kovacs, 1992). The RCMAS is a 37-item scale that assesses the presence of thoughts, behaviours, feelings and physiological manifestations of worry, fear, and social concerns. This measure is a widely used instrument, and has been shown to be reliable across different gender, racial, and age groups (Reynolds & Paget, 1983). The CDI is a 27-item scale that assesses the frequency and severity of thoughts and behaviours pertaining to sadness and depression. An item addressing suicidality was removed prior to administration, resulting in a total of 26 items. The CDI is the most commonly used measure of depression in children, with strong evidence for reliability and validity (Saylor, Finch, Spirito, & Bennett, 1984). The Total scores of both the RCMAS and the

CDI were employed in the analyses.

Observational Coding

In order to code the behaviours taking place during the mother-child interactions, a time line (that indicated hours, minutes, seconds, and frames per second) was edited onto the videotapes. The start and stop times for each interaction were recorded in order to calculate the exact duration of the session in minutes, rounded to the nearest hundredth. The behaviours of the mothers and their children during each of the tasks were then coded using the *Mutuality and Autonomy Coding Scheme* for the two middle childhood interactions and the *Request/ Compliance Coding Scheme* for the three preschool interactions.

Mutuality and Autonomy Coding Scheme (MACS). The MACS (Grunzeweig, 2005) is an observational coding measure of mothers' and children's displays of mutuality and autonomy developed for the purposes of this study, based in part on existing literature (e.g., Deater-Deckard & Petrill, 2004; McElhaney & Allen, 2001). The objective of this coding system is to record mothers' and children's statements and nonverbal behaviours reflecting mutuality and autonomy. Mutuality behaviours were grouped into three categories: mutuality support (subdivided into cooperation and warmth), mutuality interference, and dyadic mutuality (subdivided into shared goals and shared affect). Autonomy behaviours were grouped into two categories: autonomy support and autonomy interference. According to the MACS, the coder watches the videotaped interaction and notes each time a behaviour included in one of the above categories occurs, as well as who exhibited the behaviour (i.e., mother, child, or dyad), the type of behaviour that occurred, and the start and stop times of the behaviour.

Operational definitions of the codes can be found in Table 5.

In order to assess inter-rater reliability, 20% of the 94 dyads in *Part 1* were randomly selected and double-coded. An undergraduate research assistant, who was blind to the study's hypotheses as well as group membership, acted as a secondary coder. Percentage agreement reliability (PA; agreements divided by total agreements plus disagreements) and Cohen's kappa coefficient (r_k) were calculated on each second of the interaction in order to assess the scheme's seven coding categories (i.e., cooperation, warmth, mutuality interference, shared goals, shared affect, autonomy support and autonomy interference). Cohen's kappa tabulates the actual inter-rater agreement as a proportion of potential agreement following a correction for chance agreement (Kaplan & Saccuzzo, 2001). The reliability values obtained are considered excellent (Cohen, 1960): $r_k = 0.83$, PA = 86%.

After coding was completed, the data were reduced into analyzable variables. The frequencies of each of the seven behaviours were collapsed across the two tasks in order to create overall scores. Because each task was theoretically designed to elicit different interaction styles (i.e., cooperation and conflict), it was important to ensure that the overall scores reflected the differing durations of the tasks (i.e., 4 minutes versus 6 minutes). Thus, overall scores were obtained by computing each task-specific score as a proportion of the task duration, and then summing the two proportions. Some of the low-frequency scores were combined to create aggregate scores (Table 6).

Request/Compliance Coding Scheme (RCCS). The RCCS (Grunzeweig, 2003; Grunzeweig et al., 2009) is an observational measure of mothers' request strategies and preschoolers' compliance and noncompliance behaviours. It was developed for the

purposes of an earlier study with the *Concordia Project* (Grunzeweig et al., 2009), based in part on existing literature (e.g., Crockenberg & Litman, 1990; Donovan et al., 2000; Kuczynski & Kochanska, 1990). The objective of this coding system is to describe the essential features of an exchange in which a mother solicits her child's compliance with a given request. According to the RCCS, the coder examines each utterance spoken by the mother and discerns whether or not it is a request. If the utterance is determined to be a request, it is coded for its status (i.e., initial request, repetition, or no opportunity to comply) and for its strategy (i.e., guidance, control, or physical intervention). Following each request, the child's behaviour is coded as compliance or noncompliance. If the response is noncompliant, the type of noncompliance strategy employed is coded (i.e., self-assertion, passive noncompliance, or defiance). If the child's behaviour does not fall into one of the above categories, it is coded as "no code". Operational definitions of the codes can be found in Table 7.

As described in Grunzeweig et al. (2009), 22% of the original sample (n = 74, of which 41 dyads participated in the current study) was randomly selected and double-coded in order to ensure inter-rater reliability**.** An undergraduate research assistant, who was blind to the study's hypotheses as well as group membership, acted as a secondary coder. Reliability was calculated on five measures: (1) presence of request, (2) time of request, (3) request status, (4) request strategy, and (5) child behaviour. The first measure indicated that 90% of the requests that were coded by the first coder were also coded by the secondary coder. The second measure ensured that 95% of the time, the coders agreed on the times of the requests within a 0.5-second interval. Percentage agreement reliability (PA; agreements divided by total agreements plus disagreements) and Cohen's kappa

coefficients (r_k) were calculated to assess the reliability of the final three measures. The values obtained for request status, request strategy, and child behaviour, respectively, were: r_k = 0.76, PA = 90%; r_k = 0.87, PA = 94%; r_k = 0.65, PA = 75%. These values range from satisfactory to excellent (Cohen, 1960).

After coding was completed, the data were reduced into analyzable variables. The coding sheets were reviewed, and a list was generated of all possible combinations of request status, request strategy, and child response. Each combination included one status, one strategy, and one child response (e.g., initial-guidance-compliance, or repeat-control-defiance). Next, for each dyad, during each task, the frequency of each sequence was recorded. Afterwards, some of the frequencies were summed to obtain aggregate frequencies (e.g., frequency of guidance requests). Due to few between-context differences, behaviour frequencies were collapsed across the tasks. All of the frequencies were then converted to proportions to ensure their comparability across dyads (Table 8).

Results

Hierarchical multiple regressions were used to address the research questions. Intercorrelation analyses were conducted in order to help guide the selection of predictor variables that both answered the research questions as well as maximized statistical power. Predictors were limited to 1 per 10 participants, as recommended by Tabachnick and Fidell (2001). For the research questions involving aggression and withdrawal, the power of the analyses was maximized by treating mothers' childhood aggression and withdrawal scores as dimensions, consistent with previous research on the *Concordia Project* (e.g., Grunzeweig et al., 2009; Serbin et al., 1998).

In general, maternal childhood Aggression and Social Withdrawal were entered

into the hierarchical regression analyses first (when relevant), followed by the observational coding variables in question. Next, maternal and child demographic variables were entered (e.g., mothers' current age, age at birth of her first child, years of education, occupational prestige; children's age and sex), in order to control for the effects of these variables. Finally, previous research from the *Concordia Project* has indicated that the presence of both childhood aggression and social withdrawal together may be more strongly predictive of negative outcomes than aggression or withdrawal alone. Therefore, an interaction term that was the cross-product of participants' scores of Aggression and Social Withdrawal was entered in the final step, so that the influence of the main effects (i.e., aggression and withdrawal) could be considered first (Cohen & Cohen, 1983). In order to minimize the number of predictors entered into each analysis, this step was removed when the interaction term was not found to be a significant predictor.

Significant results ($p < .05$) are presented in the sections below. Trends ($p < .10$) were reported only if the results were central to this study, and consistent with the hypotheses.

Part 1. Autonomy and Mutuality during Mother-Child Interactions in Middle Childhood

The overall objective of *Part 1* was to examine the relationships between mothers' and children's autonomy and mutuality behaviours during mother-child interactions. An intercorrelation matrix of the variables examined in these regression analyses can be found in Table 9.

Predicting mutuality. Children's Mutuality Support and Interference, and

Dyadic Mutuality were the criterion variables. It was hypothesized that mothers' mutuality behaviours would predict children's mutuality behaviours. It was also expected that both partners' behaviours would contribute to the prediction of Dyadic Mutuality.

Mothers' mutuality behaviours were examined as predictors of children's Mutuality Support (Table 10; R^2 = 24.2%, R^2_{adj} = 18%). At Step 1, mothers' Mutuality Support (sr^2 = 7.3%) and mothers' Mutuality Interference (sr^2 = 12.6%) both emerged significant. Children were more likely to support mutuality if their mothers supported (β = .27) or interfered with (β = .36) mutuality. [6]

Mothers' mutuality behaviours were examined as predictors of children's Mutuality Interference (Table 10; R^2 = 27.9%, R^2_{adj} =22%). At Step 1, mothers' Mutuality Interference emerged significant (sr^2 = 20.3%). At Step 3, Child Age also emerged significant (sr^2 = 3.9%). Children were more likely to interfere with mutuality if their mothers did so as well (β = .44), or if they were older (β = .22).

Mothers' and children's mutuality behaviours were examined as predictors of Dyadic Mutuality (Table 10; R^2 = 30%, R^2_{adj} = 22.5%). At Step 1, mothers' Mutuality Support emerged significant (sr^2 = 12.9%). At Step 2, children's Mutuality Support emerged significant (sr^2 = 8.5%). At Step 4, mothers' Mutuality Interference (sr^2 = 4.3%) and Child Sex (sr^2 = 6.6%) were significant. Dyadic mutuality was more likely to occur if mothers (β = .26) and children (β = .32) supported mutuality, mothers interfered less with mutuality (β = -.26), or the child was a girl (β = .27).

Predicting autonomy. Children's and mothers' Autonomy Support and

[6] Unless otherwise specified, all values in text refer to the final step of the hierarchical multiple regression analysis. Also, unless reported otherwise, all results are significant at $p < .05$).

Interference were the criterion variables. It was hypothesized that mothers' autonomy behaviours would predict children's autonomy behaviours, and that both partners' mutuality behaviours would predict children's autonomy behaviours, when mothers' autonomy was taken into account. Furthermore, it was hypothesized that both partners' mutuality behaviours would predict mothers' autonomy behaviours.

Mothers' autonomy behaviours were examined as predictors of children's Autonomy Support (Table 11; $R^2 = 43.9\%$, $R^2_{adj} = 39.4\%$). In the first step, mothers' Autonomy Support ($sr^2 = 32.9\%$) and Interference ($sr^2 = 3.8\%$) both emerged significant. When mothers' demographic characteristics (i.e., age, education, and occupational prestige) were entered in Step 2, mothers' Autonomy Interference was no longer significant. In Step 3, Child Sex emerged significant ($sr^2 = 4.5\%$). Children were more likely to support autonomy if their mothers did so as well ($\beta = .59$), or if the child was a girl ($\beta = .22$).

Mothers' autonomy behaviours were examined as predictors of children's Autonomy Interference (Table 11; $R^2 = 33.3\%$, $R^2_{adj} = 27.9\%$). In Step 1, mothers' Autonomy Support ($sr^2 = 8.8\%$) and Interference ($sr^2 = 16.2\%$) both emerged significant. In Step 3, Child Age ($sr^2 = 36.5\%$) and Sex ($sr^2 = 3.8\%$) emerged significant as well. Children were more likely to interfere with autonomy if their mothers supported ($\beta = .31$) or interfered with ($\beta = .36$) autonomy, or if the children were older ($\beta = .20$) or girls ($\beta = .20$).

Mothers' and children's mutuality behaviours were examined as predictors of children's Autonomy Support, controlling for mothers' autonomy behaviours (Table 11; $R^2 = 54.1\%$, $R^2_{adj} = 49.1\%$). In Step 1, children's Mutuality Support ($sr^2 = 7.8\%$) and

Interference (sr^2 = 5.8%) emerged significant; however, children's Mutuality Interference was no longer significant in subsequent steps. In Step 2, mothers' Mutuality Interference (sr^2 = 2.3%) and Autonomy Support (sr^2 = 14.4%) emerged significant; however, mothers' Mutuality Interference was no longer significant in subsequent steps. In Step 3, Child Sex (sr^2 = 2.3%) emerged significant. Children were more likely to support autonomy if they were girls (β = .17), supported mutuality (β = .27), or if their mothers supported autonomy (β = .43).

Mothers' and children's mutuality behaviours were examined as predictors of children's Autonomy Interference, controlling for mothers' autonomy behaviours (Table 11; 26.3%). In Step 1, children's Mutuality Interference emerged significant (sr^2 = 6.4%); however; it was no longer significant in subsequent steps. In Step 2, mothers' Autonomy Support (sr^2 = 3.9%) and Interference (sr^2 = 12%) emerged significant. In Step 3, Child Sex emerged significant (sr^2 = 4.1%). Children were more likely to interfere with autonomy if their mothers supported (β = .27) or interfered with (β = .36) autonomy, or if the children were girls (β = .22).

In order to address the bidirectional nature of the interactions, mothers' and children's mutuality behaviours were examined as predictors of mothers' Autonomy Support (Table 12; R^2 = 29%, R^2_{adj} = 21.4%). In Step 1, mothers' Mutuality Support emerged significant (sr^2 = 5.5%); however, it was no longer significant in subsequent steps. In Step 2, children's mutuality support (sr^2 = 5.2%) and interference (sr^2 = 8.3%) both emerged significant. In Step 4, mothers' Education emerged significant (sr^2 = 3.1%); Education was a trend in the final step. Mothers were more likely to support autonomy if their children supported (β = .26) or interfered with (β = .35) mutuality, or if they were

more educated (*Beta* = .18, p = .06).

Mothers' and children's mutuality behaviours were examined as predictors of mothers' Autonomy Interference (Table 12; R^2 = 18.2%, R^2_{adj} = 9.4%). In Step 1, mothers' Mutuality Interference emerged significant (sr^2 = 8.8%). In Step 3, Dyadic Mutuality emerged significant (sr^2 = 4.3%); however, it was no longer significant in subsequent steps. In Step 4, mothers' Education emerged as a trend (sr^2 = 3.2%). Mothers were more likely to interfere with autonomy if they interfered with mutuality (β = .28), or were less educated (β = -.18, p = .07).

In summary, the results of *Part 1* revealed that: (1) children were more likely to engage in behaviours demonstrated by their mothers, (2) mutuality contributed to the prediction of autonomy behaviours, (3) the likelihood of autonomy behaviours and dyadic mutuality were increased in mother-daughter dyads, and (4) mothers' education contributed to their use of autonomy behaviours.

Part 2. Autonomy and Mutuality during Mother-Child Interactions: Links to Mothers' Histories of Aggression and Social Withdrawal and Children's Concurrent Social Competence

Part 2 of this study was designed to examine how autonomy and mutuality behaviours during preadolescent mother-child interactions were predicted by mothers' histories of childhood aggression and social withdrawal, and were associated with children's current social competence and problems. An intercorrelation matrix of the variables examined in the regression analyses can be found in Table 13.

Predicting mutuality and autonomy behaviours. Mothers' and children's Mutuality and Autonomy Support and Interference, and Dyadic Mutuality were the

criterion variables. In light of research suggesting that aggressive and withdrawn children demonstrate impaired social interaction skills (e.g., Grunzeweig et al., 2009; Ladd & Burgess, 1999), it was hypothesized that maternal histories of aggression and withdrawal would be inversely related to displays of appropriate autonomy and mutuality behaviours (i.e., less support, more interference).

Mothers' histories of childhood Aggression and Social Withdrawal were examined as predictors of mothers' Mutuality Interference (Table 14; R^2 = 20.3%, R^2_{adj} = 13.4%). In Step 1, which was a trend, Social Withdrawal emerged significant (sr^2 = 7%); however, it was no longer significant in Step 3. In Step 3, Child Age (sr^2 = 6.4%) and Sex (sr^2 = 8.5%) emerged significant. Mothers were more likely to interfere with mutuality if their children were older (β = .27) or girls (β = .31).

Mothers' histories of childhood Aggression and Social Withdrawal were examined as predictors of children's Autonomy Support (Table 14; R^2 = 19.5%, R^2_{adj} = 11%). In Step 4, Child Sex emerged significant (sr^2 = 9.5%). Children were more likely to support autonomy if they were girls (β = .33). Mothers' childhood Aggression also emerged significant (sr^2 = 7%); however, since the Aggression X Withdrawal interaction term emerged significant as well (sr^2 = 6.1%; β = .31), follow-up analyses were conducted to isolate the source of the interaction. As illustrated in Figure 1, when mothers were high on Withdrawal, Aggression increased the likelihood of their children supporting autonomy, but when mothers were low on Withdrawal, Aggression decreased the likelihood of their children supporting autonomy.

Social outcome factor scores. To reduce the number of hierarchical regression analyses, and maximize power, four factor analyses were conducted in order to create

scores reflecting children's social competencies and problems. First, a principal components factor analysis was conducted on the following social competence measures: SSRS Total score (child-report) and adapted-PEI Likeability score (child-report). One factor was retained; with an Eigenvalue of 1.37, it explained 68.7% of the total variance and was labelled Child-Rated Social Competence. The factor loadings are presented in Table 15.

A second principal components factor analysis with a Varimax rotation was conducted on the following social problem measures: MESSY Total score (mother-report), MESSY Total score (child-report), CBCL-Total Problems score (mother-report), CDI Total score (child-report), RCMAS Total score (child-report), adapted-PEI Withdrawal score (child-report), and adapted-PEI Aggression score (child-report). Three factors were retained. The first factor had a rotated Eigenvalue of 1.85 and explained 26.5% of the total variance. It included the CDI Total score (child-report), RCMAS Total score (child-report), and adapted-PEI Withdrawal score (child-report), and was labelled Child-Rated Internalizing Problem Behaviours. The second factor had a rotated Eigenvalue of 1.58 and explained 22.6% of the total variance. It included the MESSY Total score (child-report) and adapted-PEI Aggression score (child-report), and was labelled Child-Rated Interpersonal Problem Behaviours. The third factor had a rotated Eigenvalue of 1.71 and explained 24.4% of the total variance. It included the MESSY Total score (mother-report) and CBCL-Total Problems score (mother-report), and was labelled Mother-Rated Problem Behaviours. The factor loadings are presented in Table 16.

Separate factor analyses were conducted on the teacher-rated measures in order to

maximize the power, as there was a lower rate of return on questionnaires completed by teachers relative to those completed by mothers and children. First, a principal components factor analysis was conducted on the following social competence measures: CBCL Appropriate Behaviour (teacher-report) and adapted-PEI Likeability score (teacher-report). One factor was retained; with an Eigenvalue of 1.49, it explained 74.3% of the total variance and was labelled Teacher-Rated Social Competence. The factor loadings are presented in Table 15.

A second principal components factor analysis with a Varimax rotation was conducted on the following social problem measures: MESSY Total score (teacher-report), CBCL-Externalizing Problems score (teacher-report), CBCL-Internalizing Problems score (teacher-report), adapted-PEI Withdrawal score (teacher-report), and adapted-PEI Aggression score (teacher-report). Two factors were retained. The first factor had a rotated Eigenvalue of 2.49 and explained 49.8% of the total variance. It included the MESSY Total score (teacher-report), CBCL-Externalizing Problems score (teacher-report), and adapted-PEI Aggression score (teacher-report), and was labelled Teacher-Rated Interpersonal Problem Behaviours. The second factor had a rotated Eigenvalue of 1.74 and explained 34.8% of the total variance. It included the CBCL-Internalizing Problems score (teacher-report) and adapted-PEI Withdrawal score (teacher-report), and was labelled Teacher-Rated Internalizing Problem Behaviours. The factor loadings are presented in Table 16.

Predicting children's social outcomes. Using the factor scores as criterion measures, separate analyses examined the contributions of (1) children's mutuality behaviours, and (2) children's autonomy behaviours. It was hypothesized that children's

autonomy and mutuality support behaviours would predict their social competence scores, and their autonomy and mutuality interference behaviours would predict their social problem scores.

Children's autonomy behaviours were examined as predictors of Child-Rated Internalizing Problem Behaviours (Table 17; R^2 = 17.4%, R^2_{adj} = 10.2%). In Step 3, Child Sex emerged as a significant predictor (sr^2 = 13.2%). Girls were more likely to report having internalizing problems (β = .39). This finding was replicated in the analysis examining children's mutuality behaviours predicting Child-Rated Internalizing Problem Behaviours (Table 18).

Children's mutuality behaviours were examined as predictors of Mother-Rated Problem Behaviours (Table 18; R^2 = 28.8%, R^2_{adj} = 22.7%). In Step 2, children's Mutuality Interference emerged significant (sr^2 = 12.3%). In Step 3, Child Sex also emerged significant (sr^2 = 14.1%), and mothers' childhood Aggression emerged as a trend (sr^2 = 4.1%). Mothers were more likely to report their children's problem behaviours if they themselves had histories of childhood Aggression (β = .21), or if their children interfered with mutuality (β = .31) or were male (β = -.39). The Child Sex finding and the trend for mothers' Aggression were both replicated in the analysis examining children's autonomy behaviours predicting Mother-Rated Problem Behaviours (Table 17).

Children's autonomy behaviours were examined as predictors of Teacher-Rated Social Competence (Table 19; R^2 = 15.6%, R^2_{adj} = 8.3%). In Step 2, although the overall model was revealed to be a trend, children's Autonomy Support (sr^2 = 7.9%) and Interference (sr^2 = 7.2%) emerged as significant predictors. Teachers were more likely to

endorse social competence for children who supported autonomy more (β = .3) and interfered with autonomy less (β = -.29).

Children's mutuality behaviours were examined as predictors of Teacher-Rated Interpersonal Problem Behaviours (Table 19; R^2 = 18%, R^2_{adj} = 11%). In Step 3, the model emerged significant; Child Sex was significant (sr^2 = 7.8%), and children's Mutuality Interference was a trend (sr^2 = 5%). Teachers were more likely to report interpersonal problems for children who interfered with mutuality (β = .25) or were boys (β = -.29).

Children's autonomy behaviours were examined as predictors of Teacher-Rated Interpersonal Problem Behaviours (Table 19; R^2 = 19.5%, R^2_{adj} = 12.6%). In Step 3, children's Autonomy Interference (sr^2 = 7.6%) and Child Sex (sr^2 = 11.8%) emerged significant. Teachers were more likely to report interpersonal problems in children who interfered with autonomy (β = .3) or were boys (β = -.36).

In summary, results of *Part 2* of the study revealed that (1) when mothers were high on Withdrawal, Aggression increased the likelihood of their children supporting autonomy, but when mothers were low on Withdrawal, Aggression decreased the likelihood of their children supporting autonomy, (2) children's mutuality behaviours predicted social problems at home and school, while their autonomy behaviours predicted social competence and problems at school; (3) mothers with histories of aggression were more like to endorse social problems in their own children; and (4) girls were more likely to self-report internalizing problems than boys, while boys were more likely than girls to be rated highly on interpersonal problems.

Part 3: Autonomy Development in Mother-Child Interactions and Children's

Behaviour Problems: Links from Preschool to Middle Childhood

Part 3 investigated the associations between autonomy in mother-child interactions and children's behaviour problems, measured during preschool and middle childhood. Steps were taken to ensure that power was maximized with this relatively small sample. First, the preschool request strategies were factor analyzed (as described below), in order to reduce the number of predictor variables. Next, additional predictor variables were selected according to each specific research question, guided in part by preliminary correlation analyses. Although mutuality was not a focus of *Part 3* (because it was not assessed at preschool), children's mutuality scores were included as predictors (when indicated by preliminary correlations) in order to ascertain the unique variance explained by the preschool variables in the prediction of middle childhood variables, above and beyond the contributions of other measures of mother-child interaction in middle childhood. An intercorrelation matrix of the variables examined in the regression analyses can be found in Table 20.

Request strategy factor scores. In order to minimize the number of predictor variables, a principal components factor analysis with a Varimax rotation was conducted on mothers' request strategies during the preschool period: Guidance, Control, Physical Intervention, Repetition, and No Opportunity. Two factors were retained, replicating the results obtained in Grunzeweig et al. (2009). The first factor had a rotated Eigenvalue of 2.01 and explained 40.2% of the total variance. It included Guidance and Control, and was labelled Positive Request Strategies. The second factor had a rotated Eigenvalue of 1.75 and explained 35.1% of the total variance. It included Physical Intervention, Repetition, and No Opportunity, and was labelled Negative Request Strategies. The

factor loadings are presented in Table 21.

Predicting autonomy behaviours. Children's and mothers' Autonomy Support and Interference behaviours, and children's middle childhood CBCL scores (mother-report) were the criterion variables. It was hypothesized that mothers' positive request strategies would predict their autonomy support behaviours, while negative strategies would predict autonomy interference. It was also hypothesized that children's preschool noncompliance behaviours would predict their autonomy behaviours in middle childhood (e.g., self-assertive noncompliance would predict autonomy support; defiance would predict autonomy interference). Preschool noncompliance was also expected to predict reported behaviour problems at both time points.

Mothers' request strategies during preschool (i.e., Positive, Negative) were examined as predictors of mothers' Autonomy Support during middle childhood (Table 22; R^2 = 15.8%, R^2_{adj} = 9%). In Step 1, mothers' Positive Requests emerged significant (sr^2 = 8.9%). Mothers who employed positive request strategies with their preschoolers were more likely to support autonomy when their children reached middle childhood (β = .30).

Children's preschool noncompliance behaviours (i.e., Self-Assertion, Passive Noncompliance, Defiance) were examined as predictors of children's Autonomy Support during middle childhood (Table 22; R^2 = 39.1%, R^2_{adj} = 32.3 %). In Step 2, mothers' autonomy support emerged significant (sr^2 = 37.7%). As previously demonstrated in *Part 1* of this study, children were more likely to support autonomy if their mothers supported autonomy (β = .65).

Children's preschool compliance and behaviour problems were examined as

predictors of their mother-reported middle childhood CBCL-Total Problems scores (Table 23; $R^2 = 19.8\%$, $R^2_{adj} = 10.9\%$). In Step 2, although the model was a trend, children's preschool Compliance ($sr^2 = 6.4\%$) and middle childhood Mutuality Interference emerged as trends ($sr^2 = 7\%$). Mothers were more likely to report global behaviour problems at middle childhood if children concurrently interfered with mutuality ($\beta = .28$), or complied with fewer requests during preschool ($\beta = -.26$).

Children's preschool noncompliance and behaviour problems were examined as predictors of their mother-reported middle childhood CBCL-Externalizing Problems scores (Table 23; $R^2 = 22.1\%$, $R^2_{adj} = 13.4\%$). In Step 1, children's preschool CBCL-Externalizing Problems scores (mother-report) emerged significant ($sr^2 = 13.2\%$). Mothers were more likely to report that their children had externalizing behaviour problems at middle childhood if they reported similar problems during preschool ($\beta = .37$).

The results of *Part 3* revealed that (1) mothers who employed positive request strategies with their preschoolers were more likely to support autonomy when their children reached middle childhood, and (2) children were more likely to exhibit behaviour problems during middle childhood if they interfered concurrently with mutuality, or if they exhibited noncompliance or behaviour problems during preschool.

Discussion

The current study employed a sample of high-risk mothers from the *Concordia Project* interacting with their children in order to examine the relationships between autonomy and social competence at middle-childhood, and to investigate links to: (1) mother-child mutuality, (2) mothers' childhood histories of risk, and (3) developing

autonomy (as measured by noncompliance) and behaviour problems at preschool. Consistent with the hypotheses, results revealed that autonomy and mutuality in middle childhood were related, and that behaviours indicative of these two constructs in mother-child interactions predicted some measures of children's social competence and problems at home and school. Moreover, specific indices of autonomy, mutuality, and social competence at middle childhood were predicted by maternal risk factors (i.e., education, childhood histories of aggression and withdrawal), as well as mothers' and children's behaviour during the preschool period.

Autonomy and Mutuality during Mother-Child Interactions

As expected, children's behaviours in the interactions were largely predicted by mothers' behaviours. Children were more likely to interfere with mutuality if their mothers did so as well, which is consistent with the hypotheses and with social learning theory, including Patterson's notion of escalating coercive interaction processes (Patterson, 1982, 2002). Furthermore, children's mutuality support behaviours were predicted by mothers' mutuality support behaviours *and* mothers' mutuality interference behaviours. Several interpretations might serve to explain why children's mutuality support behaviours were directly related to mothers' mutuality interference behaviours. First, it is possible that when mothers interfere with mutuality, children demonstrate increased supportive behaviour in order to compensate for their mothers' destructive actions, or to appease their mothers and elicit a positive reaction. Second, parents and children react not only to each other's current behaviour, but also to the history of the relationship (Kuczynski & Parkin, 2009; Laible & Thompson, 2007). The child may have expected a rise in his/her mother's adverse behaviour, and was thus trying to prevent this

escalation before it occurred. Third, this pattern of behaviour might be explained by the hierarchy, or verticality, that is inherent to the parent-child relationship (Russell, Pettit, & Mize, 1998). In other words, children might have been acquiescing to their parents.

Results suggesting that mothers' behaviours predict children's behaviours also emerged from the analyses investigating the dyad's displays of autonomy. As hypothesized, children seemed to be demonstrating the behaviours exhibited by their mothers with respect to both autonomy support and interference. However, not only was there an association between mothers' and children's autonomy interference, but children's autonomy interference was also predicted by mothers' autonomy support. While somewhat surprising, this result may be attributed to children's emergent autonomy skills. Children at this age may possess the motivation to assert their autonomy, especially when exhibited by their mothers, but they may lack the skills that develop in adolescence to do so in a sophisticated or socially appropriate manner.

The findings support the hypothesized association between autonomy and mutually responsive behaviour in mothers' interactions with their preadolescents, consistent with previous studies examining autonomy and relatedness in adolescents (e.g., Allen, Hauser, Bell, & O'Connor, 1994). First, children were more likely to support autonomy if they also supported mutuality, and if their mothers supported autonomy, suggesting that children's contributions to mother-child mutuality were associated with their autonomy development, which was also promoted by mothers' displays of sophisticated autonomous behaviour. Second, mothers were more likely to interfere with autonomy if they also interfered with mutuality, suggesting a common tendency to interfere in social interactions, and possibly indicative of a "developmental cascade" of

risky behaviour (Masten et al., 2005). That is, functioning in one domain of behaviour (i.e., mutuality) may have affected functioning in a second domain of behaviour (i.e., autonomy). Third, mothers' autonomy support behaviours were predicted by children's mutuality support and interference behaviours. That children's mutuality interference was a significant predictor may be explained by mothers' perceptions of children's behaviour; mothers may have interpreted their children's interference as developmentally-appropriate attempts to challenge parental authority, and were consequently tolerating their children's behaviours, and modelling appropriate autonomous expressions (Kuczynski & Parkin, 2009). Another possible explanation may relate to McElhaney and Allen's (2001) finding that in high-risk environments, children perceive maternal autonomy interference behaviours as an indication that mothers care enough to protect them. Perhaps the children in the current sample interfered with mutuality in response to mothers' autonomy support, perceived as a lack of concern. Taken together, these findings provide evidence to buttress the hypothesized link between autonomy and mutuality, and between maternal and child behaviour.

Autonomy and Mutuality: Links to Mothers' Histories and Children's Social Competence

Autonomy behaviours were also predicted by mothers' histories of risk (i.e., educational attainment, histories of aggression and withdrawal). Mothers with more education tended to demonstrate or encourage appropriate autonomy behaviours more than mothers with less education, consistent with previous research supporting the positive effects of education on parenting and the intergenerational transfer of risk (Conger & Dogan, 2007; Neppl, Conger, Scaramella, & Ontai, 2009; Serbin et al., 1998).

Recent research suggests that parents with less education stress parental authority, while parents with more education stress self-direction, and are more likely to spend time reasoning with their children, considering their perspectives, and encouraging their independence (Conger & Dogan, 2007; Wray-Lake et al., 2010).

Furthermore, children were most likely to support autonomy if their mothers were *both* aggressive and withdrawn in childhood, or *neither* aggressive *nor* withdrawn in childhood. Although the combination of aggression and withdrawal typically has deleterious effects (Farmer, Bierman, et al., 2002; Ladd & Burgess, 1999), this finding can be explained by a closer inspection of the pattern of results. For mothers with histories of social withdrawal, aggression increased the likelihood of their children supporting autonomy. These mothers may have experienced minimal social opportunities in childhood, thus hindering the practice of self-assertive behaviour. Aggression may have provided the confidence necessary to model autonomous behaviour, thus increasing the likelihood of their children supporting autonomy. Alternatively, it is also possible that withdrawal served to inhibit mothers' aggressive or hostile tendencies (Masten et al., 2005), thus reducing the likelihood that mothers would limit their children's opportunities for autonomy, and resulting in increased rates of children's autonomy support. In contrast, for mothers who did not exhibit social withdrawal, aggression may have contributed to a more controlling or hostile parenting style, resulting in reduced opportunities for children to assert themselves. Interestingly, mothers with histories of aggression also tended to endorse problem behaviours in their children, suggesting these children may have been mirroring their mothers' behaviour. It is also possible that aggressive mothers were more likely to elicit, or perceive, problematic behaviours in

children.

Surprisingly, maternal childhood aggression and social withdrawal did not emerge as *consistent* predictors of mothers' and children's behaviours, in contrast to the literature linking behaviours in middle childhood (and aggression in particular) to behaviour in early adulthood and in the next generation (e.g., Collins & van Dulmen, 2006; Dubow, Huesmann, & Boxer, 2003; Feinstein & Bynner, 2006; Huesmann, Dubow, Eron, & Boxer, 2006; Masten et al., 2005; Conger et al., 2003). The results were also surprising in light of the myriad of findings from the *Concordia Project* demonstrating the predictive effects of maternal aggression and social withdrawal on mothers' and children's behaviour during naturalistic interactions with children in preschool (e.g., Campisi, Serbin, Stack, Schwartzman, & Ledingham, 2009; Grunzeweig et al., 2009; Saltaris et al., 2004) and middle childhood (e.g., Barrieau et al., 2010; Enns et al., 2009; Martin, Stack, Serbin, Ledingham, & Schwartzman, *in press*). The differences between behaviours assessed at Times 1 and 2 (i.e., which behaviours are selected, as well as how they are defined and measured) may have reduced or inflated the continuity of behavioural styles observed both within and across generations. In addition, the current sample stems from a high-risk *community* sample rather than a high-risk *clinical* sample. A larger sample of dyads may have been required in order to obtain a wider range of parenting and child behaviours, at both extremes of the spectrum (Dubow, Huesmann, & Boxer, 2003).

The contributions of autonomy and mutuality to the prediction of children's social competence and problems were examined in order to gain a fuller understanding of the roles played by these constructs in the intergenerational transfer of risk. Results indicated that mothers were more likely to endorse problem behaviours in children who interfered

with mutuality in mother-child interactions. Similarly, teachers tended to report interpersonal problems for children who interfered with autonomy and mutuality . Furthermore, teachers tended to endorse social competence in children who demonstrated more autonomy support and less autonomy interference. Together, these findings provide some evidence to support the external validity of the observational measure, as well as contribute to previous literature associating autonomy and mutuality with social competence (e.g., Allen et al., 2002; Barber et al., 2001; Criss et al., 2003; Deater-Deckard & Petrill, 2004; Dix et al., 2007; Harrist & Waugh, 2002; Lindsey et al., 2008; Lindsey et al., 1997). These associations also suggest a possible context-specificity whereby mutuality is central to social competence at home, whereas autonomy is relevant to social competence at school. In light of one inconsistency (i.e., mutuality interference tended to predict teacher-reported problems), more research is needed to test this hypothesis.

Autonomy and Behaviour Problems from Preschool to Middle Childhood

Given the associations between children's behaviours in mother-child interactions and children's social competence, it was important to gain a better understanding of the developmental trajectories leading up to these outcomes in middle childhood. Results indicated that mothers who employed positive request strategies (i.e., low power-assertion) with their preschoolers were more likely to support their children's autonomy at middle childhood. This continuity in parenting suggests that while autonomy development may peak in adolescence, the socialization process actually beings much earlier (Laible & Thompson, 2007). Together with Grunzeweig et al. (2009), who found that intrusive (i.e., non-optimal) request strategies predicted child noncompliance, this

finding is consistent with research showing that non-intrusive request strategies promote developing social competence (Crockenberg & Litman, 1990, Donovan, Leavitt, & Walsh, 2000).

Surprisingly, although the findings revealed continuity in mothers' socialization of autonomy, children's preschool noncompliance behaviours did not predict any of their subsequent autonomy behaviours. These results are in contrast to extensive research positing that preschool noncompliance represents children's earliest attempts at asserting their autonomy (Crockenberg & Litman, 1990; Dix et al., 2007). It is possible that the tasks and behaviours measured at preschool and middle-childhood were not similar enough to demonstrate continuity. This null finding points to an important paradox in developmental research: in order to maximize continuity, similar behaviours and similar experimental tasks are required across time points (Conger et al., 2003), yet it is developmentally inappropriate to employ the same tasks and observe the same behaviours in a preschooler and a preadolescent (Kerig, 2001; Masten et al., 2005; Weinfield et al., 2002; Zadeh, Jenkins, & Pepler, 2010).

A second possibility is that children's autonomy behaviours are still developing in middle childhood, and that noncompliance would better predict autonomy in adolescence, when strategies have begun to crystallize. A review of recent relevant literature indicates that this study was the first to attempt to longitudinally examine autonomy development using observational measures; as such, the results should be considered exploratory. Thus far, only one study (Wray-Lake et al., 2010) has attempted to chart trajectories of developing autonomy; however, this study used questionnaires to examine one particular facet of autonomy (i.e., decision-making) from middle childhood to adolescence. In

general, previous attempts to predict middle childhood outcomes from preschool experiences have not always been successful (Collins, 1984b; Weinfield et al., 2002). Further research should continue to investigate the evolution of observed child behaviours (i.e., autonomy), in normative and high-risk samples.

As hypothesized, the current study revealed some evidence to support research linking preschool noncompliance with observed and reported behavioural difficulties later in life (e.g., Campbell, 1997; Emond et al., 2007; O'Leary et al., 1999; Patterson et al., 1989; Smith et al., 2004). At middle childhood, mothers tended to report global behaviour problems in children who concurrently interfered with mutuality, or complied with fewer requests when they were preschoolers. Furthermore, mothers tended to endorse externalizing problems in children for whom they reported similar problems at preschool, underscoring the stability of children's behaviour (or parental perceptions of behaviour). Taken together, these results highlight the importance of early social behaviours (observed and reported) as critical indicators of later adjustment (Morrison, Rimm-Kauffman, & Pianta, 2003).

Autonomy, Mutuality, and Social Competence: Effects of Child Age and Sex

Child characteristics (i.e., age and sex) also played a role in predicting children's behaviour in middle childhood. Child age positively predicted mutuality interference and autonomy interference, suggesting that older preadolescents may be starting to challenge the mother-child relationship (Kuczynski & Parkin, 2009), perhaps in an immature attempt to establish their individuality (i.e., independence at the expense of close relationships, rather than reconciling independence and close relationships).

Child sex also predicted behaviour during the interactions. Dyadic mutuality, as

well as children's autonomy support and interference behaviours, were more likely in mother-daughter interactions. The role of child sex in mutuality and autonomy is not well understood, and the literature is inconsistent (e.g., Lindsey et al., 2008; Zimmer-Gembeck & Collins, 2003). Girls' increased rates of dyadic mutuality and autonomy support may be explained by the fact that girls and boys demonstrate different approaches to interaction and conflict resolution (McIsaac, Connolly, McKenney, Pepler, & Craig, 2008). Girls are frequently taught to share as a means of resolving conflict, and have been shown to be more prosocial than boys, although here too, the findings are mixed (Hastings, Uttendale & Sullivan, 2007). With respect to autonomy, girls may demonstrate different developmental trajectories than boys (Wray-Lake et al., 2010), and it is possible that the girls in the current study were more likely and more motivated to assert their autonomous strivings. Alternatively, the patterns revealed in this study may be more related to the mother-daughter pairing than to the sex of the child, per se; future research is required to replicate this study with fathers in order to better understand the role of child sex in parent-child interactions.

Child sex also differentially predicted psychosocial problems. Girls were more likely to self-report internalizing difficulties, whereas both mothers and teachers were more likely to endorse interpersonal problems in boys. This pattern is consistent with previous research (Achenbach & Rescorla, 2007) and underscores the generalizability of this at-risk sample to other community samples.

Implications and Conclusions

The present study was designed to investigate developing autonomy and social competence in mother-child interactions from preschool to middle childhood, examining

links to mother-child mutuality in middle-childhood and mothers' childhood histories of risk. Several important themes emerged from the current study. First, results revealed that mothers' behaviours predicted children's behaviours, for both autonomy and mutuality, consistent with previous research using a social learning approach to mother-child interactions. Second, mutuality behaviours predicted autonomy behaviours, in line with previous studies examining autonomy and relatedness in adolescents (e.g., Kuperminc, Allen, & Arthur, 1996; McElhaney & Allen, 2001). Mutually-responsive mother-child interactions appear to be critical to autonomy development, especially in middle-childhood when the mother-child relationship is characterized by co-regulation. Third, mothers' request strategies at preschool predicted their autonomy support at middle-childhood, demonstrating some continuity in mothers' efforts to socialize their children. Fourth, maternal risk factors (i.e., childhood histories of aggression and withdrawal, educational attainment) predicted autonomy behaviour in the interactions, and children's autonomy behaviours predicted their social competence and problems at school; these findings suggest that autonomy may play an important role in the development of social competence in at-risk families. Fifth, children's mutuality behaviours predicted mothers' perceptions of children's social problems, signifying that synchronous mother-child interactions may be essential to social competence at home. Lastly, findings also revealed stability in children's behaviour problems from preschool to middle-childhood, and behaviour problems at middle childhood were linked to observed compliance (at preschool) and mutuality interference (at middle childhood). This consistency in reports across multiple time points and informants has substantive implications for the understanding of trajectories of maladaptive behaviour, particularly in vulnerable

populations.

Although the results represent noteworthy additions to the literature, it is important to acknowledge the limitations of this research. Firstly, the sample size was somewhat small, thus limiting the extent and interpretation of the statistical analyses. Future studies should attempt to replicate the results with a larger number of families, including fathers. Secondly, a larger sample would also be conducive to more complex analyses, such as structural equation modelling, which would further elucidate the bidirectional or transactional relationships between the variables, and potentially address the issue of causality. Thirdly, although the study drew inspiration from bidirectional and transactional models of development and socialization, the methodology operated mainly from a classical social learning perspective, and should thus be interpreted as one important piece of a larger, complex individual-ecological framework (Dubow et al., 2003). Similarly, while the measure of mutuality targets important components of reciprocity (i.e., cooperation and affect) and includes a dyadic code, it is not a pure dyadic measure. Future studies should employ methodologies that more closely adhere to the tenets of transactional and dyadic models.

Despite some limitations, autonomy, mutuality, and social competence, collectively, have invaluable implications for our understanding of development in middle childhood. Middle childhood signifies a unique stage when children begin to embark on a variety of positive and negative life trajectories (Collins, 2005; Cooper et al., 2005; Huston & Ripke, 2006a), and is thus a critical time to understand the roles played by autonomy, mutuality, and social competence in shaping the lives of children at risk. Especially in high-risk families, it is vital to understand the factors (i.e., maternal

histories, preschool experiences) that determine successful trajectories of social development. To this end, findings from the present study offer insight into some possible pathways leading to positive and negative outcomes in middle childhood. For example, associations between maternal and child behaviours and children's social outcomes suggest ways that parent-child interactions may promote or hinder children's social competence, both in the home and at school. Further, that mothers' histories of risk (i.e., educational attainment, childhood behaviour) and their parenting strategies in the preschool period were predictive of behaviours during mother-child interactions indicates that mother-child interactions may be built on layers of cumulative life experiences. Together, results from this study can inform policies and programs that aid in promoting resilience and preventing maladaptive outcomes in vulnerable populations (Masten & Coatsworth, 1998).

Findings from this study make exciting contributions to the literature on autonomy development, a key component of social competence, by: (1) highlighting links to mutuality in mother-child interactions, particularly in middle childhood, (2) adding to the literature on the relationship view of socialization (e.g., Kuczynski & Parkin, 2009; Laible & Thompson, 2007; Maccoby, 2007), (3) acknowledging the role of autonomy in the intergenerational transfer of risk, (4) underscoring the importance of early childhood interactions in the development of preadolescent skills, and (5) indicating the need for a better understanding of intergenerational continuities and discontinuities in the development of competencies (Bailey et al., 2009; Thornberry et al., 2003). Results contribute to the growing literature on children's developing social competence and the continuity of behaviour across contexts, development, and generations.

Figure 1. Frequency of Child Autonomy Support as a Function of Mothers' Childhood Histories of Aggression and Withdrawal (*n* = 64)

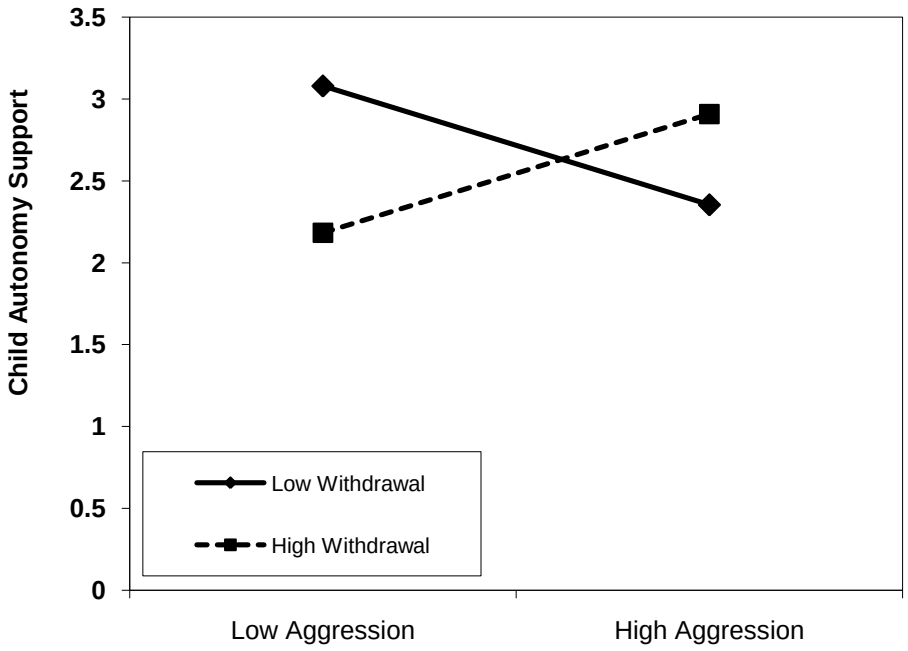


Table 1

Demographic Variables by Subsample

		Part 1 (n = 94)	Part 2 (n = 64)	Part 3 (n = 41)	Concordia Project (n = 175)
Child's age at middle-childhood testing	*M*	10.8	10.9	11.1	10.85
	SD	0.88	0.94	0.82	0.92
	z [a]	-0.05	0.05	0.27	0.00
Child's age at preschool testing	*M*	n/a	n/a	4.12	3.54
	SD	n/a	n/a	1.2	1.56
	z [a]	n/a	n/a	0.37	0.00
Mother's age at middle-childhood testing	*M*	37.2	37.5	37.4	37.35
	SD	3.2	2.5	2.5	3.26
	z [a]	-0.05	0.05	0.02	0.00
Mother's age at preschool testing	*M*	n/a	n/a	30.4	30.44
	SD	n/a	n/a	2.6	3.36
	z [a]	n/a	n/a	-0.01	0.00
Mother's age at birth of her first child	*M*	24.7	24.6	24.6	24.78
	SD	3.7	3.4	3.2	3.44
	z [a]	-0.02	-0.05	-0.05	0.00
Mother's education (years)	*M*	12.5	12.4	11.7	12.17
	SD	2.4	2.5	2.2	2.4
	z [a]	0.14	0.10	-0.20	0.00
Family prestige	*M*	54.7	58.8	60.7	53.71
	SD	26.7	28.3	29.4	27.85
	z [a]	0.04	0.18	0.25	0.00
Maternal childhood aggression score	*M*	0.22	0.27	0.31	0.39
	SD	1.02	1.08	1.13	1.06
	z [a]	-0.16	-0.11	-0.08	0.00
Maternal childhood withdrawal score	*M*	0.38	0.57	0.6	0.3
	SD	0.98	1.03	1.02	0.94
	z [a]	0.09	0.29	0.32	0.00

[a] *Z*-scores were computed by comparing the subsample mean to the mean of the Concordia Project. Z-scores above 1.96 indicate a significant difference.

Table 2

Representativeness of Mothers (Within-Mean Comparison)

		Part 2 (*n* = 64)	Concordia Intergenerational Project original participant mothers (*n* = 114)	Part 2 (*n* = 64)	Concordia Project original participant mothers (*n* = 653)
Mother's age at birth of her first child	*M*	24.67	24.56	24.67	24.99
	SD	.	3.20	.	4.59
	z [a]	0.27	0.00	-0.55	0.00
Mother's education (diploma[b])	*M*	2.48	2.31	2.48	2.19
	SD	.	0.92	.	0.98
	z [a]	1.52	0.00	2.33	0.00
Maternal childhood aggression score	*M*	0.27	0.38	0.27	0.33
	SD	.	1.06	.	1.04
	z [a]	-0.83	0.00	-0.42	0.00
Maternal childhood withdrawal score	*M*	0.57	0.45	0.57	0.36
	SD	.	0.98	.	1.04
	z [a]	0.99	0.00	-0.42	0.00

[a]*Z*-scores were computed by comparing the subsample mean to the mean of the Concordia Project. Z-scores above 1.96 indicate a significant difference. [b]Diploma scores: 1 = no diploma; 2 = high school diploma; 3 = CEGEP diploma; 4 = university diploma.

Table 3

Demographic Variables by Risk Status and Subsample

		Part 1 (*n* = 94)		Part 2 (*n* = 64)		Part 3 (*n* = 41)	
		Risk (*n* = 40)	Comparison (*n* = 54)	Risk (*n* = 33)	Comparison (*n* = 31)	Risk (*n* = 22)	Comparison (*n* = 19)
Child's age at middle-childhood testing	*M*	10.73	10.80	10.78	10.95	11.00	11.19
	SD	0.85	0.91	0.85	1.03	0.77	0.90
Child's age at preschool testing	*M*	n/a	n/a	n/a	n/a	4.00	4.26
	SD	n/a	n/a	n/a	n/a	1.25	1.12
Mother's age at middle-childhood testing	*M*	37.05	37.41	37.49	37.53	37.28	37.44
	SD	3.04	3.28	2.60	2.45	2.51	2.63
Mother's age at preschool testing	*M*	n/a	n/a	n/a	n/a	30.29	30.52
	SD	n/a	n/a	n/a	n/a	2.56	2.68
Mother's age at birth of her first child	*M*	24.33	25.26	24.61	24.70	24.54	24.57
	SD	3.39	3.23	3.24	2.69	3.44	2.90
Mother's education (years)[a]	*M*	11.93	12.98	11.64	13.16	11.09	12.32
	SD	2.27	2.41	2.03	2.71	1.90	2.33
Family prestige	*M*	53.05	56.09	56.19	61.92	63.35	57.07
	SD	27.31	26.42	28.98	27.70	30.51	28.47

Note . Risk families included participants who were identified in childhood as either Aggressive (i.e., scored above the 95th percentile on Aggression and below the 75th percentile on Withdrawal), Withdrawn (i.e., scored above the 95th percentile on Withdrawal and below the 75th percentile on Aggression), or Aggressive-Withdrawn (i.e., scored above the 75th percentile on both scales). Comparison families included participants who scored between the 25th and 75th percentiles on both scales.

[a]For each subsample, mothers from the comparison group had significantly more years of education than mothers from the risk group.

Table 4

Number of Families Originating from Each of the Risk Groups

		Risk group			Comparison	Total
		Aggressive	Withdrawn	Aggressive & Withdrawn		
Part 1	*n*	13	16	11	54	94
	%	13.8	17.0	11.7	57.4	100
Part 2	*n*	10	13	10	31	64
	%	15.6	20.3	15.6	48.4	100
Part 3	*n*	7	9	6	19	41
	%	17.1	22.0	14.6	46.3	100

Note. Risk families included participants who were identified in childhood as either Aggressive (i.e., scored above the 95th percentile on Aggression and below the 75th percentile on Withdrawal), Withdrawn (i.e., scored above the 95th percentile on Withdrawa and below the 75th percentile on Aggression), or Aggressive-Withdrawn (i.e., scored abov the 75th percentile on both scales). Comparison families included participants who scored between the 25th and 75th percentiles on both scales.

Table 5

Operational Definitions for the Mutuality & Autonomy Coding Scheme (MACS)

Code	Description	Examples
Dyadic mutuality		
Shared goals	This code is used to record behaviours that signify (1) team work or (2) partner mirroring.	(1) Both partners are simultaneously adjusting a piece in the Jenga tower; (2) Partners are simulaneously leaning in toward each other, or simultaneously counting on their fingers.
Shared affect	This code is used to indicate when the partners are (1) exhibiting the same affect or (2) touching one another.	(1) Partners are smiling or laughing at the same time; (2) partners are holding hands.
Mutuality support		
Cooperation	This code is used to record behaviours promoting shared goals, including: (1) stating one's strategy; (2) paraphrasing a partner's thoughts; (3) offering or asking for help; (4) clarifying a misunderstanding; (5) active listening; (6) soliciting partner's participation; (7) "Let's" statements.	(1) "I'm going to take a block from the middle"; (2) "So, you'd prefer to do the dishes on the weekend"; (3) "Can I help you with that?"; (4) "What I meant was, I would rather do my homework after supper"; (5) nodding head, "mm-hmm"; (6) "Can you think of some solutions to this problem?"; (7) "Let's make a list of ideas".
Warmth	This code is used to record behaviours promoting shared warmth, including: (1) smiling/laughing; (2) reflecting the partner's affect; (3) praise/encouragement; (4) jokes/playful remarks; (5) expressing emotion; (6) touching partner.	(1) Only one partner is smiling/laughing; (2) "You seem upset"; (3) "Bravo!"; (4) offering a silly solution, e.g., "Mom, you can do my homework for me!"; (5) "I'm scared"; (6) stroking partner's arm.
Mutuality interference	This code is used to record behaviours that interfere with the dyad's relationship. These behaviours can be (1) verbal or (2) nonverbal.	(1) Insulting, blaming, yelling, interrupting, reprimanding,dismissing ideas, sarcastic or passive-aggressive comments, etc.; (2) Ignoring, eye-rolling, physical aggression, looking away from partner, etc.
Autonomy support	This code is used to record behaviours that exhibit and/or support autonomy, including: (1) socratic questioning; (2) justifying an opinion; (3) requesting partner's opinion; (4) validating partner's idea/opinion; (5) negotiating; (6) logical reasoning.	(1) "Why do you think we gave you a curfew?"; (2) "Billy is mean because he takes my toys without asking"; (3) "What do you think about my idea?"; (4) "That's a great idea!"; (5) "I'll do your laundry if you help me put away the clothes"; (6) "You never forget to hang up your coat on Saturday, because you always stay home on Saturday."
Autonomy interference	This code is used to record behaviours that reflect unsophisticated attempts, or impede the partner's attempts, at asserting autonomy. These behaviours include: (1) appeasing partner; (2) pressuring partner to agree; (3) undermining partner's opinion; (4) stating an opinion or demand without justification; (5) deflecting an argument.	(1) "Fine, we'll do it your way"; (2) threatening, or begging; (3) "I don't care"; (4) "I don't want to"; (5) "My sister's room is messier than mine!"

Table 6

Mutuality and Autonomy Scores by Subsample

	Part 1 (*n* =94)		Part 2 (*n* =64)		Part 3 (*n* =41)	
	M	*SD*	*M*	*SD*	*M*	*SD*
Dyadic Mutuality	2.27	1.41	2.35	1.45	2.31	1.52
Mutuality Support						
Mother	3.30	1.60	3.26	1.73	3.35	1.89
Child	2.92	1.58	2.97	1.64	3.02	1.66
Mutuality Interference						
Mother	1.23	0.93	1.39	1.13	1.42	1.10
Child	1.85	1.39	2.02	1.55	2.37	1.69
Autonomy Support						
Mother	4.33	1.44	4.34	1.70	4.31	1.81
Child	2.56	1.29	2.58	1.43	2.58	1.45
Autonomy Interference						
Mother	0.28	0.29	0.33	0.35	0.38	0.40
Child	0.45	0.43	0.50	0.46	0.54	0.45

Table 7

Operational Definitions for the Request/Compliance Coding Scheme (RCCS)

Code	Description	Examples
Request status		
Initial request	This code marks the first time a mother requests that her child complete a given task.	"Put the puzzle piece here".
Repetition	This code is used when the request that a mother is making is the same as (or a close variation of) her previous request.	"Please put it here"; "Can you put it here?"; "I'd like you to put the piece here"; or "It goes here".
No opportunity to comply	This code is used when mother repeats her request less than one second following her initial request.	"Get the book!" (0.5 seconds elapse) "Get the book!"
Request strategy		
Guidance	This code represents the least intrusive way that a mother can make a request. Guidance requests can take many forms (e.g., suggestions, indirect commands, questions, prompts).	"Could you bring me the book?"; "I'd like you to brush the doll's hair"; "The teapot goes here"; or "Why don't you play with the blocks?"
Control	This code applies to requests that are phrased in the imperative tense. They may or may not include the word "please".	"Turn the page"; "Please stand up"; or "Don't throw blocks".
Physical intervention	This code represents the most intrusive type of request. It is used when a mother makes a verbal request and intervenes physically, and can take 3 forms: (1) A mother uses force to ensure task completion; (2) A mother makes a request and immediately completes it herself; (3) A mother makes a request and physically guides her child to complete the task.	(1) "Stay on the mat", while holding the child's hand so that he cannot leave; (2) "Get the doll", while simultaneously getting the doll; (3) "Turn the puzzle piece around", while placing her hand on the child's hand and guiding the child's movements.
Child behaviour		
Compliance	The child performs the requested task. This code is also used when a child attempts to comply but does so incorrectly. The task must be completed within 5 seconds of initiating compliance.	A child brings his/her mother a book she requested.
Self-assertion	The child does not comply with the request, but responds to his/her mother verbally in a non-negative tone. This code reflects when a child is noncompliant, but is addressing the request and/or asserting his/her own interests. Self-assertiveness may take many forms (e.g., simple refusal, requesting an explanation or clarification, negotiating).	"No"; "Why?"; "I'll do it after I finish my castle".
Passive noncompliance	This code is used when child does not comply, but does not overtly refuse either. The child typically ignores his/her mother while maintaining a non-negative attitude.	The child walks away; plays with the toys; continues what he/she was doing; talks about something else.
Defiance	This code represents the least skilful form of noncompliance and is used when the child overtly refuses to comply (although not necessarily verbally) with an angry, or generally negative affect.	The child yells, cries, stomps his/her feet, throws a toy, etc.

Table 8

Maternal Request Strategy and Child Compliance and Noncompliance Scores (n = 41)

Behaviour	*M*	*SD*
Maternal		
Requests per minute	5.81	2.34
Status		
Repetition	0.23	0.09
No opportunity	0.04	0.04
Strategy		
Guidance requests	0.32	0.14
Control requests	0.64	0.15
Physical interventions	0.04	0.06
Child		
Compliance	0.69	0.13
Noncompliance		
Self-assertion	0.35	0.18
Passive noncompliance	0.48	0.22
Defiance	0.03	0.07

Table 9

Intercorrelations among the Variables Examined in the Regression Analyses for Part 1 (n = 94)

Measure	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1. Mother's age at testing	-	0.11	0.01	-0.03	0.02	-0.11	-0.14	-0.01	0.01	-0.18	0.02	-0.02	-0.06	-0.13
2. Mothers' education (years)		-	-0.15	-0.19	0.01	0.12	-0.09	-0.07	-0.12	-0.04	0.14	-0.02	-0.23*	-0.09
3. Family occupational prestige			-	0.24*	-0.02	-0.05	0.11	0.25*	0.02	0.01	0.01	0.20	0.29**	0.06
4. Child age at testing				-	-0.15	-0.05	0.22*	0.25*	0.32**	0.04	-0.02	0.09	0.20	0.23*
5. Child sex[a]					-	0.06	0.04	0.23*	-0.01	0.22*	-0.03	0.20	0.08	0.19
6. Mother mutuality support						-	0.28**	0.03	0.05	0.36***	0.24*	0.14	-0.06	0.09
7. Child mutuality support							-	0.36***	0.34**	0.33**	0.36***	0.51***	0.11	0.18
8. Mother mutuality interference								-	0.45***	-0.07	0.10	.40***	0.29**	0.17
9. Child mutuality interference									-	-0.02	0.36***	0.46***	0.21*	0.31**
10. Dyadic mutuality										-	0.18	0.15	0.14	0.15
11. Mother autonomy support											-	0.58***	0.02	0.30**
12. Child autonomy support												-	0.21*	0.35**
13. Mother autonomy interference													-	0.41**
14. Child autonomy interference														-

[a]1 = male, 2 = female.
*p < .05. **p < .01. ***p < .001.

Table 10

Summary of Results from Hierarchical Regression Analyses Predicting Mutuality Behaviours

Outcome measures	Significant predictors in the final model[a]	Statistics for the final equation
Children's mutuality support	1) Mothers' mutuality support** 1) Mothers' mutuality interference**	R^2_{Adj} = .18, F = 3.91**
Children's mutuality interference	1) Mothers' mutuality interference*** 3) Child's age at testing*	R^2_{Adj} = .22, F = 4.76***
Dyadic mutuality	1) Mothers' mutuality support** 1) Mothers' mutuality interference* 2) Child mutuality support** 4) Child sex[b]**	R^2_{Adj} = .23, F = 3.99***

[a]Bracketed numbers indicate the step at which the predictor was entered. [b]1 = male, 2 = female.
*p < .05. **p < .01. ***p < .001.

Table 11

Summary of Results from Hierarchical Regression Analyses Predicting Children's Autonomy Behaviours

Outcome measures	Significant predictors in the final model[a]	Statistics for the final equation
Children's autonomy support	1) Mothers' autonomy support*** 3) Child sex[b]**	R^2_{Adj} = .39, F = 9.62***
Children's autonomy interference	1) Mothers' autonomy support** 1) Mothers' autonomy interference*** 3) Child age* 3) Child sex[b]*	R^2_{Adj} = .28, F = 6.13***
Children's autonomy support controlling for mothers' autonomy	1) Child mutuality support** 2) Mothers' autonomy support*** 3) Child sex[b]*	R^2_{Adj} = .49, F = 10.98***
Children's autonomy interference controlling for mothers' autonomy	2) Mothers' autonomy support* 2) Mothers' autonomy interference*** 3) Child age[t] 3) Child sex[b]*	R^2_{Adj} = .26, F = 4.69***

[a]Bracketed numbers indicate the step at which the predictor was entered. [b]1 = male, 2 = female.
[t]$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 12

Summary of Results from Hierarchical Regression Analyses Predicting Mothers' Autonomy Behaviours

Outcome measures	Significant predictors in the final model[a]	Statistics for the final equation
Mothers' autonomy support	2) Child mutuality support* 2) Child mutuality interference** 4) Mother's education (years)[t]	R^2_{Adj} = .21, F = 3.82***
Mothers' autonomy interference	1) Mothers' mutuality interference* 3) Dyadic mutuality[t] 4) Mother's education (years)[t]	R^2_{Adj} = .09, F = 2.07*

[a]Bracketed numbers indicate the step at which the predictor was entered.
[t]$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 13

Intercorrelations among the Variables Examined in the Regression Analyses for Part 2 (n = 64)

Measure	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1. Maternal childhood aggression	-	-0.09	0.53***	-0.15	-0.10	-0.14	0.07	0.11	0.13	0.00	-0.12	0.09	-0.04	0.05
2. Maternal childhood withdrawal		-	0.09	-0.08	-0.14	-0.31*	0.02	-0.17	-0.19	0.17	-0.10	-0.27*	-0.22	-0.11
3. Aggression x Withdrawal			-	-0.31*	-0.28*	-0.40	0.29*	0.10	-0.09	0.11	-0.07	0.15	0.03	-0.04
4. Mother's age at testing				-	0.66***	0.05	-0.12	-0.20	0.03	-0.25*	-0.19	-0.07	-0.05	-0.27*
5. Mother's age at birth of first child					-	0.30*	-0.12	-.301*	0.12	-0.19	-0.10	-0.07	-0.02	-0.12
6. Mothers' education (years)						-	-0.13	-0.25*	0.10	0.02	-0.09	-0.08	-0.13	-0.12
7. Family occupational prestige							-	0.29*	-0.06	-0.01	0.14	0.33*	-0.01	0.12
8. Child age at testing								-	-0.23	-0.13	0.16	0.25	0.32**	-0.01
9. Child sex[a]									-	-0.03	0.08	0.28*	-0.10	0.13
10. Mother mutuality support										-	0.20	0.00	0.04	0.23
11. Child mutuality support											-	0.29*	0.38**	0.40**
12. Mother mutuality interference												-	0.43***	-0.05
13. Child mutuality interference													-	1.00
14. Dyadic mutuality														-
15. Mother autonomy support														
16. Child autonomy support														

Table 13, page 2

	Measure	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*
1.	Maternal childhood aggression	-0.03	-0.09	0.18	-0.04	0.18	-0.01	-0.04	0.16	-0.14	0.11	0.10
2.	Maternal childhood withdrawal	-0.09	-0.15	0.13	-0.05	-0.18	-0.10	0.26*	-0.03	-0.03	0.12	-0.13
3.	Aggression x Withdrawal	0.01	0.11	0.16	-0.15	0.11	-0.06	0.01	0.20	0.02	0.22	0.11
4.	Mother's age at testing	-0.01	-0.04	-0.10	-0.19	0.09	0.06	0.11	0.00	0.05	-0.21	-0.11
5.	Mother's age at birth of first child	0.10	-0.01	-0.13	-0.26*	0.00	0.00	0.04	0.10	0.10	-0.20	-0.15
6.	Mothers' education (years)	0.16	-0.01	-0.24	-0.09	0.10	-0.03	-0.02	-0.06	0.14	-0.03	-0.13
7.	Family occupational prestige	-0.09	0.17	0.30*	0.06	0.14	0.04	-0.13	0.05	-0.11	-0.03	-0.10
8.	Child age at testing	-0.06	0.18	0.23	.27*	-.290*	-0.18	0.03	0.21	-0.23	0.00	0.24
9.	Child sex[a]	-0.01	0.23	0.08	0.17	0.20	0.41**	-0.09	-0.42**	0.20	0.00	-0.34*
10.	Mother mutuality support	0.21	0.10	-0.03	0.09	0.08	0.07	-0.10	-0.02	0.10	0.17	-0.03
11.	Child mutuality support	0.34**	0.61***	0.09	0.23	0.07	0.07	-0.17	0.03	0.10	0.06	0.10
12.	Mother mutuality interference	0.11	0.42**	0.40**	0.18	0.04	0.26*	-0.09	-0.04	0.10	-0.18	0.11
13.	Child mutuality interference	0.40**	0.48***	0.23	0.28*	0.01	-0.06	0.00	0.35**	-0.01	-0.06	0.34*
14.	Dyadic mutuality	0.28*	0.26*	0.08	0.19	-0.06	0.03	-0.14	-0.15	0.20	0.02	-0.06
15.	Mother autonomy support	-	0.59***	-0.04	0.28*	-0.02	0.09	0.03	0.12	0.22	0.06	0.43
16.	Child autonomy support		-	1.00	0.37**	0.09	-0.03	-0.10	0.00	0.25	-0.08	-0.05

Table 13, page 3

	Measure	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*
17.	Mother autonomy interference			-	0.37**	0.04	-0.03	-0.03	0.00	0.03	-0.11	0.05
18.	Child autonomy interference				-	0.10	0.19	-0.18	-0.05	-0.21	0.14	0.25
19.	Child-rated social competence					-	-0.09	-0.54**	-0.06	0.32*	-0.08	-0.18
20.	Child-rated internalizing problems						-	0.00	0.00	-0.19	0.34*	0.07
21.	Child-rated interpersonal problems							-	0.00	-0.28	0.14	0.19
22.	Mother-rated problems								-	-0.47**	0.11	0.40*
23.	Teacher-rated social competence									-	-0.24	-0.57***
24.	Teacher-rated internalizing problems										-	0.00
25.	Teacher-rated interpersonal problems											-

[a]1 = male, 2 = female.
*p < .05. **p < .01. ***p < .001.

Table 14

Summary of Results from Hierarchical Regression Analyses Using Mothers' Childhood Histories to Predict Mothers' and Children's Behaviours

Outcome measures	Significant predictors in the final model[a]	Statistics for the final equation
Mothers' mutuality interference	3) Child age* 3) Child sex*	R^2_{Adj} = .13, F = 2.95*
Children's autonomy support	1) Maternal childhood aggression* 3) Child age[t] 3) Child sex[b]* 4) Aggression x Withdrawal*	R^2_{Adj} = .11, F = 2.30*

[a]Bracketed numbers indicate the step at which the predictor was entered. [b]1 = male, 2 = female.
[t]$p < .10$. *$p < .05$.

Table 15

Factor Loadings for Social Competence (n = 64)

Variables	Factor Loadings
Child-Rated Measures	
Factor 1: Child-Rated Social Competence	
SSRS Total score	0.83
Adapted-PEI Likeability score	0.83
Teacher-Rated Measures	
Factor 1: Teacher-Rated Social Competence	
CBCL Appropriate Behaviour score	0.86
Adapted-PEI Likeability score	0.86

Table 16

Factor Loadings for Social Problem Behaviours (n = 64)

Variables	Factor Loadings
Child- and Mother-Rated Measures	
Factor 1: Child-Rated Internalizing Problem Behaviours	
CDI Total score	0.80
RCMAS Total score	0.836
Adapted-PEI Withdrawal score	0.659
Factor 2: Child-Rated Interpersonal Problem Behaviours	
MESSY Total score	0.81
Adapted-PEI Aggression score	0.83
Factor 3: Mother-Rated Social Problems	
MESSY Total score	0.91
CBCL Total problems	0.90
Teacher-Rated Measures	
Factor 1: Teacher-Rated Internalizing Problem Behaviours	
CBCL-Internalizing Problem score	0.91
Adapted-PEI Withdrawal score	0.916
Factor 2: Teacher-Rated Interpersonal Problem Behaviours	
MESSY Total score	0.907
CBCL-Externalizing Problem score	0.92
Adapted-PEI Aggression score	0.89

Table 17

Summary of Results from Hierarchical Regression Analyses Using Autonomy to Predict Problem Behaviours

Outcome measures	Significant predictors in the final model[a]	Statistics for the final equation
Child-rated internalizing problem behaviours	3) Child sex[b]**	R^2_{Adj} = .10, F = 2.44*
Mother-rated social problems	1) Maternal childhood aggression[t] 3) Child sex[b]***	R^2_{Adj} = .15, F = 3.14*

[a]Bracketed numbers indicate the step at which the predictor was entered. [b]1 = male, 2 = female.
[t]$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 18

Summary of Results from Hierarchical Regression Analyses Using Mutuality to Predict Problem Behaviours

Outcome measures	Significant predictors in the final model[a]	Statistics for the final equation
Child-rated internalizing problem behaviours	3) Child sex[b]**	R^2_{Adj} = .09, F = 2.18[t]
Mother-rated social problems	1) Maternal childhood aggression[t] 2) Children's mutuality interference* 3) Child sex[b]**	R^2_{Adj} = .23, F = 4.70**

[a]Bracketed numbers indicate the step at which the predictor was entered. [b]1 = male, 2 = female.
[t]$p < .10$. *$p < .05$. **$p < .01$.

Table 19

Summary of Results from Hierarchical Regression Analyses Predicting Teacher-Rated Social Competence and Problems

Outcome measures	Significant predictors in the final model[a]	Statistics for the final equation
Teacher-rated social competence	2) Children's autonomy support* 2) Children's autonomy interference*	R^2_{Adj} = .08, F = .07[t]
Teacher-rated interpersonal problems using mutuality	2) Children's mutuality interference[t] 3) Child sex[b]*	R^2_{Adj} = .11, F = 2.55*
Teacher-rated interpersonal problems using autonomy	2) Children's autonomy interference* 3) Child sex[b]**	R^2_{Adj} = .13, F = 2.82*

[a]Bracketed numbers indicate the step at which the predictor was entered. [b]1 = male, 2 = female.
[t]$p < .10$. *$p < .05$. **$p < .01$.

Table 20

Intercorrelations among the Variables Examined in the Regression Analyses for Part 3 (n = 41)

Measure	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1. Maternal childhood aggression	1.00	-0.03	0.58***	-0.19	-0.21	-0.17	-0.13	0.16	0.11	0.04	0.10	0.02	-0.10	0.26
2. Maternal childhood withdrawal		1.00	0.21	-0.13	-0.11	-.069	-0.26	0.20	-0.30	-0.16	-0.30	0.33*	-0.20	-0.32*
3. Aggression x Withdrawal			1.00	-0.24	-0.21	-0.26	-0.03	0.30	-0.01	0.04	-0.07	0.12	-0.08	0.21
4. Mother's age at middle childhood testing				1.00	0.96***	0.79***	0.23	-0.09	-0.15	-0.14	0.05	-0.25	-0.13	0.04
5. Mother's age at preschool testing					1.00	0.75***	0.29	-0.04	-0.11	0.09	0.10	-0.21	-0.14	0.07
6. Mother's age at birth of first child						1.00	0.38*	0.00	-0.26	-0.22	0.06	-0.28	-0.17	-0.03
7. Maternal education[b]							1.00	-0.15	-0.04	0.11	0.15	-0.15	-0.09	-0.13
8. Family occupational prestige[b]								1.00	0.12	0.18	-0.02	0.00	0.03	0.40*
9. Child age at middle childhood testing									1.00	0.77***	-0.21	-0.14	-0.01	0.17
10. Child age at preschool testing										1.00	-0.03	-0.04	-0.02	0.19
11. Child sex[a]											1.00	0.11	0.12	0.32*
12. Mother mutuality support[b]												1.00	0.21	-0.02
13. Child mutuality support[b]													1.00	0.33*
14. Mother mutuality interference[b]														1.00
15. Child mutuality interference[b]														

Table 20, page 2

Measure	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*
1. Maternal childhood aggression	0.01	0.00	0.00	-0.06	0.26	-0.01	0.12	-0.07	0.28	0.18	0.23	0.11	-0.09
2. Maternal childhood withdrawal	-0.24	-0.10	-0.03	-0.14	0.09	-0.14	0.02	0.07	0.04	0.33*	0.41**	0.14	0.03
3. Aggression x Withdrawal	0.00	-0.07	-0.02	0.13	0.22	-0.20	0.25	0.16	0.27	0.25	0.30	0.09	-0.12
4. Mother's age at middle childhood testing	0.03	-0.31	0.02	0.08	-0.08	-0.12	-0.02	-0.15	0.00	0.01	-0.03	-0.05	0.03
5. Mother's age at preschool testing	0.00	-0.25	-0.01	0.05	0.01	-0.06	-0.15	-0.24	-0.12	-0.14	-0.14	-0.06	0.03
6. Mother's age at birth of first child	-0.03	-0.29	0.09	0.01	-0.12	-0.19	0.01	-0.06	0.03	-0.02	-0.02	0.00	0.01
7. Maternal education[b]	0.01	-0.21	0.21	0.10	-0.18	0.05	0.10	0.09	-0.01	-0.16	-0.15	-0.18	0.21
8. Family occupational prestige[b]	-0.10	0.10	-0.11	0.09	0.29	-0.13	0.05	0.18	-0.02	-0.04	-0.10	0.12	0.04
9. Child age at middle childhood testing	0.22	-0.06	-0.14	0.03	0.10	0.11	0.06	-0.12	0.13	-0.27	-0.26	0.04	-0.10
10. Child age at preschool testing	0.10	0.05	-0.15	-0.05	0.25	0.20	-0.25	-0.29	-0.18	-0.50**	-0.41**	0.01	-0.08
11. Child sex[a]	-0.02	0.16	0.09	0.25	0.15	0.23	-0.28	-0.22	-0.33*	-0.25	-0.29	-0.03	-0.07
12. Mother mutuality support[b]	-0.05	0.14	0.09	0.04	0.00	0.24	0.05	-0.06	0.10	0.13	0.17	0.01	0.04
13. Child mutuality support[b]	0.46**	0.30	0.45**	0.71***	0.06	0.31*	0.02	0.08	-0.04	-0.23	0.14	0.33*	0.01
14. Mother mutuality interference[b]	0.39*	-0.13	0.00	0.23	0.52**	0.06	0.02	0.02	-0.03	-0.13	-0.15	0.18	-0.23
15. Child mutuality interference[b]	1.00	-0.14	0.41**	0.46**	0.17	0.26	0.29	0.11	0.33*	-0.07	0.16	0.21	0.00

Table 20, page 3

Measure	*28*	*29*	*30*	*31*	*32*	*33*	*34*	*35*	*36*	*37*	*38*
1. Maternal childhood aggression	0.13	-0.07	0.13	0.11	0.08	0.14	-0.07	-0.15	0.11	0.02	0.16
2. Maternal childhood withdrawal	-0.24	0.38*	-0.16	0.45**	-0.24	-0.50**	0.37*	0.34*	0.16	-0.03	0.21
3. Aggression x Withdrawal	0.11	0.04	0.12	0.19	-0.13	-0.12	0.03	0.10	0.32*	0.06	0.29
4. Mother's age at middle childhood testing	0.00	0.10	-0.04	0.01	0.07	0.04	0.00	0.15	0.26	0.01	0.30
5. Mother's age at preschool testing	0.06	-0.02	0.01	-0.10	0.20	0.11	-0.12	0.09	0.23	0.01	0.28
6. Mother's age at birth of first child	0.01	0.02	0.00	0.00	0.05	0.04	-0.02	-0.03	0.28	0.12	0.20
7. Maternal education[b]	-0.14	-0.09	-0.18	-0.16	0.15	-0.02	-0.10	-0.02	-0.09	-0.12	-0.12
8. Family occupational prestige[b]	-0.01	-0.03	0.01	-0.03	-0.06	0.04	-0.11	0.07	0.31	0.28	0.31
9. Child age at middle childhood testing	0.13	-0.19	0.15	-0.22	0.05	0.33*	-0.38*	-0.33*	-0.05	0.04	-0.02
10. Child age at preschool testing	0.22	-0.38*	0.20	-0.40**	0.31*	0.40*	-0.52**	-0.35*	-0.07	0.03	-0.02
11. Child sex[a]	0.26	-0.36*	0.20	-0.34*	0.29	0.08	-0.16	-0.14	-0.06	0.11	-0.21
12. Mother mutuality support[b]	-0.08	-0.07	-0.05	0.07	-0.14	-0.08	0.09	0.11	0.03	0.14	-0.07
13. Child mutuality support[b]	0.07	-0.16	0.11	0.10	-0.04	0.07	-0.03	0.07	0.04	0.03	0.03
14. Mother mutuality interference[b]	0.37*	-0.28	0.35*	-0.18	0.17	0.43**	-0.45**	-0.07	0.12	0.11	0.05
15. Child mutuality interference[b]	0.12	-0.22	0.12	0.04	0.04	0.34*	-0.19	-0.25	0.06	-0.26	0.21

Table 20, page 4

Measure	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*
16. Dyadic mutuality[b]		1.00	0.27	0.12	0.14	0.26	-0.18	-0.18	-0.26	-0.13	-0.11	0.04	-0.08
17. Mother autonomy support[b]			1.00	0.62***	-0.04	0.42**	0.35*	0.23	0.26	0.14	0.30	0.25	-0.31
18. Child autonomy support[b]				1.00	0.11	0.33*	0.19	0.14	0.15	-0.10	0.21	0.22	-0.21
19. Mother autonomy interference[b]					1.00	0.27	-0.04	-0.21	-0.04	-0.16	-0.19	-0.06	-0.15
20. Child autonomy interference[b]						1.00	0.05	-0.11	0.11	-0.14	-0.11	-0.06	-0.15
21. CBCL Total Score at middle childhood							1.00	0.78***	0.77***	0.47**	0.35*	0.00	-0.03
22. CBCL Internalizing Score at middle childhood								1.00	0.36*	0.37*	0.30	0.06	0.16
23. CBCL Externalizing Score at middle childhood									1.00	0.53***	0.34*	0.05	-0.22
24. Requests per minute[c]										1.00	0.65***	0.18	-0.32*
25. Repeated requests[c]											1.00	0.51**	-0.12
26. No opportunity requests[c]												1.00	-0.27
27. Guidance requests[c]													1.00
28. Control requests[c]													
29. Physical requests[c]													
30. Positive request strategies[c]													
31. Negative request strategies[c]													

Table 20, page 5

Measure	*28*	*29*	*30*	*31*	*32*	*33*	*34*	*35*	*36*	*37*	*38*
16. Dyadic mutuality[b]	0.09	-0.18	0.11	-0.13	-0.11	-0.12	0.15	0.01	-0.09	0.04	-0.10
17. Mother autonomy support[b]	0.25	0.08	0.30	0.25	-0.19	-0.02	0.14	0.23	0.20	-0.13	0.24
18. Child autonomy support[b]	0.27	-0.03	0.27	0.14	-0.20	-0.01	0.03	0.11	0.17	-0.06	0.17
19. Mother autonomy interference[b]	0.16	-0.21	0.16	-0.22	0.08	0.23	-0.31	-0.15	-0.11	-0.23	0.02
20. Child autonomy interference[b]	0.19	-0.23	0.19	-0.19	0.08	0.31*	-0.22	-0.05	-0.23	-0.26	-0.07
21. CBCL Total Score at middle childhood	-0.06	0.27	-0.05	0.31	-0.29	0.05	0.24	0.10	0.24	-0.03	0.26
22. CBCL Internalizing Score at middle childhood	-0.21	0.39*	-0.21	0.36*	-0.17	-0.02	0.23	0.31	0.13	0.02	0.06
23. CBCL Externalizing Score at middle childhood	0.15	0.16	0.16	0.25	-0.12	0.11	0.09	-0.09	0.28	-0.03	0.38*
24. Requests per minute[c]	0.12	0.59***	0.16	0.64***	-0.35*	0.35*	0.53***	0.34*	0.22	0.07	0.22
25. Repeated requests[c]	-0.03	0.50**	0.06	0.90***	0.53***	0.35*	0.55***	0.34*	0.15	-0.03	0.23
26. No opportunity requests[c]	0.26	0.07	0.42**	0.59***	-0.15	-0.10	0.02	0.13	0.03	0.09	0.02
27. Guidance requests[c]	-0.88***	-0.12	-0.92***	-0.12	0.15	-0.05	0.11	-0.08	-0.08	-0.09	-0.01
28. Control requests[c]	1.00	-0.24	0.97***	-0.13	0.17	0.19	-0.20	-0.18	0.08	0.14	0.03
29. Physical requests[c]		1.00	-0.18	0.75***	-0.48**	-0.38*	0.35*	0.73***	0.01	-0.10	0.08
30. Positive request strategies[c]			1.00	0.00	0.05	0.15	-0.19	-0.12	0.08	0.14	0.01
31. Negative request strategies[c]				1.00	-0.55***	-0.40**	0.46**	0.56***	0.09	-0.05	0.16

Table 20, page 6

Measure	*28*	*29*	*30*	*31*	*32*	*33*	*34*	*35*	*36*	*37*	*38*
32. Compliance[c]					1.00	0.28	-0.47**	-0.32*	-0.24	-0.18	-0.09
33. Self-assertion[c]						1.00	-0.69***	-0.40**	-0.03	-0.08	-0.04
34. Passive Noncompliance[c]							1.00	0.22	0.28	0.18	0.25
35. Defiance[c]								1.00	0.04	-0.15	0.14
36. CBCL Total Score at preschool									1.00	0.56***	0.79***
37. CBCL Internalizing Score at preschool										1.00	0.08
38. CBCL Externalizing Score at preschool											1.00

[a] 1 = male, 2 = female. [b]Measured at middle childhood testing.[c]Measured at preschool testing.
*p < .05. **p < .01. ***p < .001.

Table 21

Factor Loadings for Positive and Negative Maternal Request Strategies (n = 41)

Variables	Factor Loadings
Factor 1: Positive Request Strategies	
Average guidance requests	-0.92
Average control requests	0.97
Factor 2: Negative Request Strategies	
Average physical interventions	0.75
Average repeated requests	0.90
Average no opportunity requests	0.59

Table 22

Summary of Results from Hierarchical Regression Analyses using Behaviours at Preschool to Predict Autonomy Support

Outcome measures	Significant predictors in the final model[a]	Statistics for the final equation
Mothers' autonomy support	1) Positive request strategies*	R^2_{Adj} = .09, F = 2.32[t]
Children's autonomy support	2) Mothers' autonomy support***	R^2_{Adj} = .32, F = 5.77**

[a]Bracketed numbers indicate the step at which the predictor was entered.
[t]$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 23

Summary of Results from Hierarchical Regression Analyses Predicting Children's Behaviour Problems at Middle Childhood

Outcome measures	Significant predictors in the final model[a]	Statistics for the final equation
CBCL Total Problems	1) Preschool compliance[t] 2) Child mutuality interference[t]	R^2_{Adj} = .11, F = 2.22[t]
CBCL Externalizing Problems	1) CBCL Externalizing Problems score at preschool[b]*	R^2_{Adj} = .13, F = 2.55[t]

[a]Bracketed numbers indicate the step at which the predictor was entered.
[t]$p < .10$. *$p < .05$.

Chapter 3: General Discussion

The primary goal of the present dissertation was to examine the relationships between autonomy and social competence at middle-childhood in high-risk mother-child dyads. Links to mother-child mutuality, mother-child interactions and behaviour problems at preschool, and mothers' childhood histories were also investigated. This study fills an important void in the literature; knowledge of the relationships between autonomy, mutuality, and social competence has invaluable implications for our understanding of development in middle childhood because the ability to satisfy one's personal needs while responding to the needs of others is crucial to navigating the new social environments to which school-aged children are exposed. Moreover, links to factors in preschool and in mothers' own childhoods shed light on the early underpinnings of successful social development, especially in vulnerable populations.

The results of the current study elucidate the roles of autonomy and mutuality in socialization. The relationship approach to socialization argues that close relationships augment socialization strategies because when two people (i.e., mother and child) know each other well, they can anticipate each other's responses based on their perceptions of the behavioural and affective history of the relationship (Laible & Thompson, 2007). Mutuality is thus a core component of this approach, particularly in early childhood when parents serve as children's first social partners, and the socialization of self-regulation strategies begins (i.e., emerging autonomy; Collins & Madsen, 2003; Grusec & Davidov, 2007; Laible & Thompson, 2007; Maccoby, 2007). To date, and until the present dissertation, the study of mutual reciprocity in the socialization of children's autonomy (or self-regulation in general) has focused almost exclusively on the preschool period

(Grusec & Davidov, 2007; Maccoby, 2007). The current study adds to our understanding of socialization by demonstrating the association between autonomy and mutuality in middle childhood, when parents employ co-regulation to prepare their children for increasing autonomy. By definition, co-regulation comprises two key features of mutuality: cooperation and reciprocal understanding (Maccoby, 1984).

Co-regulation (as it occurs in middle childhood) involves co-regulatory processes that entail fluid, reciprocal exchanges between parents and preadolescents (Olson & Lunkenheimer, 2009). Co-regulation thus exemplifies a central feature of the relationship approach to socialization: relationships are dynamic, and socialization results from transactional influences of the partners over time and in moment-to-moment interactions (Laible & Thompson, 2007; Kuczynski & Parkin, 2007). Therefore, by analyzing the relationships between mothers' and children's behaviours during interactions taking place in preschool and middle-childhood, the current study acknowledged the bidirectional nature of mother-child interactions. The patterns emerging from the results are consistent with the basic themes of dynamic family processes; namely, that (1) parent and children are active agents whose behaviours are not only tied to their partners' behaviours, but also to their perceptions of those behaviours, (2) parents and children are not merely acting on each other's current behaviour, but also to the history of the relationship, implying that the parent-child processes are bidirectional both within and across interactions, (3) parents and children act differently with one another than they would with an acquaintance, owing to their long-term relationship history, and (4) family systems are self-corrective and self-equilibrating; that is, when a person's actions are incongruent with typical behaviour, their partner responds so as to restore the balance

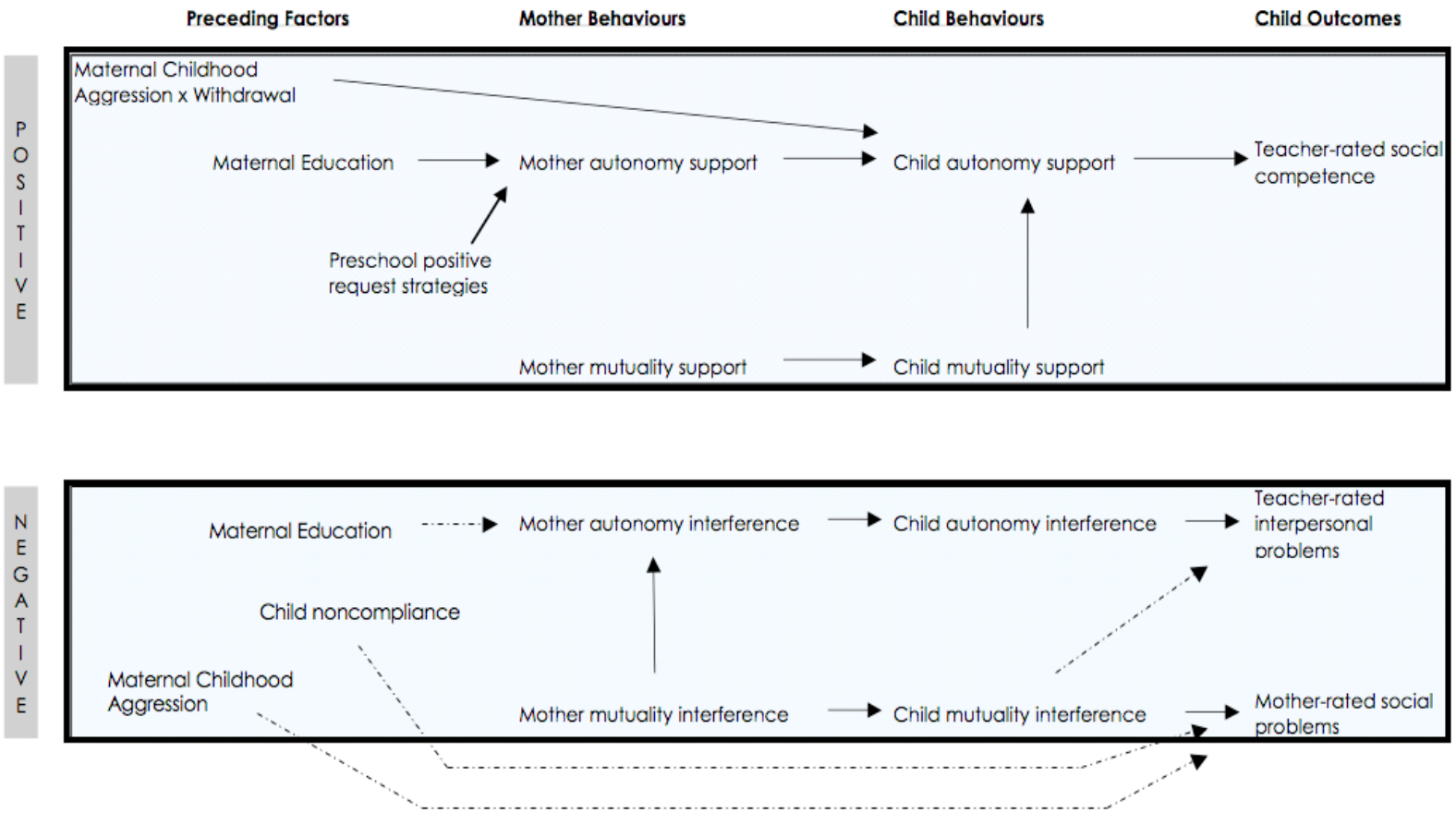
(Kuczynski & Parkin, 2009; Laible & Thompson, 2007; Maccoby, 2007). Behaviours in parent-child interactions cannot be understood as a simple series of turn-taking or stimulus-responses sequences; rather, they must be conceptualized in light of both partners' expectancies developed from a cumulative history of interactions coupled with anticipated relationship goals (Fogel, Garvey, Hsu, & West-Stromming, 2006; Kuczynski & Parkin, 2009; Maccoby, 1984).

It is widely accepted in the developmental literature that behaviours in mother-child interactions are best understood from a *transactional* perspective. Transactional models can be used to explain processes underlying the relationships between the developing child and the social context in which development occurs, and has thus been adopted by theorists of (for example) self-regulation, developmental psychopathology, and the intergenerational transfer of risk (Sameroff & Mackenzie, 2003; Olson & Lunkenheimer, 2009). Broadly defined, transactional theories posit that children and environments are plastic entities that dynamically affect one another (Sameroff, 2009). Applying this theory to mother-child interactions implies that, in moment-to-moment exchanges as well as across development, children's behaviours change their mothers' behaviours, and children are subsequently altered by their changed mothers, and vice versa (Bornstein, 2009). Both children's and mothers' behaviours are also affected by a host of other factors including individual (e.g., age, temperament, ability) and environmental characteristics (e.g., culture, financial stressors). Transactions are not just momentary stimulus-response sequences, but rather they arise from some quantitative or qualitative change that eventually signifies the onset of a new stable, organized pattern of behaviour (Olson & Lunkenheimer, 2009). Taken together, transactional models suggest

that developmental processes are dynamic, bidirectional, and transformational, continually evolving across time and social contexts (Fogel, 2009; Sameroff & Mackenzie, 2003). The interplay between child, parent, and environment over time is illustrated in these models, and this type of formulation offers an informative tool for conceptualizing the results of the current study.

A conceptual representation of the findings is illustrated in Figure 2 and shows the possible pathways (within interactions and across development) leading toward positive and negative social outcomes in middle childhood. For example, a positive pattern in middle-childhood was revealed, connecting mother-child interactions to children's social competence; mothers' mutuality support predicted children's mutuality support, which subsequently predicted children's autonomy support, which in turn predicted teacher-rated social competence. Another route was also found whereby children's mutuality support predicted mothers' autonomy support, which subsequently predicted children's autonomy support. In contrast, a maladaptive pattern of interaction (e.g., a coercive cycle) leading to social problems was also revealed; mothers' mutuality interference predicted their autonomy interference, which in turn predicted children's autonomy interference, which then predicted teacher-rated interpersonal problems. The association between negative dyadic interaction and children's maladaptive outcomes is consistent with recent research demonstrating the transactional relationship between maternal negativity and children's behaviour over time (Zadeh et al., 2010). That the current study revealed more significant findings along the route toward positive chid outcomes underscores the importance of promoting positive interactions as an important first-step in facilitating the socialization of self-regulation skills. In fact, many clinical

Figure 2. Conceptual Representation of Findings



manuals designed to reduce problematic behaviour in young children state that positive parent-child interactions must be established in order for consequences (e.g., Time-Out) to be effective (Barkley & Benton, 1998; McMahon & Forehand, 2003). An important goal of future studies is to empirically test these hypothetical pathways using statistical techniques. It might also prove valuable to test these pathways with other at-risk groups for whom autonomy and social competence are vital; for instance, individuals with physical and intellectual disabilities (e.g., Friedman, Holmbeck, DeLucia, Jansasek, & Zebracki, 2009; Lotan & Ells, 2010).

Developing social competence is also vital to success at school, as social competence is necessary to demonstrate appropriate classroom behaviour and thus maximize learning. Results from the present study provided some evidence to suggest that autonomy and mutuality may contribute to children's social competence at school. The link between autonomy and social competence at school is particularly relevant to middle childhood. Consistent with the present findings, Joussemet and colleagues (2005) found that maternal autonomy support in preschool increased the likelihood that children displayed socially competent behaviour at elementary school. Together, these results suggest that learning socially appropriate ways to assert one's needs is fundamental to attaining social competence in the classroom environment, where children are competing for each other's attention, as well as that of their teachers. Furthermore, this link between autonomy development and social competence at school is especially important in the context of a high-risk community sample, as the ability to assert one's needs in a socially appropriate manner is critical to psychosocial wellbeing and socioeconomic success. Moreover, despite one inconsistency (i.e., children's mutuality interference predicted

problems at school), the pattern of associations between children's autonomy and mutuality behaviours and their social outcomes may indicate a form of context-specificity whereby parent-child mutuality is central to children's social competence at home, whereas successful autonomy development is key to social competence at school. The association between mothers' educational attainment and their autonomy behaviours further supports this hypothesized link between autonomy and school adjustment. More research is warranted to replicate these results and to clarify the notion that autonomy and mutuality differentially predict competence at home and competence in school, respectively. Children learn social skills through interactions with their parents, which they then generalize to other settings, such as school (MacDonald & Parke, 1984; Morrison et al., 2003). However, it is important to acknowledge that children's autonomy and mutuality behaviours cannot be directly translated from the home context to other settings in a linear fashion. Therefore, future research should use observational methods to examine how children exhibit autonomy and mutuality in peer interactions, and how these interactions relate to social competence at school.

Taken together, important links were revealed between autonomy, mutuality, and social competence, as well as patterns of developing social competence over time. By demonstrating that autonomy and mutuality are linked with social outcomes in middle childhood, the findings add to the literature associating autonomy and relatedness in parent-adolescent interactions with social competence (e.g., Allen, Hauser, Bell, & O'Connor, 1994; Kuperminc, Allen, & Arthur, 1996; McElhaney & Allen, 2001). By revealing these links at middle childhood, a developmental period that often determines the direction (positive or negative) of children's trajectories, these results have important

implications for understanding competence in at-risk populations. Specifically, results from this study contribute to the notion that competence in age-salient tasks is an important mechanism in the transfer of risk (Masten & Coatsworth, 1998; Masten et al., 2005). Autonomy and mutuality may in fact be more relevant to middle childhood than previously thought, and competence in these areas may enhance social competence, and thus promote positive outcomes in at-risk children. Similarly, failure to demonstrate developmentally-appropriate competence in autonomy and mutuality at middle childhood may undermine social competence at this age, and potentially threaten outcomes later in life.

Early childhood influences on development and outcomes in middle childhood

Pathways toward positive outcomes in middle childhood were also revealed beginning in preschool. That mothers' positive request strategies at preschool predicted mothers' autonomy support behaviours at middle-childhood is consistent with theories of developmental change in interactions (Collins & Madsen, 2003). Mothers' shift from parental regulation strategies to co-regulation strategies indicates how, over time, behaviours in mother-child interactions continually transform as both partners adapt to changing characteristics of the other (Kuczynski, 2003). A transactional interpretation suggests that those mothers who used strategies low in power-assertion with their preschoolers found new age-appropriate methods of supporting children's autonomy as they got older. Based on transactional models, one would expect that across middle childhood, as children's autonomy behaviours become increasingly sophisticated, that co-regulation (i.e., mutuality) would evolve accordingly, and vice versa. Future research is warranted to better understand these changing processes in preadolescent interactions.

The findings also underscore the role of early parent behaviours in shaping children's later social competence. Given that mothers' positive request strategies at preschool predicted their subsequent autonomy support, which predicted children's autonomy support, in turn predicting children's social competence at school, the findings suggest that parents need to set the foundation for prosocial behaviour in early childhood in order to promote the generalizability of adaptive behaviour to contexts outside the family home. Research has shown that although the preschool period lays the groundwork for future development, experiences in middle childhood are essential to maintaining, improving, or undoing these early skills, and these experiences set children along trajectories that, following adolescence, become increasingly resistant to change (Huston & Ripke, 2006a).

Although transactional developmental models would imply that children's early noncompliance would predict their subsequent autonomy behaviours, the results of the current study did not support this hypothesis. As stated earlier, there exists a paradox in developmental research; in order to maximize continuity in behaviour over time, similar behaviours and similar experimental tasks should be examined at each time point (Conger et al., 2003), yet it is developmentally inappropriate to employ the same tasks and observe the same behaviours in a preschooler and a preadolescent (Howe, 2004; Kerig, 2001; Masten et al., 2005; Weinfield et al., 2002; Zadeh et al., 2010). A review of recent relevant literature indicates that the current dissertation was the first to attempt to longitudinally examine autonomy development from preschool to middle childhood using observational measures. Future studies should continue to pursue this line of research, with larger samples. In light of a possible indirect relationship, the exploration of

variables (e.g., language development) that may mediate the association between preschool noncompliance and preadolescent autonomy behaviours might elucidate trajectories of developing autonomy in childhood.

Although preschool noncompliance did not predict subsequent autonomy, results from this dissertation underscore the predictive value, and clinical utility, of observational measures as a means of identifying early indicators of maladaptive behaviour in childhood (Kerig, 2001). That preschoolers who demonstrated less compliance tended to exhibit mother-reported behaviour problems six years later provides some evidence to support the reliability and validity of the observed behaviour during preschool. However, the bidirectional and transactional relationship between mothers' and children's behaviours must be acknowledged in that preschoolers' noncompliance may have been influenced by mothers' behaviours in, or prior to, the observed interaction. Furthermore, a host of other factors may have influenced mothers' reports of their children's behaviour at middle childhood, or mediated the relationship between preschool noncompliance and preadolescent behaviour problems. Nonetheless, these findings remain developmentally meaningful; research has shown that children who exhibit self-regulation difficulties at school entry have greater difficulty meeting the developmental tasks of middle childhood, including becoming a socially competent member of society. These children are more likely to experience academic problems, as well as poor relations with teachers and peers, resulting in a strained transition to adolescence (Masten & Coatsworth, 1998).

Taken together, mothers' and children's behaviours, beginning in preschool, appear to work together to influence the overall dynamic of mother-child interactions, as

well as children's social outcomes in middle-childhood. These results suggest that successful autonomy development, coupled with mutually-responsive parent-child interactions, may be fundamental to social competence, and that the inability to behave autonomously while maintaining close family relationships may be critical to the development of externalizing behaviour and social difficulties both at home and at school (Kuperminc et al., 1996).

Intergenerational Pathways toward Social Competence

Social competence has been shown to play an important mediating role in the continuity of parenting quality across generations (Shaffer et al., 2009). Results from the current study provide some evidence to suggest a link from preadolescent social behaviour in the parent generation to preadolescent social behaviour in offspring, although the direction of effects cannot be gleaned from the analyses. Aggression and withdrawal are categories of behaviour that, when demonstrated at clinically significant levels, represent externalizing and internalizing problems; two important dimensions of child psychopathology (Farmer et al., 2002). That maternal childhood aggression and withdrawal were significant predictors of children's behaviour and outcomes supports the notion that these behavioural styles are part of a complex, intergenerational social pattern that threatens the quality of parenting and socialization (Serbin et al., 2004). However, in the current study, the interaction of aggression and withdrawal predicted children's autonomy support, which subsequently predicted their social competence at school. By demonstrating that children's autonomy support behaviours predict competence at school in a sample of children whose mothers experienced behavioural and socioeconomic risk, this latter chain of findings underscores the role of autonomy development in buffering

children from the effects of maternal risk and promoting resilience in the offspring of vulnerable families.

Interestingly, recent intergenerational research has shown that discontinuities in behaviour across development and generations may be more likely than continuities (Bailey et al., 2009; Conger, Belsky, & Capaldi, 2009; Rutter, 1998; Thornberry et al., 2003). That mothers' histories of aggression and withdrawal were not consistent predictors of mothers' and children's behaviours in the interactions of the present study is puzzling. One explanation may be related to issues of developmental timing. More specifically, the ability of an individual's childhood history to predict their subsequent parenting behaviours (or behaviours in offspring) may be determined by the developmental timing of the predictor variables. The age (and developmental stage) of the participants at the time of assessment may affect the degree to which behaviours are correlated within and across generations, due to differences in the manifestation of behavioural constructs as they develop (Thornberry et al., 2003). Belsky and colleagues (2005) posited that the effects of parents' childhood histories on parenting behaviours may be strengthened by a match between the developmental period of the childhood experience and the type of parenting behaviour investigated.

A second explanation is that there may be additional factors outside the parent-child context to which these discontinuities may be attributable. Future research should also seek to examine whether other distal variables (e.g., children's IQ, peer relationships, SES, etc.) may explain intergenerational continuities and inconsistencies, and to identify *why* aggression and withdrawal did *not* consistently predict the behaviours investigated in this study. Identifying variables that moderate the relationships between

childhood aggression or withdrawal and subsequent outcomes would enable the development of interventions and policies that target these factors.

Finally, related to the concept of moderators, multifinality must be acknowledged. Multifinality posits that the same initial starting point may lead to numerous developmental pathways, arriving at a variety of outcomes (Hastings et al., 2006). As previously stated, risk is probabilistic; while some vulnerable families may continue to perpetuate cycles of risk, other families may demonstrate competency in salient areas of functioning, and consequently emerge resilient.

According to recent reviews of intergenerational risk research, the methodological features of the present dissertation make it a valuable investigation of the intergenerational transfer of risk. More specifically, the research employed (1) a prospective design, (2) a community-based at-risk sample, (3) observational measures of behaviours combined with self-report data gleaned from multiple informants, and (4) intergenerational behaviour assessed at similar developmental stages (Conger, Belsky, & Capaldi, 2009; Dubow et al., 2003; Shaw, 2003). That said, while the current study examined how parent behaviours and circumstances predict behaviour and outcomes in offspring, this study did not investigate (nor was the data available to investigate) the relationships between the *same* behaviour as seen in parents and their children (e.g., observed aggression at middle-childhood in one generation predicting observed aggression at middle-childhood in the next generation). Future studies should seek to extend the current work by examining the *same* behaviours across generations, measured at the same time point. For example, it would be interesting to examine autonomy and mutuality in mother-child interactions when the children in the current sample have their

own offspring.

Taken together, the results of the current study would be best captured by a comprehensive model that integrates multiple mechanisms of transfer, including: maladaptive behavioural styles, social learning, competency in developmental tasks, and the socioeconomic context. Future studies should continue to elucidate the mechanisms (or mediating factors) that explain the findings. For example, it is important to consider how maternal aggression leads to increased reports of social problems in offspring; this finding may speak to the intergenerational transfer of risk, or alternatively, it may reflect the tendency of mothers with histories of aggression to perceive hostility in the behaviour of others. Research has shown that mothers' reports of their children's behaviour are frequently tied to their own levels of maladjustment (Huston & Ripke, 2006b).

Conclusions

This study marked a significant contribution to the developmental literature in that it was the first to examine the links between autonomy and mutuality in mother-child interactions at middle-childhood, using observational methods. It was also the first study to use multi-informant data to investigate the links between children's observed autonomy and mutuality behaviours, and their concurrent social functioning. In addition, it was the first time mother-child interactions at preschool were linked to autonomy in middle childhood, and applied within a high-risk sample including mothers with childhood histories of aggression and social withdrawal.

Together, the results of this study highlight the value of autonomy and mutuality in parent-child interactions during middle childhood, in addition to periods when autonomy is a defining feature such as preschool and adolescence. Autonomy in the

parent-child relationship has clear implications for children's developing social competence across contexts; moreover, the findings underscore the significance of the early stages of the socialization process in laying the groundwork for future skills development. Results from this study add to the mounting research indicating that middle childhood is a critical period for intervention and prevention programs due to the striking divergence of trajectories that occur during this period, the degree of control that adults have over children's development relative to adolescence, and the greater predictability of behaviour and functioning, compared to preschool, from middle childhood to periods later in life (Collins, 2005; Cooper et al., 2005; Feinstein & Bynner, 2006; Huston & Ripke, 2006a & 2006b).

Interventions that nurture responsive mother-child relationships and assist in successful autonomy development can not only increase the likelihood that children demonstrate competent social skills, but can also interrupt the cycle of risk, thus minimizing harmful repercussions on subsequent generations. Beginning in the parent generation, the findings are consistent with previous work highlighting the value of education in promoting positive parenting strategies. Mothers in the current study who had more years of education were more likely to employ autonomy support behaviours, and less likely to interfere with autonomy. For this reason, as well as countless others, funding should continue to be allotted towards policies and programs that prevent school dropout, and encourage continuing education.

The present findings also indicate the importance of identifying behaviour problems in the preschool years, as these problems were predictive of similar problems at middle childhood. Similarly, children's interference behaviours at middle childhood were

associated with behaviour problems both inside and outside of the home. Together, these findings suggest that, across childhood, the mother-child relationship is an important target for intervention in an effort to reduce problematic behaviour in children. Moreover, interventions that begin in early childhood must be *maintained* throughout the middle childhood years, when children are faced with a social crossroads due to their exposure to new environments and peer groups.

The current work has implications for the promotion of positive interactions and associated positive outcomes. Beginning in early childhood, mothers' positive strategies predicted positive parenting behaviours at middle childhood, and maternal support behaviours at middle childhood were associated with children's positive behaviours and social competence. Reducing maladaptive outcomes is not only achieved by preventing or eliminating problematic behaviour; rather, promoting positive relationships and positive interactions is becoming a common goal of policies and programs (e.g., Craig & Pepler, 2007; 2008). Recent research has shown that interventions designed to improve parenting strategies and enhance children's social competencies and prosocial behaviours have led to reductions in children's negative behaviours at home and at school (Dishion et al., 2008; Durlak et al., 2007; Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, 2007). Results from the present study suggest that the promotion of healthy relationships begins in the home, where children acquire the building blocks of social competence, which they subsequently apply, expand upon, and add to in the school environment. Therefore, efforts to develop policies and programs that promote positive relationships in the school system should continue to receive support; however, these programs should also seek to involve students' parents

and families in an effort to encourage children to generalize positive interaction skills across settings.

In conclusion, this dissertation makes a substantive contribution to the growing body of literature on mother-child interactions in middle childhood. The current research moves the field a step forward by providing a new understanding of autonomy development and social competence at this phase of life. Furthermore, by examining links to mutuality and the predictive value of mothers' own histories of risk, and by investigating links to mother-child interactions during preschool, the present study underscores the importance of conceptualizing child development as a dynamic, integrative process that begins before birth and evolves within the context of the family and the larger social environment.

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Appendix A

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Effects of maternal childhood aggression and social withdrawal on maternal request strategies and child compliance and noncompliance

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ABSTRACT

This prospective, intergenerational study investigated the influences of maternal histories of childhood aggression and social withdrawal on maternal request strategies and child compliance and noncompliance. Seventy-four women from the Concordia Longitudinal Risk Project, who were rated during childhood using peer nomination measures of aggression and social withdrawal, played with their 2–6 year-old children in three naturalistic conditions. Videotaped interactions were coded for mothers' requests and children's compliance/noncompliance. The results revealed that mothers who were socially withdrawn during childhood were more likely to employ intrusive requests (i.e., physical interventions, repetitions, and requests without opportunity to comply), which subsequently predicted children's noncompliant behaviour. In addition, mothers who were aggressive during childhood were more likely to repeat their requests, which also predicted children's noncompliance. Furthermore, the findings replicated previous research indicating that children demonstrate more sophisticated forms of noncompliance with age. Taken together, results from this study elucidate the trajectories of childhood aggression and social withdrawal, and provide evidence for possible pathways by which problematic behaviour is transferred from mother to child in vulnerable populations. This research has implications for the design of preventative interventions for at-risk families.

1. Introduction

The ability to comply with maternal demands represents a key milestone in children's social and cognitive development (Feldman & Klein, 2003; Kopp, 1982). During the preschool years, compliance with maternal requests serves as an important index of children's ability to regulate their own behaviour, and to observe general standards of conduct (Dix, Stewart, Gershoff, & Day, 2007; Kochanska & Aksan, 1995; Kopp, 1982). Compliance often refers to the acknowledgment of maternal teaching strategies, cooperation with maternal suggestions and requests, and obedience to maternal directives (Dix et al., 2007; Schneider-Rosen & Wenz-Gross, 1990), reflecting the large amount of time preschoolers spend interacting with their mothers (Bornstein, 1989; Weinfield, Ogawa, & Egeland, 2002). From a developmental perspective, the notion of compliance is couched within the larger, more complex construct of self-regulation, which can be conceptualized as the emerging ability to comply with maternal commands and to monitor and exert voluntary control over one's own behaviour accordingly (González, Fuentes, Carranza, & Estévez, 2001; Kopp, 1982). Thus, self-regulation, and compliance in particular, are vital to the understanding of normative and aberrant social development.

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Generally, young children comply immediately with 60 to 80% of parental requests (Kuczynski, 2003). In moderation, non-compliant behaviour can be viewed as a means for children to employ active strategies to influence their parents, and persuade them to drop or modify their requests (Dix et al., 2007; Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987); however, in excess, noncompliance can be indicative of behaviour problems (Campbell, 1997; Cole, Zahn-Waxler, Fox, Usher, & Welsh, 1996; Degnan, Calkins, Keane, & Hill-Soderlund, 2008). Extreme noncompliance during the preschool years has been associated with poor peer relationships, inferior academic performance, delinquency, and other difficulties later in life (O'Leary, Slep, & Reid, 1999; Patterson, DeBaryshe, & Ramsey, 1989). Investigations of the development of compliance and other early indicators of social competence are particularly useful in at-risk samples (e.g., individuals living with socio-economic disadvantage, histories of maladaptive behaviour, and psychopathology), where the likelihood of developing psychosocial problems (e.g., depression, anxiety) is high (Boyle & Lipman, 2002; Koenig, Cicchetti, & Rogosch, 2000; Shaw, Winslow, Owens, Vondra, Cohn, & Bell, 1998). Furthermore, at-risk mothers may be contributing to these problems by using ineffective strategies in order to elicit their children's compliance. To date, however, little is known about the effects of maternal psychosocial risk factors on maternal request strategies and children's patterns of compliance and noncompliance.

Compliance with maternal requests is first observed between the ages of 9 and 12 months (Kaler & Kopp, 1990; Kopp, 1982). Provided that children comprehend what is being asked of them, infants show age-related increases in the frequency of compliance from 12 to 18 months of age (Kaler & Kopp, 1990; Kochanska, Coy, & Murray, 2001; Kochanska, Tjebkes, & Forman, 1998). After 18 months, children's responses to maternal requests continue to change; as compliance increases in frequency, so does noncompliance (Dix et al., 2007; Vaughn, Kopp, & Krakow, 1984). Toddlers' developing autonomy begins to surface during the second and third years of life (Crockenberg & Litman, 1990; Donovan, Leavitt, & Walsh, 2000); during the "terrible twos", children are armed with relatively sophisticated cognitive and language skills, and are as likely to use these abilities to comply with maternal requests as they are not to comply (Dix et al., 2007; Laible & Thompson, 2002; Vaughn et al., 1984).

Across development, preschoolers' noncompliance behaviours, or strategies, vary in quality and skill (Degnan et al., 2008; Kuczynski et al., 1987). Primitive noncompliant responses to maternal requests lack skill and tend to be experienced as overtly offensive (e.g., temper tantrums and ignoring, or direct defiance and passive noncompliance, respectively). However, as children grow, they acquire more sophisticated and competent ways of asserting their autonomy (e.g., simple refusal, requesting explanations, and bargaining), reflecting increased social proficiency (Donovan et al., 2000; Kuczynski & Kochanska, 1990). During the preschool years, the frequency with which children employ primitive noncompliance strategies decreases, while self-assertive strategies increase (e.g., Kuczynski & Kochanska, 1990; Kuczynski et al., 1987; Landry, Smith, Swank, & Miller-Loncar, 2000; Power, McGrath, Hughes., & Manire, 1994).

Given that children's social conduct is largely influenced by the quality and style of maternal control (Baumrind, 1989; Degnan et al., 2008; Dishion, Patterson, & Griesler, 1994; Williams & Forehand, 1984), mothers can employ various strategies in order to elicit their children's compliance. Maternal control can be conceptualized in terms of the degree to which mothers assert their power over their children (e.g., Crockenberg & Litman, 1990; Donovan et al., 2000; Kochanska, Aksan, & Nichols, 2003; Kuczynski et al., 1987). "Guidance" strategies (i.e., low power-assertion) include suggestions, explanations, and indirect requests. "Control" strategies (i.e., moderate power-assertion), typically in the imperative tense, denote clear directives. "Negative control" strategies (i.e., high power-assertion) include criticism, physical intervention, and negative affect (Crockenberg & Litman, 1990). Observational studies of mother–child interactions have shown that child compliance is correlated with lower power assertion strategies, while self-assertion and defiance are associated with guidance and negative control strategies, respectively (e.g., Crockenberg & Litman, 1990; Donovan et al., 2000; Kuczynski et al., 1987).

Request–compliance interactions can also be influenced by mothers' behavioural styles (Degnan et al., 2008). Having a maladaptive behavioural style increases the likelihood that people will face challenges adapting to important life transitions, such as parenthood (Saltaris, Serbin, Stack, Karp, Schwartzman, & Ledingham, 2004). Furthermore, behavioural problems that are long-term can have cumulative negative effects on the way women adjust to motherhood and interact with their children. Aggression and social withdrawal are two stable patterns of behaviour that can lead to lifelong challenges and maladaptive outcomes, especially in the context of parenting.

Aggression has been consistently shown to be stable across the lifespan (e.g., Cairns, Cairns, Xie, Leung, & Hearne, 1998; Hops, Davis, Leve, & Sheeber, 2003; Patterson, 1982; Patterson et al., 1989; Serbin, Cooperman, Peters, Lehoux, Stack, & Schwartzman, 1998; Serbin et al., 2004; Warman & Cohen, 2000). Moreover, women with histories of peer-related aggression in childhood have been shown to demonstrate hostility during mother–child interactions (Bentley, 2002; Serbin et al., 1998). By modelling hostile behaviours in the context of mother–child interactions (e.g., power-assertive requests), aggressive mothers may inadvertently fuel noncompliance and exacerbate conflict (Campbell, 1997; Katz & Woodin, 2002), as well as train their children to respond coercively in future interactions, both in and outside of the family environment (Dishion et al., 1994; O'Leary et al., 1999; Patterson, 2002; Snyder, Reid, & Patterson, 2003).

The processes by which withdrawal negatively impacts request–compliance exchanges are rather different, and possibly less direct than those implicated in aggressive interactions. During childhood, withdrawn women may have removed themselves from social interactions, thus hindering their developing social competence and leading to dissatisfaction. Given that the stability of social withdrawal has been established, at least through to late adolescence (Moskowitz, Schwartzman, & Ledingham, 1985; Rubin, 1993; Rubin, Burgess, & Coplan, 2002; Rubin & Coplan, 2004), this combination of poor social skills and discontent is likely to impinge on the quality of the mother–child relationship. Furthermore, withdrawn mothers may contribute to their children's behavioural development either by modeling their maladaptive behavioural styles or by using inappropriate or ineffective parenting strategies, especially in the context of request–compliance exchanges (Serbin et al., 1998; Stack, Serbin, Grunzeweig, &

DeGenna et al., 2006; Stack, Serbin, Grunzeweig et al., 2005). These women, as a result of their socially-limited experiences, may not have learned appropriate techniques or strategies for getting their needs met. Furthermore, research has shown that parents of withdrawn children are more likely to adhere to overcontrolling, coercive, and power-assertive styles of parenting (Rubin, Burgess, & Hastings, 2002; Rubin, Stewart, & Coplan, 1995). This experience of parental overcontrol has been shown to exacerbate any existing social deficits in children (Rubin et al., 2002).

Taken together, girls who demonstrate aggressive or withdrawn behaviours have been shown to be at risk for life-long difficulties (Ladd & Burgess, 1999; De Genna, Stack, Serbin, Ledingham, & Schwartzman, 2006; Schwartzman, Verlaan, Peters, & Serbin, 1995; Serbin, Peters, & Schwartzman, 1996; Serbin et al., 1998; Stack, Serbin, Schwartzman, & Ledingham, 2005). During mother–child interactions, histories of maternal aggression and withdrawal can serve to influence both mothers' request strategies as well as children's compliant and noncompliant responses, thereby placing children at risk for developing similar problems to their parents, and thus perpetuating the cycle of maladaptive behaviour (Caspi & Moffitt, 1995; Saltaris et al., 2004; Serbin et al., 2004).

Recent studies examining the impact of high-risk mothers' histories on the child-rearing environments provided to their children have made it possible to assess the probability that these children will also experience psychosocial, developmental, or health problems (e.g., Cairns et al., 1998; Capaldi, Conger, Hops, & Thornberry, 2003; Chapman & Scott, 2001; Serbin & Karp, 2003; Serbin & Stack, 1998). One such study is the Concordia Longitudinal Risk Project, an ongoing prospective, inter-generational investigation of families at psychosocial risk (Serbin et al., 2004; Stack, Serbin, Schwartzman et al., 2005; Stack et al., 2006). In this project, risk is a two-fold construct defined by socio-economic disadvantage as well as psychosocial difficulty. Beginning in 1976, a community-based research sample of children from disadvantaged neighbourhoods was assessed for aggression and social withdrawal (Ledingham, 1981; Schwartzman, Ledingham, & Serbin, 1985). Now in their 30s, many of these original participants have since had children of their own, providing the unique opportunity to study the continuity of risk across generations. Results to date strongly suggest that psychosocial risk may be transferred from parent to offspring through the behaviour, functioning, health, environment, and socio-economic circumstances of the participants as they raise families of their own (Serbin et al., 2004; Stack, Serbin, Schwartzman et al., 2005; Stack, Serbin, Grunzeweig, Temcheff et al., 2005). For example, higher rates of high school dropout and teen pregnancy were predicted by the women's childhood behaviour. Furthermore, the children of women observed to be aggressive or withdrawn in childhood were more likely to display behavioural difficulties, such as aggression, themselves (Serbin et al., 1998). Prospective longitudinal designs allow for the investigation of possible mechanisms that underlie the intergenerational transfer of risk as it unfolds, without having to rely on retrospective accounts that may be subject to informant and memory biases (e.g., Conger, Neppl, Kim, & Scaramella, 2003; Hops et al., 2003; Serbin & Karp, 2003). Examining specific processes associated with the intergenerational transfer of risk, such as request–compliance interactions, facilitates the identification of patterns of maladaptive parenting that are central to children's cognitive and behavioural development.

While an abundance of literature exists on responses to maternal requests in typically-developing children, only a minority of studies have examined this phenomenon in specific at-risk populations, and no studies have examined compliance and noncompliance in low socioeconomic neighbourhoods where mothers have childhood histories of aggression and withdrawal. This gap in the literature is particularly noteworthy given the high rates of behaviour problems found in disadvantaged families (Boyle & Lipman, 2002). The Concordia Project offers the unique opportunity to explore the effects of maternal histories of childhood aggression and social withdrawal on request–compliance exchanges across two generations at high psychosocial risk.

The present study investigated whether mothers' and children's behaviours could be predicted by maternal histories of childhood aggression and social withdrawal in a sample of mother–child dyads from the Concordia Project. According to the initial publications of the Concordia Project (e.g., Moskowitz et al., 1985; Schwartzman et al., 1985), aggression was intended to capture externalizing behaviours, such as attention-seeking, disruptive, and physically aggressive behaviours, including those captured by the construct of Conduct Disorder. Withdrawal was intended to capture overcontrolled and internalizing behaviours embodied in fearful, timid, and seclusive behaviour. Because aggression has been shown to be a stable trait associated with hostility during mother–child interactions (Bentley, 2002; Serbin et al., 1998), we hypothesized that mothers with histories of aggression would be more likely to employ intrusive strategies that leave children little opportunity to comply (e.g., physical intervention). We also expected mothers with histories of withdrawal to show a similar style of behaviour due to recent findings suggesting poor social skills (Rubin et al., 2002) and maladaptive mother–child interaction patterns in these women (Perez et al., 2005). More specifically, due to limited experiences in negotiating and asserting their needs, as well as research suggesting that parents of withdrawn children tend to exhibit an intrusive style of parenting, we expected that mothers with histories of social withdrawal would also be more likely to use intrusive request strategies that limit children's opportunities to comply. Finally, because research has shown that children's behaviour is largely influenced by interactions with their parents and that maladaptive parenting behaviours play an important role in the maintenance of children's problem behaviour (Calzada, Eyberg, Rich, & Querido, 2004), we anticipated that children of women with childhood histories of aggression or withdrawal would display lower levels of compliance and higher levels of defiance.

2. Method

2.1. Participants

The participants in this study represent a subsample of the Concordia Project. This project originated in 1976, when 4109 students in grades 1, 4, and 7 were recruited from French language public schools in inner-city, low socio-economic

neighbourhoods in Quebec, Canada (Ledingham, 1981; Schwartzman et al., 1985). 1774 children (864 boys; 910 girls) who met inclusion criteria were screened for aggression and social withdrawal by means of a French translation of the Pupil Evaluation Inventory (PEI; Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976), a peer-nomination technique that compares children to their classmates. The PEI contains 34 items loading onto three factors: Aggression, Social Withdrawal, and Likeability. For example, Aggression items included statements such as "those who start a fight over nothing" and "those who are mean and cruel to other children", and Withdrawal items included statements such as "those who have very few friends" and "those who aren't noticed much". Children were asked to nominate up to 4 boys and (separately) 4 girls who best matched each item on the PEI. Boys and girls were rated separately in the class in different administrations, and both same- and opposite-sex nominations were considered. Total nomination scores for each factor were converted to *z*-scores for each sex within each class to remove the effects of sex differences in rates of aggression and withdrawal and the effects of differences in class size. Percentile cutoffs were used to establish which children had received extreme scores on aggression and withdrawal, compared with age- and sex-matched peers, allowing for each child to be scored according to relevant norms for his or her own age and sex. Children were considered to be at high psychosocial risk, relative to same-sex classmates, if they obtained extreme scores on dimensions of aggression (above the 95th percentile), withdrawal (above the 95th percentile), or both (above the 75th percentile); comparison children from the same schools and neighbourhoods, who did not obtain extreme aggression or withdrawal scores, were also included. A more detailed description of the original methodology can be found in Schwartzman et al. (1985).

Seventy-four women from the Concordia Project participated in the current study with their preschool-aged children (34 boys, 40 girls). The 74 mothers who participated in the current study (12 Aggressive; 15 Withdrawn; 13 Aggressive–Withdrawn; 34 Comparison) were selected because they had children between the ages of 2 and 6 years at the time of data collection. These women were a subset of a larger sample of original female participants from the Concordia Project ($n = 114$). A comparison of the 74 mothers in the current study with the 114 mothers in the larger project was conducted in order to ensure their representativeness. *Z*-tests indicated that there were no significant differences between the samples on any of the variables tested.

The 74 children ranged in age from 2.00 to 6.06 years ($M = 4.03$, $SD = 1.21$). At the time of testing, mothers' ages ranged from 25.71 to 34.52 years ($M = 30.65$, $SD = 2.57$). Mothers had attained 6 to 17 years of schooling ($M = 11.26$, $SD = 2.22$), and their occupational prestige ratings, assessed by the Prestige measure (Rossi, Sampson, Bose, Jasso, & Passel, 1974), ranged from 184.00 to 656.00 ($M = 314.76$, $SD = 97.26$). The mean prestige rating corresponds to the following types of jobs: filing clerk, cashier, and repairman (Nock & Rossi, 1979).

The power of the analyses was maximized by treating mothers' childhood aggression and withdrawal scores as dimensions, rather than categorical predictors. Mothers in the present sample corresponded to the full-range of aggression and withdrawal scores. It was important to ensure that the families of women with high aggression or withdrawal scores were similar to the comparison families in our sample with respect to other control variables, therefore, the following socio-demographic variables were compared: maternal education, occupational prestige, and age at birth of first child, as well as maternal and child age at the time of testing. The results indicated no significant differences in any of these variables, except that comparison mothers ($M = 11.88$, $SD = 2.38$, $N = 34$) acquired on average 1.16 more years of education than high-risk mothers ($M = 10.73$, $SD = 1.95$, $N = 40$), $t(72) = -2.30$, $p = .02$ (two-tailed).

2.2. Procedure

This study was part of a larger study consisting of interviews, questionnaires, and naturalistic observations taking place over two home visits. Participants were contacted by telephone in order to arrange appointments, briefly describe the study and its procedures, and administer the Demographic Information Questionnaire (DIQ). Mothers were informed that they would be paid $80 (Canadian) upon completion of all of the visits and questionnaires.

Each visit lasted approximately 3 h, and was carried out by one experimenter (M.A. level mental heath professional) and one research assistant/graduate student, both of whom were blind to the mothers' childhood risk status. First, the experimenter explained the overall procedure to the mother, and asked her to sign an informed consent form. Next, mothers and their children were asked to play on a mat that was placed on the floor of a room in their home. Toys (a tea-set, a telephone, a doll, three books, and some blocks) were laid out on the mat according to a standardized arrangement. Mother–child interactions were videotaped using 8 mm videotapes and a Sony Video 8AF camera (with a directional microphone) that was fixed on a tripod. The experimenters left the room for the duration of the interactions.

The current study focused on three naturalistic mother–child interactions that took place over the course of the two home visits: a 4- or 7-minute puzzle task (for children aged 24 to 42 months and 43 to 72 months, respectively), a 4-minute free play, and a 3-minute command task. These tasks were based in part on tasks employed in other studies investigating maternal requests and child compliance (e.g., Smith, Calkins, Keane, Anastopoulos, & Shelton, 2004), and have been reliably used in past studies with the Concordia Project (Karp, Serbin, Stack, & Schwartzman, 2004; Saltaris et al., 2004). For the puzzle task, mothers were instructed to work with their children on a set of standardized age-appropriate puzzles. With respect to the free play, mothers were instructed to play with their children as they normally would. For the command activity, mothers were instructed to ask their children to perform several tasks. Mothers were given a list of sample commands (e.g., "stand up", "pick up the book") and were asked to use at least four of the suggested commands during the span of the 3-minute session. Mothers were asked to remain with their child on the mat throughout each of the interactions. All instructions and interactions took place in French.

2.3. Measures

2.3.1. Demographic Information Questionnaire (DIQ)

This measure was used to gather socio-demographic information about the participating families, such as mothers' current age and the age at the birth of the first child, as well as mothers' marital status, number of years of education, occupational status, financial status, and custody status (if applicable). The DIQ has been used in past studies of the Concordia Project and has been shown to be an effective measure of participant demographics (e.g., Serbin et al., 1998).

2.3.2. Request/Compliance Coding Scheme (RCCS)

The RCCS (Grunzeweig, 2003) is an observational measure of maternal request strategies and child compliance and noncompliance behaviours, developed for the purposes of this study based in part on existing literature (e.g., Crockenberg & Litman, 1990; Donovan et al., 2000; Kuczynski & Kochanska, 1990). The objective of this relational coding system is to describe the essential features of an exchange in which a mother solicits her child's compliance with a given request. According to the RCCS, the coder examined each utterance spoken by the mother and discerned whether or not it was a request. If the utterance was determined to be a request, it was coded for its status (i.e., initial request, repetition, or no opportunity to comply) and for its strategy (i.e., guidance, control, or physical intervention). Following each request, the child's behaviour was coded as compliance or noncompliance. If the response was noncompliant, the type of noncompliance strategy employed was coded (i.e., self-assertion, passive noncompliance, or defiance). If the child's behaviour did not fall into one of the above categories, it was coded as "no code". All codes were mutually exclusive within their respective categories. Operational definitions of the codes can be found in Table 1.

Table 1
Operational definitions for the Request/Compliance Coding Scheme (RCCS).

Code	Description	Examples
Request status		
Initial request	This code marks the first time a mother requests that her child complete a given task.	"Put the puzzle piece here"
Repetition	This code is used when the request that a mother is making is the same as (or a close variation of) her previous request.	"Please put it here"; "Can you put it here?"; "I'd like you to put the piece here"; or "It goes here".
No opportunity to comply	This code is used when mother repeats her request less than one second following her initial request.	"Get the book!" (0.5 s elapse) "Get the book!"
Request strategy		
Guidance	This code represents the least intrusive way that a mother can make a request. Guidance requests can take many forms (e.g., suggestions, indirect commands, questions, prompts).	"Could you bring me the book?"; "I'd like you to brush the doll's hair"; "The teapot goes here"; or "Why don't you play with the blocks?"
Control	This code applies to requests that are phrased in the imperative tense. They may or may not include the word "please".	"Turn the page"; "Please stand up"; or "Don't throw blocks".
Physical intervention	This code represents the most intrusive type of request. It is used when a mother makes a verbal request and intervenes physically, and can take 3 forms: (1) A mother uses force to ensure task completion; (2) A mother makes a request and immediately completes it herself; (3) A mother makes a request and physically guides her child to complete the task.	(1) "Stay on the mat", while holding the child's hand so that he cannot leave; (2) "Get the doll", while simultaneously getting the doll; (3) "Turn the puzzle piece around", while placing her hand on the child's hand and guiding the child's movements.
Child behaviour		
Compliance	The child performs the requested task. This code is also used when a child attempts to comply but does so incorrectly. The task must be completed within 5 s of initiating compliance.	A child brings his/her mother a book she requested.
Self-assertion	The child does not comply with the request, but responds to his/her mother verbally in a non-negative tone. This code reflects when a child is noncompliant, but is addressing the request and/or asserting his/her own interests. Self-assertiveness may take many forms (e.g., simple refusal, requesting an explanation or clarification, negotiating).	"No"; "Why?"; "I'll do it after I finish my castle".
Passive noncompliance	This code is used when child does not comply, but does not overtly refuse either. The child typically ignores his/her mother while maintaining a non-negative attitude.	The child walks away; plays with the toys; continues what he/she was doing; talks about something else.
Defiance	This code represents the least skilful form of noncompliance and is used when the child overtly refuses to comply (although not necessarily verbally) with an angry, or generally negative affect.	The child yells, cries, stomps his/her feet, throws a toy, etc.
No code	This code is used when the above codes can not be used to describe the child's behaviour because: (1) it was not clear whether or not the child complied; (2) the mother intervened physically; (3) compliance was not possible during the duration of the task.	(1) The child's behaviour is obstructed from view; (2) the mother completed the request herself; (3) "You should tell your father!", but the father is not present.

2.4. Observational coding

A time line (that indicated hours, minutes, seconds, and frames per second) was edited onto the videotapes of the interactions. The start and stop times for each interaction were recorded in order to calculate the exact duration of the session in minutes, rounded to the nearest hundredth. The behaviours of the mothers and their children during each of the three play contexts in which they interacted were then coded using the RCCS.

2.4.1. Reliability

An undergraduate research assistant, who was blind to the study's hypotheses as well as group membership, acted as a secondary coder. In order to assess inter-rater reliability, 22% of the sample was randomly selected and double-coded. Reliability was calculated on five measures: (1) presence of request, (2) time of request, (3) request status, (4) request strategy, and (5) child behaviour. The first measure indicated that 90% of the requests that were coded by the first coder were also coded by the secondary coder. The second measure ensured that 95% of the time, the coders agreed on the times of the requests within a .5-second interval. Percentage agreement reliability (*PA*; agreements divided by total agreements plus disagreements) and Cohen's kappa coefficients (r_k) were calculated to assess the reliability of the final three measures. Cohen's kappa tabulates the actual inter-rater agreement as a proportion of potential agreement following a correction for chance agreement (Kaplan & Saccuzzo, 2001). The values obtained for request status, request strategy, and child behaviour, respectively, were: $r_k = .76$, $PA = 90\%$; $r_k = .87$, $PA = 94\%$; $r_k = .65$, $PA = 75\%$. These values range from satisfactory to excellent (Cohen, 1960).

2.4.2. Data reduction

After coding was completed, the coding sheets were reviewed, and a list of all possible combinations of request status, request strategy, and child behaviour (e.g., initial-guidance-compliance, or repeat-control-defiance) was generated. Next, for each dyad, during each context, the frequency of each sequence was recorded. Afterwards, some of the frequencies were summed to obtain aggregate frequencies (e.g., frequency of guidance requests). Due to the fact that there were few differences in behaviours between contexts, behaviour frequencies were collapsed across contexts. All of the frequencies were then converted to proportions. Some proportions were significantly skewed; however, these scores were not transformed as they represented behaviours that tend to be infrequent in the natural environment and they were skewed in the anticipated direction.

Table 2 includes the means and standard deviations for the following maternal and child variables in each of the three play contexts: the rate of maternal requesting, the proportions of behaviours representing maternal request status and strategy, and the proportions of behaviours representing child compliance and noncompliance.

3. Results

Hierarchical multiple regressions were used to evaluate the contributions of maternal childhood histories of aggression and withdrawal to the prediction of maternal requests. Regressions were also used to evaluate the contributions of maternal childhood histories of aggression and withdrawal, and maternal request strategies, to the prediction of child compliance and noncompliance. Maternal education, as well as child age and sex, were included as predictors in order to control for the effects of these variables.

In each of the hierarchical regression analyses, maternal childhood risk factors were entered first, followed by maternal and child demographic variables. For the regressions predicting child compliance and noncompliance behaviours, maternal request variables were entered in the next step. In order to maximize power of the analyses, only those request variables that correlated

Table 2
Means and standard deviations for proportions of maternal request strategies and child compliance and noncompliance ($N = 74$).

	Puzzle task		Free play		Command task	
Behaviour	*M*	*SD*	*M*	*SD*	*M*	*SD*
Maternal						
Requests per minute	5.21	3.17	2.80	2.06	9.00	3.41
Status						
Initial	.79	.12	.78	.21	.65	.14
Repetition	.21	.12	.20	.17	.35	.14
No opportunity	.07	.08	.04	.08	.03	.04
Strategy						
Guidance requests	.31	.19	.34	.26	.31	.18
Control requests	.67	.19	.60	.27	.65	.18
Physical interventions	.03	.05	.04	.11	.04	.06
Child						
Compliance	.79	.15	.62	.30	.56	.22
Noncompliance	.21	.15	.34	.28	.44	.22
Self-assertion	.28	.32	.38	.36	.39	.26
Passive noncompliance	.59	.38	.38	.36	.58	.25
Defiance	.02	.08	.02	.09	.02	.08

significantly with child behaviour variables were entered (i.e., physical interventions, repetitions, and "no opportunity" requests). Finally, previous research from the Concordia Project has indicated that the presence of both childhood aggression and social withdrawal together may be more strongly predictive of negative outcomes than aggression or withdrawal alone. Therefore, the interaction between levels of aggression and social withdrawal was entered in the final step, in order to consider the influence of the main effects (i.e., aggression and withdrawal) first (Cohen & Cohen, 1983). In order to minimize the number of predictors entered into the analyses, this step was removed when the interaction term was not found to be a significant predictor. However, given that the interaction term was never found to be significant, it was dropped from the analyses and will not be discussed. A correlation matrix of the variables examined in the regression analyses can be found in Table 3.

3.1. Maternal requests

In the multiple regression analysis of mothers' childhood aggression and withdrawal as predictors of mothers' average rate of requesting (RPM), the hierarchical regression accounted for 33.3% (28.4% adjusted) of the total variance (Table 4). At step 1, maternal childhood Withdrawal was significant, accounting for 13% of the variance. Mothers with histories of withdrawal made more requests per minute ($p < .003$). In step 3, Child age ($p < .0001$) was significant, accounting for 19% of the variance.

In the regression examining mothers' childhood aggression and withdrawal as predictors of average levels of repeated requests, the hierarchical regression accounted for 33.5% (28.6% adjusted) of the total variance (Table 4). Entered in Step 1, both childhood Aggression ($p < .033$) and Withdrawal ($p < .0001$) significantly predicted levels of repeated requests and accounted for 22.4% of the variance. Age, entered in Step 3, emerged as another significant predictor ($p < .003$), accounting for 10.7% of the variance. Mothers of younger children, and mothers with higher levels of childhood aggression and withdrawal, made more repeated requests.

In the regression examining mothers' childhood aggression and withdrawal as predictors of average levels of "no opportunity" requests, the hierarchical regression accounted for 10.1% (3.5% adjusted) of the total variance (Table 4). In Step 1, childhood Withdrawal predicted levels of no opportunity requests and accounted for 8% of the variance. Mothers with higher levels of withdrawal had higher levels of "no opportunity" requests ($p < .02$).

The regressions examining mothers' childhood aggression and withdrawal as predictors of average levels of guidance requests, as well as of control requests, did not reach significance. In contrast, the examination of mothers' childhood aggression and withdrawal as predictors of average levels of physical intervention requests was statistically significant. The hierarchical regression accounted for 23.9% (18.4% adjusted) of the total variance (Table 4). At Step 1, maternal childhood Withdrawal significantly predicted levels of physical intervention requests and accounted for 9.5% of the variance. Mothers with higher levels of Withdrawal were likely to make more physical intervention requests ($p < .008$). Child Age ($p < .013$) and Sex ($p < .008$), both entered in Step 3, predicted physical requests and together accounted for 14.4% of the variance. Mothers made more physical intervention requests with younger children, and with boys.

3.2. Child compliance and noncompliance

The hierarchical regression examining the relationship between mothers' childhood levels of Aggression and Withdrawal, maternal requests, and average levels of child Compliance with maternal requests accounted for 39.4% (32% adjusted) of the total variance (Table 5). Maternal childhood Withdrawal, entered in Step 1, significantly predicted average levels of child compliance

Table 3
Intercorrelations among the variables examined in the regression analyses ($N = 74$).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Child age		−.06	.02	.10	−.03	.11	−.12	.18	−.25*	−.28*	−.07	.15	.34**	−.45***	−.20
2. Child sex			.11	.12	−.09	.11	−.02	.13	−.29*	−.13	−.10	.19	.09	−.12	−.17
3. Maternal education				−.22	−.16	−.09	.14	−.14	−.08	.20	.09	.14	−.13	−.09	.01
4. Maternal aggression					−.07	.48***	−.07	.10	.03	.20	.09	.07	.16	−.13	−.07
5. Maternal social withdrawal						.18	−.09	−.06	.30**	.42***	.26*	−.33**	−.19	.22	.19
6. Aggression × withdrawal							−.11	.09	.08	.12	−.05	.02	.02	−.05	.03
7. Guidance requests								.87***	−.20	−.23*	−.34**	.11	−.002	.06	−.03
8. Control requests									−.13	.12	.29*	.12	.13	−.10	−.17
9. Physical interventions										.44***	.25*	−.37***	−.30**	.25*	.62***
10. Repeated requests											.64***	−.57***	−.21	.42***	.16
11. No opportunity requests												−.32**	−.11	.06	.12
12. Compliance													.08	−.31**	−.16
13. Self-assertion														−.71***	−.28*
14. Passive noncompliance															.06
15. Defiance															

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

Table 4
Hierarchical regression analyses predicting maternal requests ($N = 74$).

	Requests per minute					Repeated requests					No opportunity requests					Physical requests				
Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}	Beta	sr^2	t	R^2_{ch}	F_{ch}	Beta	sr^2	t	R^2_{ch}	F_{ch}	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				.13	1.53 **				.22	10.27 ***				.08	3.18 *				.10	3.72 *
Childhood aggression	.14	.02	1.22			.23	.05	2.18 *			.11	.01	.99			.05	.003	.46		
Childhood withdrawal	.34	.12	3.04 **			.43	.18	4.12 ***			.27	.07	2.39 *			.31	.10	2.72 **		
Step 2				.02	1.675				.004	.319				.006	0.46				0.001	.05
Childhood aggression	.10	.01	.89			.21	.04	1.98			.10	.01	.81			.05	.002	.39		
Childhood withdrawal	.31	.10	2.78 **			.42	.17	3.94 ***			.26	.06	2.22 *			.01	.00	2.62 *		
Maternal education	− .15	.02	− 1.29			− .06	.004	− .57			− .08	.01	− .68			− .03	.001	− .23		
Step 3				.19	.949 ***				.11	5.49 **				.01	.40				.14	6.43 **
Childhood aggression	.17	.03	1.67			.27	.07	2.58 *			.12	.01	.97			.12	.01	1.06		
Childhood withdrawal	.30	.08	2.93 **			.41	.16	4.06 ***			.25	.06	2.14 *			.28	.08	2.61 *		
Maternal education	− .11	.01	− 1.01			− .03	.001	− .28			− .07	.004	− .54			.02	.0004	.21		
Child age	− .41	.16	− 4.07 ***			− .31	.10	3.12 **			− .08	.01	− .70			− .27	.07	− 2.54 *		
Child sex	− .19	.04	− 1.90			− .14	.02	− 1.38			− .09	.01	− .76			− .30	.08	− 2.74 **		
	$R = .58$		$R^2_{adj} = .31$		$F = 6.79$ ***	$R = .58$		$R^2_{adj} = .29$		$F = 6.86$ ***	$R = .32$		$R^2_{adj} = .04$		$F = 1.53$	$R = .40$		$R^2_{adj} = .18$		$F = 4.28$ **

Note. sr^2 = squared semipartial correlation; R = R value in final step; R^2_{adj} = adjusted R^2 in final step; F = F value in final step.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

Table 5
Hierarchical regression analyses predicting child compliance and noncompliance ($N = 74$).

	Compliance					Self-assertion					Passive noncompliance					Defiance				
Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}	Beta	sr^2	t	R^2_{ch}	F_{ch}	Beta	sr^2	t	R^2_{ch}	F_{ch}	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				.11	4.41*				.06	2.25				.06	2.29				.04	1.46
Childhood aggression	.04	.002	.38			.15	.02	1.28			−.12	.01	−.99			−.06	.004	−.50		
Childhood withdrawal	−.33	.11	−2.91**			−.18	.03	−1.59			.21	.04	1.82			.19	.04	1.59		
Step 2				.01	0.83				.02	1.23				.00	.02				.001	.06
Childhood aggression	.07	.005	.58			.12	.01	.90			−.12	.01	−.99			−.05	.003	−.43		
Childhood withdrawal	−.31	.10	−2.70**			−.21	.04	−1.76			.21	.04	1.75			.19	.04	1.60		
Maternal education	.11	.01	.891			−.13	.02	−1.11			−.02	.0004	−.16			.03	.001	.25		
Step 3				.04	1.79				.12	5.14**				.20	9.27***				.06	2.42
Childhood aggression	.03	.001	.24			.06	.004	.56			−.05	.003	−.48			−.01	.001	−.04		
Childhood withdrawal	−.30	.08	−2.62*			−.20	.04	−1.77			.19	.04	1.82			.18	.03	1.52		
Maternal education	.08	.005	.67			−.16	.03	−1.42			.02	.004	.17			.06	.004	.52		
Child age	.15	.02	1.33			.34	.12	3.13***			−.44	.19	−4.22***			−.21	.04	−1.77		
Child sex	.17	.03	1.46			.11	.01	.97			−.13	.01	−1.19			−.17	.03	−1.45		
Step 4				.23	8.21***				.03	.78				.12	4.31				.31	11.58***
Childhood aggression	.19	.03	1.80			.09	.006	.78			−.16	.02	−1.48			−.04	.001	−.34		
Childhood withdrawal	−.04	.002	−.37			.13	.01	−1.03			.06	.003	.49			.06	.003	.54		
Maternal education	.07	.005	.69			−.16	.02	−1.39			.01	.001	.14			.05	.002	.45		
Child age	−.07	.004	−.69			.29	.07	2.34*			−.31	.07	−2.82**			−.09	.006	−.80		
Child sex	.06	.003	.53			.05	.003	.42			−.09	.01	−.81			.003	.0000	.03		
Physical requests	−.12	.01	−1.02			−.18	.02	−1.37			−.02	.004	−.19			.66	.31	5.87***		
Repeated requests	−.61	.15	−3.98***			−.02	.004	−.14			.54	.12	3.53**			−.21	.02	−1.38		
No opportunity requests	.11	.006	.86			−.02	.0004	−.15			−.31	.05	−2.41*			.07	.003	.56		
	$R = .63$		$R^2_{adj} = .23$		$F = 5.29$***	$R = .47$		$R^2_{adj} = .13$		$F = 2.16$*	$R = .62$		$R^2_{adj} = .31$		$F = 5.08$***	$R = .65$		$R^2_{adj} = .34$		$F = 5.79$***

Note. sr^2 = squared semipartial correlation; R = R value in final step; R^2_{adj} = adjusted R^2 in final step; F = F value in final step.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

with maternal requests, accounting for 11% of the variance. Mothers with higher childhood levels of withdrawal had children who complied less with maternal requests ($p < .005$). Withdrawal remained significant until Step 4, at which point Repeated requests was the only significant variable, accounting for 23% of the variance. The more repeated requests a mother made, the less her child complied ($p < .0001$).

The regression examining mothers' childhood Aggression and Withdrawal and maternal request strategies as predictors of average levels of self-assertion accounted for 22.5% (13% adjusted) of the total variance (Table 5). Only child Age, entered in Step 3, emerged as a significant predictor, accounting for 12.1% of the variance. Older children exhibited higher levels of self-assertion ($p < .003$).

In the regression examining mothers' childhood Aggression and Withdrawal and maternal request strategies as predictors of average levels of passive noncompliance, the hierarchical regression accounted for 38.5% (30.9% adjusted) of the total variance (Table 5). Child Age, entered in Step 3, emerged as a significant predictor, accounting for 20.1% of the variance. Younger children exhibited higher levels of passive noncompliance ($p < .0001$). Child age remained significant in Step 4, when Repeated and No opportunity requests also emerged significant, accounting for 12.2% of the variance. Children were more likely to display passive noncompliance when their mothers employed more Repeated requests ($p < .001$) and less No opportunity requests ($p < .019$).

In the regression examining mothers' childhood Aggression and Withdrawal and maternal request strategies as predictors of average levels of defiance, the hierarchical regression accounted for 41.6% (34.4% adjusted) of the total variance (Table 5). Only physical intervention requests, entered in Step 4, emerged as a significant predictor, accounting for 31.2% of the variance. Mothers who demonstrated higher levels of physical intervention had children who displayed higher levels of defiance ($p < .0001$).

4. Discussion

The current study examined a high-risk sample of women interacting with their preschool-aged children in order to investigate the effects of mothers' childhood histories of aggression and social withdrawal on current measures of mothers' request strategies and their children's compliance and noncompliance. The results partially supported the hypotheses and provided evidence linking mothers' histories of childhood aggression and social withdrawal to children's noncompliance. The relationships between children's behavioural styles and subsequent parenting strategies offer important contributions to the literature on the long-term sequelae of behaviour in early life. Furthermore, the findings replicate previous research on developmental trends in children's noncompliant behaviours.

We expected maternal childhood histories of aggression and social withdrawal to predict mothers' patterns of requesting. Withdrawal was found to predict more behaviours than aggression (aggression only predicted repeated requests), which was surprising given that maternal childhood aggression has figured prominently as a predictor of parenting and child behaviours in many studies employing the Concordia sample (e.g., Saltaris et al., 2004; Serbin et al., 1998; Serbin et al., 2004; Stack, Serbin, Grunzeweig et al., 2006; Stack, Serbin, & Grunzeweig et al., 2005; Stack, Serbin, Schwartzman et al., 2005), as well as other research samples (e.g., Conger et al., 2003; Thornberry, Hops, Conger, & Capaldi, 2003; Zoccolillo, Paquette, Azar, Côté, & Tremblay, 2004). However, apart from the Concordia project, few studies have examined the correlates or outcomes of withdrawn behaviour per se, and even fewer studies have compared the outcomes of aggressive behaviour with those of withdrawn behaviour. Only a handful of studies on the Concordia sample found maternal childhood withdrawal to predict behaviour during mother–child interactions, and some of these studies revealed that histories of withdrawal only predicted current behaviour in mothers who also displayed high levels of childhood aggression (e.g., Bentley, 2002; Din, De Genna, Stack, Serbin, Schwartzman, & Ledingham, 2005; Martin, 2007).

The finding that mothers with histories of childhood aggression demonstrated an increased likelihood of repetitions is consistent with the literature that shows that aggression is often associated with impulsivity and perseverative behaviour (Bierman, Bruschi, Domitrovich, Fang, Miller-Johnson, & the Conduct Problems Prevention Research Group, 2004; Séguin, Arseneault, Boulerice, Harden, & Tremblay, 2002), which may explain why the mothers in the present study tended to repeat their requests. We also found that mothers with histories of childhood social withdrawal demonstrated a more intrusive pattern of requesting than other mothers. These mothers made more requests, and were more likely to employ physical interventions and repeat their requests, often leaving their children minimal or no opportunity to comply. This intrusive parenting style, which may seem counterintuitive in the context of social withdrawal, might be explained by cumulating factors beginning in childhood. First, withdrawn mothers may have resorted to intrusive techniques due to a lack of expertise in socially appropriate communication skills, possibly resulting from limited social interaction over time (Rubin et al., 2002). Second, withdrawal is often associated with internalizing behaviour problems. By internalizing their emotions, these individuals may be resisting expressing their feelings. However, these feelings may be inadvertently negatively expressed and/or manifested in other (often unrelated) contexts, in the form of intrusive family interactions. Third, withdrawn behaviour and internalizing problems are often associated with peer difficulties. Through maladaptive peer interactions, withdrawn mothers may have learned socially inappropriate strategies for getting their needs met. Fourth, research has shown that parents of withdrawn children tend to exhibit overcontrolling, coercive, and power-assertive styles of parenting (Rubin, Burgess, Hastings, 2002; Rubin, Stewart, & Coplan, 1995). Furthermore, having an overcontrolling parent has been shown to exacerbate the social deficits exhibited by withdrawn children (Rubin et al., 2002). Thus, mothers with histories of childhood withdrawal may have been modelling their intrusive requests after their parents' patterns of behaviour, in an attempt to compensate for their own relative social ineptitude. Fifth, the parents of withdrawn children may be demonstrating intrusive parenting styles in a misguided attempt to protect

their own children from adverse experiences. This attempt is often counter-productive in that these children subsequently have less opportunities to learn to solve their own social problems, thus leading them to become more withdrawn and/or experience more negative social situations (Coplan, Prakash, O'Neil, & Armer, 2004; Rubin et al., 2002).

We also expected mothers' histories of aggression and social withdrawal to predict children's patterns of compliance and noncompliance. While we did not find any direct link from maternal childhood histories to children's current behaviour, we did find evidence for an indirect link. More specifically, mothers with histories of social withdrawal employed intrusive request strategies (e.g., repetitions with and without opportunity to comply, physical interventions), and these strategies collectively predicted children's noncompliance, and aversive behaviours in particular (i.e., passive noncompliance, defiance). Similarly, having a childhood history of aggression was found to predict repeated requests, which subsequently predicted increased noncompliance (in particular, passive noncompliance). These indirect routes are consistent with social learning theory; mothers who model aversive behaviour are likely to have children who behave similarly (Conger et al., 2003). Interactions such as these are likely to escalate into coercive cycles, and increase the probability that children will behave this way again, both in and outside of the family environment (Patterson, 2002; Patterson et al., 1989; Snyder et al., 2003).

Moreover, the mode of intrusive requesting displayed by withdrawn mothers has implications for the dyads' relationship expectancies, and for future interactions. Requests that leave children little opportunity to comply suggest that mothers expect their children not to comply. Moreover, if children expect their mothers to continually make such requests, they are less likely to comply with an initial request, thereby perpetuating a self-fulfilling prophecy. Concordantly, such noncompliant behaviour is likely to reinforce mothers' intrusive styles of requesting, and subsequently elicit future cycles of escalating coercive behaviour (Patterson, 2002; Patterson et al., 1989; Snyder et al., 2003). It is therefore not surprising that the mothers in the present study who did not provide their children with sufficient opportunity to comply (due to ill-timed repetitions and physical interventions) were more likely to have children who displayed their noncompliance in aversive ways. Moreover, this pattern underscores the dynamic and bidirectional nature of parent–child interactions, in that parents' and children's behaviours reflect how they interpret each other's actions, infer meaning from their exchanges, and predict and adjust to each other's perspectives and goals (Kuczynski & Parkin, 2007). Taken together, these findings suggest a possible cyclical pathway, by way of maladaptive and intrusive parenting and aversive child behaviour, for the transfer of risk in vulnerable populations and the continuity of behaviour across generations (Serbin & Karp, 2003; Thornberry et al., 2003). Future research should explore the bidirectional, transactional nature of these mother–child interactions, especially in light of intergenerational continuity of maladaptive behaviour. Furthermore, future research should investigate whether the problems seen in the offspring of withdrawn mothers, or mothers who display intrusive parenting styles, are specific to noncompliance with maternal requests, or whether they can be generalized to other areas of functioning as well.

Not only did we find that children's noncompliance strategies were predicted by mothers' request strategies, but the results also revealed that older children were more likely to exhibit self-assertion and less likely to exhibit passive noncompliance in response to maternal requests. This finding replicates previous research and converges with the developmental interpretation of noncompliance (e.g., Dix et al., 2007; Kuczynski & Kochanska, 1990; Kuczynski et al., 1987); as preschoolers age, due in part to developing language skills, their rates of noncompliance remain relatively stable, while their ability to skillfully assert their autonomy increases (Donovan et al., 2000; Kuczynski & Kochanska, 1990).

Taken together, findings from the current study elucidate some potential pathways by which mothers' socialization strategies and/or children's behavioural development could go awry. Specifically, the results elucidate the long-term sequelae of childhood withdrawal, a phenomenon that had long been neglected in the developmental literature (Rubin, Chen, McDougall, Bowker, & McKinnon, 1995; Rubin & Coplan, 2004). Moreover, the identification of a trajectory from childhood withdrawal to maladaptive parenting to defiant behaviour in the second generation marks a noteworthy discovery in the literature on the intergenerational transfer of risk. It is important to note that although the analyses and predictors employed in this study were carefully selected in order to maximize the power of the results, given the relatively smaller sample size, the generalizability of the findings is somewhat limited. Although many of the findings were consistent with previous literature, replication of the original contributions of this study with a larger sample size is warranted. It is also important to consider the possibility of genetic transmission in order to explain the continuity of risk across generations observed in this sample. For example, it may be that the children of socially withdrawn mothers are more likely to be withdrawn themselves, due in part to temperamental heritability. If so, withdrawn mothers may be employing more intrusive strategies in response to their children's behavioural styles (Rubin et al., 2002). Future research should explore the genetic mechanisms underlying these behavioural patterns. Finally, it is important to consider any factors that may mediate the relationship between childhood behaviour and subsequent parenting or child outcomes. For example, the peer difficulties often associated with childhood aggression or withdrawal may explain why girls who demonstrate difficulties with peer interactions might exhibit problems interacting with their children when they become mothers. Future research should explore this possibility.

In light of the current findings, it is important to recognize that risk is by definition probabilistic, and that prospective longitudinal research, such the Concordia Project, has shown that problematic outcomes are not guaranteed in high-risk populations (Serbin et al., 2004; Serbin, Stack, & Schwartzman, 2000; Werner, 1990). Children from high-risk backgrounds will demonstrate a range of outcomes in adaptation and competence across the lifespan, and some individuals from high-risk backgrounds are likely to develop well, despite poor prospects in early development. Past findings from the Concordia project have shown that increased years of maternal education, as well as the presence of friendships and stable parental figures, have served to buffer against maladaptive outcomes in offspring. Findings from the current study suggest that the parent–child relationship may serve as a protective mechanism, as well as other factors in the relationship, including parenting strategies. Moreover, these factors

can apply not only to children with histories of aggression and withdrawal, but also to a broader group of children with social or relationship difficulties. Studies such as this one can be used to identify children and parents who may be at risk for future problems. By increasing our understanding of the early underpinnings of both adaptive and maladaptive development, preventative interventions can be designed to target parents and children at critical points in development in order to increase the likelihood that individuals at risk will emerge resilient.

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Appendix B

Consent Form

L'INDIVIDU DANS SON MILIEU: Les parents et leurs enfants

Directeurs du projet: -Lisa A. Serbin, Ph.D.
-Dale M. Stack, Ph.D.

Numéro d'identification:

Formulaire de consentement

Je, soussigné(e), autorise les chercheurs du projet *L'individu dans son milieu* de l'université Concordia à rencontrer mon enfant _____ à l'école, en deux sessions, durant la période de classe. Je comprends que mon enfant remplira des tests de fonctionnement intellectuel et académique ainsi que des questionnaires sur son comportement et son tempérament. J'autorise également les chercheurs à recueillir des informations sur la vie scolaire de mon enfant de la part de son professeur et à avoir une copie du dernier bulletin de l'année en cours. Finalement, lors d'une troisième visite, je consens à rencontrer les chercheurs de l'université Concordia à la maison avec mon enfant afin de remplir des questionnaires additionnels portant sur notre vie familiale et de recueillir des échantillons de salive sur moi-même, lors de la rencontre, et sur mon enfant, lors de la rencontre et pendant deux jours de la semaine. J'accepte aussi d'être filmé(e) avec mon enfant lors d'une session incluant un jeu et des discussions portant sur des résolutions de problèmes.

Je comprends que toute l'information recueillie demeurera confidentielle et qu'elle ne servira qu'à des fins de recherche. Cependant, si après évaluation des examens votre enfant requérait une attention spéciale, les chercheurs de l'université Concordia s'engagent à faire le suivi de la rencontre afin de référer les services nécessaires.

Dans l'éventualité où j'aurais des questions concernant cette recherche, je pourrai m'adresser soit à Julie Aouad ou bien à Nadine Girouard au (514) 848-2424 extension 2254.

Nom: _____ Date:
EN LETTRES MOULÉES

Signature:

****

Nom de l'enseignant/e:
Année:
Nom du directeur/de la directrice:
Nom de l'école:
Numéro de téléphone: (_____)
code régional
Adresse:

_____
rue ville code postal

Appendix C

Protocol for mother-child interactions at middle-childhood

Mother-Child Interactions at Middle Childhood

♦ **Complete Parent-Child Conflict Questionnaires**

Mother and child are separated in order to complete the parent-child conflict questionnaire (*Potential Parent-Child Conflict Questionnaire*).

"Voici une liste de themes a propos desquels les enfants et les parents sont souvent en disaccord. Nous sommes interesses a connaitre le degree auquel votre enfant et vous (ta mere et toi) etes en desaccord sur ces sujetsa la maison. Veuillez evaluer chaque item sur une echelle variant de 0 a 5 ou = je ne suis pas en disaccord et 5 = je suis vraiment en desaccord."

♦ **Jenga (4 minutes)**

Mother and child are re-united to play Jenga. The tower should be already made (using the mold from the box)when the instructions are read. The instructions are to be read to the mother and child together.

"Voici un jeu que vous aimerez sûrement. Jenga est un jeu coopératif. Chacun votre tour, vous enlèverez un bloc de cette tour de 18 étages et vous placerez sur la tour, perpendiculaire aux blocs de l'étage juste en dessous. Terminer toujours un étage de trois blocs avant de commencer l'étage plus haut.Vous devez travailler en équipe. Le but est de bâtir une tour aussi haute que possible jusqu'à ce quelle tombe."

Provide a brief demonstration.

♦ **Conflict Resolution Task (6 minutes)**

L'assistant(e) de recherché doit avoir selectionne le sujet de discussion a partir des questionnaires remplis par la mere et par l'enfant (*Potential Parent-Child Conflict Questionnaire*). Le sujet de discussion doit etre choisi a partir du sujet que la mere et l'enfantauront evalue comme etant problematique sur l'echelle.

Choisi le sujet qui possede le score le plus eleve et ou les scores chez la mere et l'enfant sont tres semblables.

"Nous vous avons demande tout a l'heure de remplir un questionnaire afin d'identifier certains themes qui peuvent causer des problems dans votre famille. Apres avoir regarde chacune de vos reponses, j'ai choisit un sujet qui semble etre l'objet d'une mesentente entre vous et qui ferait l'objet d'une discussion interessante. Le sujet que vous avex identifie est _____. J'aimerais que vous preniez les six prochaines minutes pour discuter ensemble de ce sujet. Il est important que vous participiez tout(e) les deux. Je vais maintenant vous laisser seul(e)s et je vais revenir dans six minutes. Avez-vous des questions? Vous pouvez commencer."

Appendix D

Protocol for mother-child interactions at preschool

Mother-Child Interactions at Preschool

PUZZLES (7 MIN, 4 MIN for 12-36 cohort)

"A ce moment-là, pousse les jouets de côté et choisis un casse-tête à faire avec (ENFANT). (FOR OLDER COHORT, EXPLAIN TO MOTHER THE LABELLED BAGS OF PUZZLE PIECES AND THEIR CORRESPONDING BOARDS). Si vous finissez ce casse-tête-là, vous pouvez travailler sur un autre. Après quelques minutes, l'alarme va sonner de nouveau et je vais entrer pour m'asseoir ici." (PRESS BEEPER WHEN THEY BEGIN WORKING ON THE PUZZLE)

Interviewer comes in at the beep and waits next to the door until mother has left. Then s/he puts the barrier in place (for 12-36 mo. cohort) and sits down on a chair so as not to face child directly. Interviewer then gets busy with paperwork interacting as little as possible with child (i.e., s/he should not look at, speak to, or touch the child unless s/he is in danger of harming him/herself).

FREE PLAY (4 MIN)

" D'abord, on aimerais que tu joues avec (ENFANT) comme vous le faites d'habitude avec les jouets jusqu'à ce que tu entendes l'alarme sonner.

COMMAND TASK (3 MIN) NOT DONE FOR 12-24 MO. CHILDREN

" A ce moment-là, vous aller arrêter de jouer pour faire quelque chose de complètement différent. Pour les 2-3 prochaines minutes, j'aimerais que tu demandes à (ENFANT) de faire quelques petites tâches pour toi. Tiens, voilà une liste de tâches que tu peux utiliser (GIVE HER THE PAD). Comme tu peux voir, il y en a qui sont plus difficiles que d'autres; c'est parce qu'on visite différentes familles avec des enfants d'âges différents. Celles du début sont plus faciles que celles de la fin (READ FIRST 3 AND LAST 3). On aimerais que tu prennes au moins 4 ou 5 des tâches de la liste. Tu peux en prendre plus si tu veux et tu peux même inventer tes propres tâches, mais pourvu que (ENFANT) n'ait pas à sortir de la pièce. La liste sera placé tout près du tapis. " (PRESS BEEPER WHEN MOTHER BEGINS INTRODUCING TASK)

Appendix E

Demographic Information Questionnaire

ID #_____

L'INDIVIDU DANS SON MILIEU

Renseignements sociodémographiques

Tous ces renseignements sont traités de façon totalement confidentielle

1. **Sexe** □ M □ F

2. **Âge** _____ ans Date de naissance AN ____ MO ____ JR ____

3. **État civil**

Note: "Conjoints de fait": désigne deux personnes qui vivent ensemble comme si elles étaient mariées. Il s'agit de ton état actuel; même si tu es légalement divorcé(e) ou autre, mais que tu vis avec un(e) conjoint(e) présentement, inscris conjoint de fait.

□ Célibataire	□ Conjoint	Depuis quelle date?
□ Marié(e)	□ Séparé(e)	AN MO JR
□ Divorcé(e)	□ Veuf/veuve	_____ _____ _____

4. **Nombre d'enfants** _____

Si enceinte (ou conjointe enceinte), bébé attendu pour: ____ ____
AN MO

Sinon, prévoyez-vous avoir un enfant dans les prochains 12 mois? OUI _____
NON ____
dans les prochains 24 mois? OUI _____
NON ____

Pour <u>chaque enfant</u>:

1 - Inscrire le nom, le sexe, la date de naissance

2 - Encercler "**TE**" si c'est ton enfant (tu es le parent biologique)
"**EC**" si l'enfant du conjoint (le conjoint actuel est le parent biologique)
"**EA**" si c'est un enfant adopté /"**FA**" en foyer d'accueil et qui vit chez toi
Si "TE" et "EC" sont vrais, encercler les deux.

3 - Indiquer si l'enfant vit avec toi, **OUI** ou **NON** ou **GP** (garde partagée)

4 - Inscrire l'année scolaire (si applicable) ainsi que si l'enfant fréquente une classe ou une école spéciale.

(Si tu as plus de quatre enfants, inscrire leurs informations sur une feuille séparée.)

1 NOM SEXE AN MO JR

_____ □ M □ F ____ ____ ____

L'enfant est: TE EC EA / FA Vit avec toi: OUI □ NON □ GP □

Année scolaire: _____ Classe spéciale: _____

2 NOM SEXE AN MO JR

_____ □ M □ F ____ ____ ____

L'enfant est: TE EC EA / FA Vit avec toi: OUI □ NON □ GP □

Année scolaire: _____ Classe spéciale: _____

3 NOM SEXE AN MO JR

_____ □ M □ F ____ ____ ____

L'enfant est: TE EC EA / FA Vit avec toi: OUI □ NON □ GP □

Année scolaire: _____ Classe spéciale: _____

4 NOM SEXE AN MO JR

_____ □ M □ F ____ ____ ____

L'enfant est: TE EC EA / FA Vit avec toi: OUI □ NON □ GP □

Année scolaire: _____ Classe spéciale: _____

5. **Ta scolarité** complétée (dernière année terminée):

En quoi? (spécialisation/général): _____

Étudies-tu présentement? OUI : Temps plein □ partiel □ NON □

Si oui, quel diplôme postules-tu _____ pour quand?___/___/___/

6. **As-tu un emploi** (rappel: renseignements gardés confidentiels)?

OUI □ NON □

Occupation: _____ As-tu déjà eu un emploi?

_____

Tes tâches: _____
_____
_____

Oui □ Non □
⇓
En quoi?

Combien d'heures/sem.? _____

Pendant combien de temps?
____ an(s) ____ mois

Salaire de l'heure _____ $

Quand as-tu arrêté de travailler:
date: ____/____/
AN MO

Depuis quand es-tu à cet emploi? inscrire la date

Au cours des 12 derniers mois, as-tu bénéficié de:

Oui □ Non □ l'Assurance chômage?

Oui □ Non □ Prestations d'aide sociale?

Oui □ Non □ la CSST? (préciser:_____)

7. **Informations sur le conjoint (renseignements gardés confidentiels):**

AN MO JR

a) Son nom:_____Date de naissance ____ ____

Son occupation:_____

Ses tâches:_____

Son salaire: _____ $/ heure Nombre d'heures _____ / semaine

AN MO

Il/Elle travaille là depuis: date ____ ____

b) Au cours des 12 derniers mois, a-t-il/elle bénéficié de:

Oui □ Non □ l'Assurance chômage?

Oui □ Non □ Prestations d'aide sociale?

Oui □ Non □ la CSST? (préciser:_____)

c) Sa scolarité complétée (dernière année terminée):
En quoi? (spécialisation/général):_____

Étudie-t-il (elle) présentement? OUI : Temps plein □ partiel □ NON □

Si oui, diplôme postulé?_____ pour quand? (date) ____/____/

8. **Informations sur le père\la mère de tes enfants (si n'habite pas avec toi)**

AN MO JR

a) Son nom:_____ Date de naissance ____ ____

Son occupation:_____

Ses tâches:_____

Son salaire: _____ $/ heure Nombre d'heures _____ / semaine

AN MO

Il/Elle travaille là depuis: date ____ ____

b) Au cours des 12 derniers mois, a-t-il/elle bénéficié de:

Oui □ Non □ l'Assurance chômage?

Oui □ Non □ Prestations d'aide sociale?

Oui □ Non □ la CSST? (préciser:_____)

c) Sa scolarité complétée (dernière année terminée):
En quoi? (spécialisation/général):_____

Étudie-t-il (elle) présentement? OUI : Temps plein □ partiel □ NON □

Si oui, diplôme postulé?_____ pour quand? (date) ____/____/

9. **Disponibilité pour l'entrevue**: un bloc de 2-3 heures

□ Le matin □ L'après-midi
□ Le soir □ La fin de semaine

10. **Je préfère aller à** _____ Guy et Maisonneuve (centre-ville)
_____ 7141 Sherbrooke ouest (N.D.G.)

S.V.P. Vérifier l'adresse et les numéros de téléphone.

_____ _____
No Rue app.

_____ _____ _____
Ville Code postal

Téléphones: Personnel: (_____) _____ - _____
Travail: (_____) _____ - _____

Parents: (_____) _____ - _____

Autre _____: (_____) _____ - _____

Ton numéro de téléphone est quel nom dans l'annuaire téléphonique:

_____

Nom complet et lien avec toi:

_____

Adresse électronique: _____

Adresse des parents: _____

_____

_____

Appendix F

Conflict Questionnaire

Numéro D'identification: _____

Questionnaire sur les conflits

(Enfant)

Voici une liste d'éléments à propos desquels les enfants et les parents sont souvent en désaccord. Nous voulons savoir jusqu'à quel point ta mère et toi êtes en désaccord sur ces sujets à la maison. Évalue chaque item sur une échelle de 0 à 5 où 0 = "Je ne suis pas en désaccord" et 5 = "Je suis très en désaccord".

1. Mes tâches ménagères / aide à la maison.

2. Mon travail à l'école / devoirs, notes ou mauvaise conduite à l'école.

3. Mon inimité / être capable de garder certaines choses pour moi.

4. Écouter / respecter les demandes et les conseils de mes parents.

5. L'heure à laquelle je dois être à la maison le soir.

6. Mon apparence physique / la façon dont je m'habille.

7. L'heure à laquelle je dois me coucher.

8. Passer du temps ensemble en temps que famille.

9. Mes ami(e)s / les gens avec qui je me tiens

10. M'entendre avec mon/mes frère(s) et ma/mes soeur(s).

11. L'argent.

12. Parler au téléphone / regarder la télévision.

13. Garder ma chambre en ordre.

14. Prendre un bain / une douche.

15. _____

16. _____

17. _____

18. _____

Numéro D'identification: _____

Questionnaire sur les conflits

(parent)

Voici une liste d'éléments à propos desquels les enfants et les parents sont souvent en désaccord. Nous voulons savoir jusqu'à quel point votre enfant et vous êtes en désaccord sur ces sujets à la maison. Veuillez évaluer chaque item sur une échelle de 0 à 5 où 0 = "Je ne suis pas en désaccord" et 5 = "Je suis très en désaccord".

1. Tâches ménagères / aide à la maison.

2. Travail à l'école / devoirs, notes ou mauvaise conduite à l'école.

3. Inimité / être capable de garder certaines choses pour lui/elle-même.

4. Écouter / respecter les demandes et les conseils de ses parents.

5. L'heure à laquelle l'enfant doit être à la maison le soir.

6. Apparence physique / façon dont il/elle s'habille.

7. L'heure du coucher.

8. Passer du temps ensemble en temps que famille.

9. Les ami(e)s de mon enfant / les gens avec qui il/elle se tient.

10. S'entendre avec son/ses frère(s) et sa/ses soeur(s).

11. L'argent.

12. Parler au téléphone / regarder la télévision.

13. Garder sa chambre en ordre.

14. Prendre un bain / une douche.

15. _____

16. _____

17. _____

18. _____

Appendix G

Child Behaviour Checklist

CBCL-4/18

Date (A/M/J) : _____

No d'identification : _____

Rempli par : Mère Père

I. Veuillez énumérer les sports que votre enfant aime le plus faire. (Par ex. natation, baseball, bicyclette, etc.)

☐ Aucun

A. _____

B. _____

C. _____

Comparé aux enfants de son âge, combien de temps passe-t-il à faire ces sports ?				Comparé aux enfants de son âge, comment est-il/elle bon/ne dans ces sports ?			
Ne sait pas	Moins que la moyenne	Moyenne	Plus que la moyenne	Ne sait pas	Moins que la moyenne	Moyenne	Plus que la moyenne
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐

II Quels passe-temps, activités ou jeux autres que les sports votre enfant aime-t-il faire. (Par ex. lecture, piano, bricolage [ne pas inclure TV])

☐ Aucun

A. _____

B. _____

C. _____

Comparé aux enfants de son âge, combien de temps passe-t-il/elle à faire ces activités ?				Comparé aux enfants de son âge, comment est-il/elle bon/ne dans ces activités ?			
Ne sait pas	Moins que la moyenne	Moyenne	Plus que la moyenne	Ne sait pas	Moins que la moyenne	Moyenne	Plus que la moyenne
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐	☐	☐

III Veuillez énumérer les organisations, les clubs, les équipes ou les groupes dont votre enfant fait partie.

☐ Aucun

A. _____

B. _____

C. _____

Comparé aux enfants de son âge, à quel point votre enfant est-il/elle actif/ve dans chacun d'eux ?			
Ne sait pas	Moins que la moyenne	Moyenne	Plus que la moyenne
☐	☐	☐	☐
☐	☐	☐	☐
☐	☐	☐	☐

IV Veuillez énumérer les tâches et les corvées que votre enfant fait (par ex., livrer les journaux, faire son lit, etc.)

☐ Aucun

Comparé aux enfants de son âge, comment votre enfant s'acquitte-t-il/elle de ses tâches ?

	Ne sait pas	Moins bien que la moyenne	Moyenne	Mieux que la moyenne
A. _____	☐	☐	☐	☐
B. _____	☐	☐	☐	☐
C. _____	☐	☐	☐	☐

V À peu près combien de bon(ne)s ami(e)s votre enfant a-t-il ? ☐ Aucun ☐ 1 ☐ 2 ou 3 ☐ 4 ou plus

À peu près combien de fois par semaine fait-il/elle des activités avec ses ami(e)s? ☐ moins d'une ☐ 1 ou 2 ☐ 3 ou

VI Comparé à d'autres enfants de son âge, comment est-ce que votre enfant . . .

	Pire	À peu près pareil	Mieux
e. s'entend avec ses frères et soeurs	☐	☐	☐
f. s'entend avec les autres enfants	☐	☐	☐
g. s'entend avec ses parents	☐	☐	☐
h. joue et travaille par lui-/elle-même	☐	☐	☐

VII 1. Rendement scolaire (pour les enfants de six ans et plus) Ne va pas à l'école ☐

		Échec	En bas de la moyenne	Dans la moyenne	En haut de la moyenne
a.	Lecture ou Français	☐	☐	☐	☐
b.	Écriture	☐	☐	☐	☐
c.	Arithmétique/Mathématiques	☐	☐	☐	☐
d.	Épellation	☐	☐	☐	☐
Autres matières e. _____		☐	☐	☐	☐
f. _____		☐	☐	☐	☐
g. _____		☐	☐	☐	☐

2. Votre enfant est-il/elle dans une classe spéciale ? Non _____ Oui _____ (précisez) _____

3. Votre enfant a-t-il/elle déjà doublé une année ? Non _____ Oui _____ (précisez) _____

4. Votre enfant a-t-il des problèmes académiques ou autres à l'école ? Non _____ Oui _____

(précisez) _____

Quand ces problèmes ont-ils commencé ? _____

_____

Sont-ils terminés ? Non _____ Oui _____ (depuis quand ?) _____

Voici une liste d'énoncés décrivant les enfants. En vous basant sur le comportement de votre enfant au cours des 6 derniers mois, veuillez encercler :

2 -->	**si c'est très vrai ou souvent vrai pour votre enfant**
1 -->	**si c'est quelquefois vrai pour votre enfant**
0 -->	**si ce n'est pas vrai pour votre enfant**

Assurez-vous de répondre à tous les énoncés au meilleur de votre connaissance, même si certains ne semblent pas s'appliquer à votre enfant.

1. Agit trop jeune pour son âge. 0 1 2
2. Allergie 0 1 2
   (décrire)_____
   _____
3. Argumente beaucoup 0 1 2
4. Asthme 0 1 2
5. Se comporte comme l'autre sexe 0 1 2
6. Fait caca dans ses culottes 0 1 2
7. Se vante 0 1 2
8. Ne peut se concentrer ou porter attention longtemps 0 1 2
9. Ne peut s'arrêter de penser à certaines choses, obsessions 0 1 2
   (décrire)_____
   _____
10. Ne peut s'asseoir tranquille, est agité/e ou hyperactif(ve) 0 1 2
11. S'accroche aux adultes, ou est trop dépendant(e) 0 1 2
12. Se plaint de solitude 0 1 2
13. Est confus(e) ou semble être dans la brume 0 1 2
14. Pleure beaucoup 0 1 2
15. Est cruel(le) envers les animaux 0 1 2
16. Est cruel(le), brutal(e) ou mesquin(e)envers les autres 0 1 2
17. Rêvasse ou se perd dans ses pensées 0 1 2
18. Se fait volontairement mal ou tentative de suicide 0 1 2
19. Demande beaucoup d'attention 0 1 2
20. Détruit ses propres objets 0 1 2
21. Détruit les objets appartenant à sa famille ou aux autres enfants 0 1 2
22. Est désobéissant(e) à la maison 0 1 2
23. Est désobéissant(e) à l'école 0 1 2
24. Ne mange pas bien 0 1 2
25. Ne s'entend pas avec les autres enfants..... 0 1 2
26. Ne semble pas se sentir coupable après une mauvaise action 0 1 2
27. Facilement jaloux(se) 0 1 2
28. Mange ou boit des choses non comestibles 0 1 2
    (décrire)_____
29. Craint certains animaux, situations ou lieux autres que l'école 0 1 2
    (décrire)_____
    _____
30. Craint d'aller à l'école 0 1 2
31. Craint de penser ou faire quelque chose de mal 0 1 2
32. Sent qu'il/elle doit être parfait(e) 0 1 2
33. Sent ou se plaint que personne ne l'aime 0 1 2
34. Pense que les autres lui en veulent 0 1 2
35. Se sent inférieur(e) ou bon(ne) à rien 0 1 2
36. Se blesse souvent, a souvent des accidents 0 1 2
37. Se bataille souvent 0 1 2
38. Est fréquemment taquiné(e) 0 1 2
39. Fréquente les enfants qui attirent les ennuis 0 1 2

40. Entend des choses imaginaires 0 1 2
(décrire)_____
_____

41. Est impulsif(ve) ou agit sans réfléchir 0 1 2
(décrire)_____
_____

42. Aime être seul(e) 0 1 2

43. Ment ou triche 0 1 2

44. Se ronge les ongles 0 1 2

45. Nerveux(se), tendu(e) 0 1 2

46. Mouvements nerveux ou tics 0 1 2
(décrire)_____
_____

47. Fait des cauchemars 0 1 2

48. N'est pas aimé(e) des autres enfants 0 1 2

49. Constipé(e) 0 1 2

50. Très craintif(ve) ou anxieux(se) 0 1 2

51. A des étourdissements 0 1 2

52. Se sent trop coupable 0 1 2

53. Mange trop 0 1 2

54. Est toujours fatigué(e) 0 1 2

55. Est trop gros(se) 0 1 2

56. Problèmes physiques sans cause médicale apparente

a. fièvre ou douleurs 0 1 2
b. maux de tête 0 1 2
c. nausées, se sent malade 0 1 2
d. problèmes aux yeux 0 1 2
(décrire)_____
_____
e. éruption, rougeurs ou autres problèmes de peau 0 1 2
f. troubles d'estomac, crampes 0 1 2
g. vomissements 0 1 2
h. autres 0 1 2
(décrire)_____
_____

57. Attaque physiquement les gens 0 1 2

58. Se gratte le nez, la peau ou d'autres parties du corps 0 1 2

59. Joue avec ses organes sexuels en public 0 1 2
_____

60. Joue trop avec ses organes sexuels 0 1 2

61. Fait mal ses travaux scolaires 0 1 2

62. Est maladroit(e), manque de coordination..... 0 1 2

63. Préfère jouer avec des enfants plus vieux 0 1 2

64. Préfère jouer avec des enfants plus jeunes 0 1 2

65. Refuse de parler 0 1 2

66. Répète souvent certains gestes, compulsions 0 1 2
(décrire)_____
_____

67. Se sauve de la maison 0 1 2

68. Hurle ou crie beaucoup 0 1 2

69. Renfermé(e), garde les choses pour lui/elle... 0 1 2

70. Voit des choses imaginaires 0 1 2
(décrire)_____
_____

71. Centré(e) sur lui/elle même ou facilement embarrassé(e) 0 1 2

72. Déclenche des feux 0 1 2

73. A des problèmes sexuels 0 1 2
(décrire)_____
_____

74. Fait le "clown" ou se pavane 0 1 2

75. Timide 0 1 2

76. Dort moins que les autres enfants 0 1 2

77. Dort moins que les autres enfants durant le jour et la nuit 0 1 2
(décrire)_____
_____

78. Joue avec ses excréments..... 0 1 2

79. Problème de langage 0 1 2
(décrire)_ _____
_____

80. Regard vague, dans le vide 0 1 2

81. Vole à la maison 0 1 2

82. Vole à l'extérieur de la maison 0 1 2

83. Entrepose des choses dont il/elle n'a pas besoin 0 1 2
(décrire)_____

84. Comportements bizarres 0 1 2
(décrire)_____
_____

85. Idées étranges 0 1 2
(décrire)_____
_____

86. Irritable, entêté(e), maussade 0 1 2

87. Change soudainement d'humeur 0 1 2

88. Boude beaucoup 0 1 2

89. Soupçonneux(se), méfiant(e) 0 1 2

90. Grossier(e) 0 1 2

91. Parle de se tuer 0 1 2

92. Parle ou marche durant son sommeil 0 1 2
(décrire)_____
_____

93. Parle trop 0 1 2

94. Agace beaucoup 0 1 2

95. Accès de colère, crises, ou s'emporte facilement 0 1 2

96. Pense trop au sexe 0 1 2

97. Menace les gens 0 1 2

98. Suce son pouce 0 1 2

99. Trop préoccupé(e) par l'ordre et la propreté 0 1 2

100. Trouble lié au sommeil 0 1 2
(décrire)_____
_____

101. Fait l'école buissonnière, vagabonde 0 1 2

102. N'est pas actif(ve), a des mouvements lents, manque d'énergie 0 1 2

103. Triste, malheureux(se) ou dépressif(ve) 0 1 2

104. Extrêmement bruyant(e) 0 1 2

105. Boit de l'alcool ou prend de la drogue 0 1 2
(décrire)_____
_____

106. Vandalisme (tendance à détruire) 0 1 2

107. Se mouille durant le jour 0 1 2

108. Mouille son lit 0 1 2

109. Pleurniche, gémit 0 1 2

110. Souhaite être de l'autre sexe 0 1 2

111. Se retire, n'aime pas s'impliquer avec les autres 0 1 2

112. S'inquiète 0 1 2

113. S'il vous plaît, décrire tous problèmes que votre enfant a et qui ne sont pas énumérés dans ce questionnaire.
_____ 0 1 2

_____ 0 1 2

_____ 0 1 2

114. Avez-vous des inquiétudes au sujet du développement de votre enfant, que ce soit sur le plan de l'école, de son comportement, de ses relations avec sa famille et ses amis, etc.?
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Assurez-vous d'avoir répondu à tout. Merci de votre collaboration.

Appendix H

Teacher Report Form

IDNO:_____

CBCL-PROF
FORMULAIRE DE L'ENSEIGNANT/E
DIRECTIVES

Vos réponses serviront à comparer cet élève à d'autres élèves pour lesquels les professeurs auront également rempli ce formulaire. De plus, l'information fournie ici sera comparée à d'autres renseignements que nous aurons obtenus sur l'élève. Veuillez répondre au mieux de vos connaissances, même si l'information que vous possédez n'est pas complète. Le score de chaque question sera combiné afin d'identifier des modes généraux de comportement. Nous vous saurions gré d'ajouter des commentaires à chaque question et dans l'espace prévu à la page 2.

Nom de l'élève: _____ Nom de l'enseignant(e) _____

Niveau scolaire: _____Date:_____ Nom de l'école: _____

I. Depuis combien de temps connaissez-vous cet(te) élève? _____ mois.

II. Le (la) connaissez-vous bien? 1.____ Pas bien 2.____ Moyennement 3.____ Très bien

III. Combien de temps par semaine passe-t-il(elle) dans votre classe? _____ heures.

IV. Quel genre de classe est-ce? (Soyez précis(e), p. ex. 5 ^{e} régulière, mathématiques 3ème année, etc.)

_____

V. A-t-il(elle) déjà été référé(e) à une classe ou un service spécial, ou pour du tutorat?
____ Je ne sais pas 0. ____ Non 1. ____ Oui (quel genre et quand?)

_____

VI. A-t-il(elle) déjà répété une année?
____ Je ne sais pas 0. ____ Non 1. ____ Oui (quelle année et pourquoi?)

_____

VII. Rendement scolaire actuel - Donnez la liste des matières et cochez la colonne appropriée:

Matière	1. Bien en bas de la moyenne	2. Un peu en bas de la moyenne	3. Dans la moyenne	4. Un peu en haut de la moyenne	5. Bien en haut de la moyenne
1._____	☐	☐	☐	☐	☐
2._____	☐	☐	☐	☐	☐
3._____	☐	☐	☐	☐	☐
4._____	☐	☐	☐	☐	☐
5._____	☐	☐	☐	☐	☐
6._____	☐	☐	☐	☐	☐

VIII. Comparé(e) à des élèves typiques du même âge:

	Beaucoup moins	Quelque peu moins	Un peu moins	Dans la moyenne	Un peu plus	Quelque peu plus	Beaucoup plus
1. Travaille-t-il(elle) fort?	☐	☐	☐	☐	☐	☐	☐
2. Son comportement est-il approprié?	☐	☐	☐	☐	☐	☐	☐
3. Apprend-il(elle) bien?	☐	☐	☐	☐	☐	☐	☐
4. Est-il(elle) heureux(se)?	☐	☐	☐	☐	☐	☐	☐

IX. Résultats des tests de rendement les plus récents (si disponibles):

Nom du test	Matière	Date	Rang centile ou niveau atteint

X. Test de Q.I. et d'aptitudes (si disponibles):

Nom du test	Date	Scores de Q.I. ou l'équivalent

Cet(te) élève souffre-t-il(elle) d'une maladie, d'un handicap physique ou mental? ____ Non ____ Oui (Veuillez décrire)

_____

_____

_____

Qu'est-ce qui vous préoccupe le plus chez cet(te) élève?

_____

_____

_____

Veuillez décrire ses points forts:

_____

_____

_____

Veuillez ajouter tout commentaire que vous jugez utile sur le travail, le comportement ou le potentiel de cet(te) élève. (Utilisez des pages additionnelles au besoin.)_____

_____

_____

XI. Quel est le nombre d'absence(s) de cet enfant depuis le début de l'année scolaire? _____

Est-ce comparable à la moyenne d'absences des autres élèves? Oui____ Non____

Si non, Est-ce plus que la moyenne?_____ Est-ce moins que la moyenne?_____

Voici une liste d'énoncés pouvant décrire les élèves. Veuillez évaluer chaque énoncé en fonction du comportement de l'élève au cours des deux derniers mois et encercler la cote appropriée. Veuillez encercler la cote « 2 » si l'énoncé est très vrai ou souvent vrai, la cote « 1 » si l'énoncé est parfois vrai et la cote « 0 » si l'énoncé ne correspond pas du tout à l'élève ou que vous n'avez pas suffisamment d'informations pour répondre à cette question.

2 = très vrai ou souvent vrai ;
1 = parfois vrai ;
0 = ne correspond pas du tout ou informations insuffisantes.

0 1 2 1. Se comporte d'une façon trop jeune pour son âge.
0 1 2 2. Fredonne ou fait d'autres bruits étranges en classe.
0 1 2 3. Se dispute beaucoup.
0 1 2 4. Ne termine pas les choses qu'il (elle) commence.
0 1 2 5. Se comporte comme l'autre sexe.
0 1 2 6. Défie quelqu'un ou répond de façon impolie au personnel enseignant
0 1 2 7. Se vante.
0 1 2 8. Est incapable de se concentrer pour une longue période de temps.
0 1 2 9. Ne peut cesser de penser à certaines choses, a des obsessions (Expliquez).
_____
0 1 2 10. Ne peut pas rester assis(e), est agité(e) ou hyperactif(ve).
0 1 2 11. S'accroche aux adultes ou est trop dépendant(e).
0 1 2 12. Se plaint de se sentir seul(e).
0 1 2 13. Confus(se) ou semble être dans le brouillard.
0 1 2 14. Pleure beaucoup.
0 1 2 15. A la bougeotte.
0 1 2 16. Est cruel(le), brutal(e) ou méchant(e) envers les autres.
0 1 2 17. Est perdu(e) dans ses rêveries ou dans ses pensées.
0 1 2 18. Se fait mal intentionnellement ou essaie de se suicider.
0 1 2 19. Exige beaucoup d'attention.
0 1 2 20. Détruit ses propres choses.
0 1 2 21. Détruit des objets qui appartiennent à d'autres personnes.
0 1 2 22. A de la difficulté à suivre les directives qu'on lui donne.
0 1 2 23. Est désobéissant(e) à l'école.
0 1 2 24. Dérange les autres élèves.
0 1 2 25. Ne s'entend pas avec les autres enfants.
0 1 2 26. Ne semble pas se sentir coupable après s'être mal comporté(e).
0 1 2 27. Est facilement jaloux(se).
0 1 2 28. Mange ou boit autre chose que de la nourriture.
0 1 2 29. A peur de certains animaux, situations ou endroits (autres que l'école).
0 1 2 30. A peur d'aller à l'école.
0 1 2 31. A peur d'avoir des mauvaises pensées ou de faire quelque chose de mal.
0 1 2 32. Pense qu'il(elle) doit être parfait(e).
0 1 2 33. Pense ou se plaint que personne ne l'aime.
0 1 2 34. Pense qu'on le(la) persécute.
0 1 2 35. Se croit bon(ne) à rien ou inférieur(e).
0 1 2 36. Se fait souvent mal, est prédisposé(e) aux accidents.
0 1 2 37. Se bagarre souvent.
0 1 2 38. Se fait taquiner beaucoup.
0 1 2 39. Fréquente des enfants qui attirent des ennuis.
0 1 2 40. Croit entendre des sons qui n'existent pas (Expliquez) :
_____
0 1 2 41. Est impulsif(ve) ou agit sans réfléchir.
0 1 2 42. Aime la solitude.
0 1 2 43. Ment ou triche.
0 1 2 44. Ronge ses ongles.
0 1 2 45. Nerveux(se), stressé(e), tendu(e).
0 1 2 46. A des mouvements nerveux ou des contractions involontaires répétées (Expliquez). _____
0 1 2 47. A une attitude trop conformiste face aux règlements.
0 1 2 48. N'est pas aimé(e) par les autres élèves.
0 1 2 49. A des difficultés d'apprentissage.
0 1 2 50. Est trop peureux(se) ou anxieux(se).
0 1 2 51. A des étourdissements.
0 1 2 52. Se sent trop coupable.
0 1 2 53. N'attend pas son tour pour parler.
0 1 2 54. Est trop fatigué(e).
0 1 2 55. Pèse plus que la moyenne.

2 = très vrai ou souvent vrai 1 = parfois vrai 0 = ne correspond pas...

56. A des problèmes physiques sans cause médicale connue :
- 0 1 2 A. des douleurs ou des malaises.
- 0 1 2 B. des maux de tête.
- 0 1 2 C. des nausées, se sent mal.
- 0 1 2 D. des problèmes avec ses yeux (expliquez). _____
- 0 1 2 E. des irruptions ou autres problèmes de la peau
- 0 1 2 F. des maux d'estomac ou des crampes.
- 0 1 2 G. des vomissement
- 0 1 2 H. autre (expliquez). _____

0 1 2 57. Attaque les gens physiquement.
0 1 2 58. Joue dans son nez, se gratte la peau ou d'autres parties du corps (expliquez). _____
0 1 2 59. Dort en classe.
0 1 2 60. Est apathique et manque de motivation.
0 1 2 61. Travaille mal à l'école.
0 1 2 62. Est mal coordonné(e) ou maladroit(e).
0 1 2 63. Préfère jouer avec des enfants plus âgés.
0 1 2 64. Préfère jouer avec des enfants plus jeunes.
0 1 2 65. Refuse de parler.
0 1 2 66. Répète sans cesse certains actes; est compulsif(ve) (expliquez). _____
0 1 2 67. Dérange la classe.
0 1 2 68. Crie beaucoup.
0 1 2 69. Est renfermé(e), garde les choses pour lui(elle) même.
0 1 2 70. Voit des choses qui ne sont pas là (expliquez)_____
0 1 2 71. Est timide ou facilement embarrassé(e).
0 1 2 72. Son travail n'est pas ordonné.
0 1 2 73. Se comporte de façon irresponsable.
0 1 2 74. Fait le (la) fin(e) ou le bouffon.
0 1 2 75. Est gêné(e) ou timide.
0 1 2 76. Son comportement est explosif et imprévisible.
0 1 2 77. Ses demandes doivent être comblées immédiatement et il (elle) est facilement frustré(e).
0 1 2 78. N'est pas attentif(ve) et est facilement distrait(e).
0 1 2 79. A des problèmes d'élocution (expliquez). _____
0 1 2 80. A le regard vague
0 1 2 81. Se sent blessé(e) lorsqu'il (elle) est critiqué(e).
0 1 2 82. Vole.
0 1 2 83. Amasse des choses dont il (elle) n'a pas besoin.
0 1 2 84. A des comportements étranges (expliquez). _____
0 1 2 85. A des idées étranges (expliquez). _____
0 1 2 86. Est entêté(e), maussade ou irritable.
0 1 2 87. A des sautes d'humeur soudaines.
0 1 2 88. Boude beaucoup.
0 1 2 89. Est méfiant(e).
0 1 2 90. Sacre ou se sert de mots obscènes.
0 1 2 91. Parle de se tuer.
0 1 2 92. Ne fournit pas son rendement maximum.
0 1 2 93. Parle trop.
0 1 2 94. Taquine beaucoup.
0 1 2 95. A des accès de colère, des crises ou s'emporte facilement (expliquez).
0 1 2 96. Semble préoccupé(e) par le sexe.
0 1 2 97. Menace les gens.
0 1 2 98. Est en retard à l'école ou en classe.
0 1 2 99. Est trop préoccupé(e) par l'ordre ou la propreté.
0 1 2 100. Ne fait pas ses travaux.
0 1 2 101. Fait l'école buissonnière, manque l'école.
0 1 2 102. Est trop peu actif(ve), fait des mouvements lents ou manque d'énergie.
0 1 2 103. Est malheureux(se), triste ou déprimé(e).
0 1 2 104. Est exceptionnellement bruyant(e).
0 1 2 105. Prends de l'alcool ou de la drogue (expliquez) _____
0 1 2 106. Est très anxieux(se) de plaire.
0 1 2 107. N'aime pas l'école.
0 1 2 108. A peur de commettre des erreurs.
0 1 2 109. Pleurniche.
0 1 2 110. Manque de propreté dans son apparence personnelle.
0 1 2 111. Est renfermé(e), ne se mêle pas aux autres.
0 1 2 112. Se fait des soucis.
113. Veuillez indiquer tout problème que l'élève présente autre que ceux mentionnés ci-dessus.
0 1 2 _____
0 1 2 _____
0 1 2 _____

Appendix I

Adapted Pupil Evaluation Inventory

Numéro d'identification : _____

GRILLE D'AUTO-ÉVALUATION

Lis bien attentivement chacun des énoncés et dis-nous si :
A) Ça te décrit bien.
B) Les autres croient que ça te décrit bien.

		Ça me décrit bien		Les autres croient que ça me décrit bien	
1.	Je suis plus grand(e) que les autres.	OUI	NON	OUI	NON
2.	J'aide les autres.	OUI	NON	OUI	NON
3.	Je ne suis pas capable de rester assis(e) tranquille.	OUI	NON	OUI	NON
4.	J'essaie de mettre les autres dans le trouble.	OUI	NON	OUI	NON
5.	Je suis trop timide pour me faire des ami(e)s facilement.	OUI	NON	OUI	NON
6.	Je me sens trop facilement blessé(e).	OUI	NON	OUI	NON
7.	Je prends des airs supérieurs et je pense que je vaux mieux que tout le monde.	OUI	NON	OUI	NON
8.	Je fais le/la clown et je fais rire les autres.	OUI	NON	OUI	NON
9.	Je commence la chicane à propos de rien.	OUI	NON	OUI	NON
10.	J'ai l'impression de ne jamais m'amuser.	OUI	NON	OUI	NON
11.	Je suis bouleversé(e) quand j'ai à répondre aux questions en classe.	OUI	NON	OUI	NON
12.	Je dis aux autres enfants quoi faire.	OUI	NON	OUI	NON
13.	Je suis d'habitude dans les derniers/dernières choisi(e)s pour participer à des activités de groupe.	OUI	NON	OUI	NON
14.	Je suis dans ceux/celles que tout le monde aime.	OUI	NON	OUI	NON
15.	Je m'empêtre tout le temps et je me mets en difficulté.	OUI	NON	OUI	NON
16.	Je ris des gens.	OUI	NON	OUI	NON
17.	J'ai très peu d'ami(e)s.	OUI	NON	OUI	NON
18.	Je fais des choses bizarres.	OUI	NON	OUI	NON
19.	J'ennuie les gens qui essaient de travailler.	OUI	NON	OUI	NON
20.	Je me mets en colère quand ça ne marche pas comme je veux.	OUI	NON	OUI	NON
21.	Je ne porte pas attention au professeur.	OUI	NON	OUI	NON
22.	Je suis impoli(e) avec le professeur.	OUI	NON	OUI	NON
23.	Je suis malheureux(se) ou triste.	OUI	NON	OUI	NON
24.	Je suis particulièrement gentil(le).	OUI	NON	OUI	NON

		Ça me décrit bien		Les autres croient que ça me décrit bien	
25.	Je me comporte comme un bébé.	OUI	NON	OUI	NON
26.	Je suis méchant(e) et cruel(le) avec les autres enfants.	OUI	NON	OUI	NON
27.	Souvent, je ne veux pas jouer.	OUI	NON	OUI	NON
28.	Je regarde les autres de travers.	OUI	NON	OUI	NON
29.	Je fais le/la fin(e) devant la classe.	OUI	NON	OUI	NON
30.	Je dis que je peux battre tout le monde.	OUI	NON	OUI	NON
31.	On ne me remarque pas beaucoup.	OUI	NON	OUI	NON
32.	J'exagère et je raconte des histoires.	OUI	NON	OUI	NON
33.	Je me plains toujours et je ne suis jamais content(e).	OUI	NON	OUI	NON
34.	Je comprends toujours ce qui se passe.	OUI	NON	OUI	NON

Numéro d'identification : _____

Évaluation de l'élève

Niveau scolaire : _____
Nombre d'enfants dans la classe : _____

Nous vous demandons de lire chaque énoncé et de nous dire, selon vous, combien d'élèves nommeraient _____ pour chacun des comportements ci-dessous.

Combien d'élèves diraient que _____ est quelqu'un qui.....

1. est plus grand(e) que les autres. _____
2. aide les autres. _____
3. n'est pas capable de rester assis(e) tranquille. _____
4. essaie de mettre les autres dans le trouble. _____
5. est trop timide pour se faire facilement des ami(e)s. _____
6. se sent trop facilement blessé(e). _____
7. prend des airs supérieurs et pense qu'il/elle vaut mieux que tout le monde. _____
8. fait le/la clown et fait rire les autres. _____
9. commence la chicane à propos de rien. _____
10. ne semble jamais s'amuser. _____
11. est bouleversé(e) quand il/elle doit répondre aux questions en classe. _____
12. dit aux autres enfants quoi faire. _____
13. est habituellement dans les derniers/dernières choisi(e)s pour participer à des activités de groupe. _____
14. est dans ceux/celles que tout le monde aime. _____
15. s'empêtre tout le temps et se met en difficulté. _____
16. rit des gens. _____
17. a très peu d'ami(e)s. _____
18. fait des choses bizarres. _____
19. ennuie les gens qui essaient de travailler. _____
20. se met en colère quand ça ne marche pas comme il/elle le veut. _____
21. ne porte pas attention au professeur. _____

22. est impoli(e) avec le professeur. _____
23. est malheureux(se) ou triste. _____
24. est particulièrement gentil(le). _____
25. se comporte comme un bébé. _____
26. est méchant(e) et cruel(le) avec les autres enfants. _____
27. souvent ne veut pas jouer. _____
28. regarde les autres de travers. _____
29. veut faire le/la fin(e) devant la classe. _____
30. dit qu'il/elle peut battre tout le monde. _____
31. ne le/la remarque pas beaucoup. _____
32. exagère et raconte des histoires. _____
33. se plaint toujours et n'est jamais content(e) _____
34. semble toujours comprendre ce qui se passe. _____

Appendix J

Matson Evaluation of Social Skills with Youngsters

IDNO : _____

MESSY (Matson)

Voici des comportements que les enfants de ton âge ont peut-être. Lis bien chacun d'eux et indique à quel point ils sont vrais pour toi en encerclant un chiffre de 1 à 5.

1 Pas du tout	2 Un peu	3 Assez vrai	4 Vrai	5 Très vrai

1.	Je fais rire les autres.	1	2	3	4	5
2.	Je menace les autres ou je joue aux durs	1	2	3	4	5
3.	Je me fâche facilement.	1	2	3	4	5
4.	J'ordonne aux autres quoi faire plutôt que de le leur demander.	1	2	3	4	5
5.	Je rouspète ou je me plains souvent.	1	2	3	4	5
6.	J'interromps lorsque quelqu'un parle.	1	2	3	4	5
7.	Je prends ou utilise sans permission des choses que ne m'appartiennent pas.	1	2	3	4	5
8.	Je me vante.	1	2	3	4	5
9.	Je regarde les autres quand je leur parle.	1	2	3	4	5
10.	J'ai beaucoup d'ami(e)s.	1	2	3	4	5
11.	Je gifle ou frappe lorsque je suis fâché(e).	1	2	3	4	5
12.	J'aide un(e) ami(e) qui a de la peine.	1	2	3	4	5
13.	Je remonte le moral d'un(e) ami(e) qui est triste.	1	2	3	4	5
14.	Je gette des regards méchants aux autres enfants.	1	2	3	4	5
15.	Je suis fâché(e) ou jaloux(se) lorsque quelqu'un d'autre réussit bien.	1	2	3	4	5
16.	Je suis content(e) quand quelqu'un d'autre réussit bien.	1	2	3	4	5
17.	Je pointe les erreurs ou les fautes des autres enfants.	1	2	3	4	5
18.	Je veux toujours être le premier (la première).	1	2	3	4	5

19.	Je brise mes promesses.	1	2	3	4	5
20.	Je dis aux autres qu'ils/elles paraissent bien.	1	2	3	4	5
21.	Je mens pour avoir quelque chose que je veux.	1	2	3	4	5
22.	J'agace les autres pour qu'ils se fâchent.	1	2	3	4	5
23.	Je m'avance vers les gens et j'entame la conversation.	1	2	3	4	5
24.	Je suis heureux(se) quand quelqu'un fait quelque chose pour moi et je dis "merci".	1	2	3	4	5
25.	J'aime être seul(e).	1	2	3	4	5
26.	J'ai peur de parler aux autres.	1	2	3	4	5
27.	Je peux garder un secret.	1	2	3	4	5
28.	Je sais comment me faire des ami(e)s.	1	2	3	4	5
29.	Je fais exprès pour faire de la peine aux autres (j'essaie de les rendre triste).	1	2	3	4	5
30.	Je ris des autres.	1	2	3	4	5
31.	Je prends la défense de mes ami(e)s.	1	2	3	4	5
32.	Je regarde les autres quand ils parlent.	1	2	3	4	5
33.	Je pense que je sais tout.	1	2	3	4	5
34.	Je partage avec les autres.	1	2	3	4	5
35.	Je suis entêté(e).	1	2	3	4	5
36.	J'agis comme si j'étais meilleur(e) que les autres.	1	2	3	4	5
37.	Je montre mes sentiments.	1	2	3	4	5
38.	Je pense que les autres sont sur mon dos même s'ils ne le sont pas.	1	2	3	4	5
39.	Je fais des sons qui agacent les autres (renifle, rote).	1	2	3	4	5
40.	Je prends soins des choses des autres comme si elles m'appartenaient.	1	2	3	4	5

41.	Je parle trop fort.	1	2	3	4	5
42.	J'appelle les autres par leurs noms.	1	2	3	4	5
43.	Je demande si je peux faire quelque chose pour aider.	1	2	3	4	5
44.	Je me sens bien si j'aide quelqu'un.	1	2	3	4	5
45.	J'essaie d'être meilleur(e) que tout le monde.	1	2	3	4	5
46.	Je pose des questions quand je parle aux autres.	1	2	3	4	5
47.	Je vois souvent mes ami(e)s.	1	2	3	4	5
48.	Je joue tout(e) seul(e).	1	2	3	4	5
49.	Je me sens seu(e)l.	1	2	3	4	5
50.	Je suis désolé(e) quand je fais de la peine a quelqu'un.	1	2	3	4	5
51.	J'aime être le/la meneur/meneuse	1	2	3	4	5
52.	Je me joins aux jeux d'autres enfants.	1	2	3	4	5
53.	Je me battaille souvent.	1	2	3	4	5
54.	Je suis jaloux(se) d'autres personnes.	1	2	3	4	5
55.	Je suis gentil(le) avec les personnes qui sont gentilles avec moi.	1	2	3	4	5
56.	Je demande aux autres comment ils vont et ce qu'ils ont fait, etc.	1	2	3	4	5
57.	Je reste avec les autres trop longtemps (plus qu'il n'est poli).	1	2	3	4	5
58.	J'explique les choses plus que nécessaire.	1	2	3	4	5
59.	Je ris des blagues et des histoires drôles des autres.	1	2	3	4	5
60.	Je crois que le plus important c'est de gagner.	1	2	3	4	5
61.	Je fais de la peine aux autres lorsque je les agace.	1	2	3	4	5
62.	Je rends la pareille a ceux qui me font de la peine.	1	2	3	4	5

Numéro d'identification : _____

MESSY (Matson)

Nous voulons en savoir un peu plus sur le comportement social de _____. Sur une échelle de 1 à 5, indiquez à quelle fréquence il/elle démontre les comportements décrits dans ce questionnaire.

1 Pas du tout	2 Quelques fois	3 Assez régulièrement	4 La plupart du temps	5 Tout le temps

_____ est-il/elle quelqu'un qui...

1.	fait rire les autres?	1	2	3	4	5
2.	menace les autres ou joue au dur?	1	2	3	4	5
3.	se fâche facilement?	1	2	3	4	5
4.	ordonne aux autres quoi faire plutôt que de leur demander?	1	2	3	4	5
5.	rouspète ou se plaint souvent?	1	2	3	4	5
6.	interrompt lorsque quelqu'un parle?	1	2	3	4	5
7.	prend ou utilise sans permission des choses qui ne lui appartiennent pas?	1	2	3	4	5
8.	se vante?	1	2	3	4	5
9.	gifle ou frappe lorsqu'il/elle est fâché(e)?	1	2	3	4	5
10.	aide un(e) ami(e) qui a de la peine?	1	2	3	4	5
11.	jette des regards méchants aux autres enfants?	1	2	3	4	5
12.	est fâché(e) ou jaloux(se) lorsque quelqu'un d'autre réussit bien?	1	2	3	4	5
13.	pointe les erreurs ou les fautes des autres enfants?	1	2	3	4	5
14.	veut toujours être le premier (la première)?	1	2	3	4	5
15.	brise ses promesses?	1	2	3	4	5
16.	ment pour avoir ce qu'il/elle veut?	1	2	3	4	5
17.	agace les autres pour qu'ils se fâchent?	1	2	3	4	5
18.	s'avance vers les gens et entame la conversation?	1	2	3	4	5

1 Pas du tout	2 Quelques fois	3 Assez Régulièrement	4 La plupart du temps	5 Tout le temps

19.	est heureux(se) quand quelqu'un fait quelque chose pour lui/elle et qui dit « merci »?	1	2	3	4	5
20.	a peur de parler aux autres?	1	2	3	4	5
21.	fait exprès pour faire de la peine aux autres (essaie de les rendre triste)?	1	2	3	4	5
22.	est mauvais(e) perdant(e)?	1	2	3	4	5
23.	rit des autres?	1	2	3	4	5
24.	blâme les autres pour ses propres problèmes?	1	2	3	4	5
25.	prend la défense de ses ami(e)s?	1	2	3	4	5
26.	regarde les autres quand ils parlent?	1	2	3	4	5
27.	pense qu'il/elle sait tout?	1	2	3	4	5
28.	sourit aux gens qu'il/elle connaît?	1	2	3	4	5
29.	est entêté(e)?	1	2	3	4	5
30.	agit comme s'il/elle était meilleur(e) que les autres?	1	2	3	4	5
31.	démontre ses sentiments?	1	2	3	4	5
32.	pense que les autres sont sur son dos même quand ils ne le sont pas?	1	2	3	4	5
33.	croit que de bonnes choses vont arriver?	1	2	3	4	5
34.	travaille bien en équipe?	1	2	3	4	5
35.	fait des sons qui agacent les autres (renifle, rote, se racle la gorge)?	1	2	3	4	5
36.	se vante trop quand il/elle gagne?	1	2	3	4	5
37.	prend soin des choses des autres comme si elles lui appartenaient?	1	2	3	4	5
38.	parle trop fort?	1	2	3	4	5
39.	appelle les autres par leur nom?	1	2	3	4	5
40.	demande s'il/elle peut faire quelque chose pour aider?	1	2	3	4	5
41	se sent bien s'il/elle aide quelqu'un?	1	2	3	4	5

1 Pas du tout	2 Quelques fois	3 Assez Régulièrement	4 La plupart du temps	5 Tout le temps

41.	se défend?	1	2	3	4	5
43.	pense toujours que de mauvaises choses vont arriver?	1	2	3	4	5
44.	essaie d'être meilleur(e) que tout le monde?	1	2	3	4	5
45.	pose des questions quand il/elle parle aux autres?	1	2	3	4	5
46.	se sent seul(e)?	1	2	3	4	5
47.	est désolé(e) quand il/elle fait de la peine à quelqu'un?	1	2	3	4	5
48.	s'impatiente quand il/elle doit attendre pour quelque chose?	1	2	3	4	5
49.	aime être le meneur/la meneuse?	1	2	3	4	5
50.	se joint aux jeux d'autres enfants?	1	2	3	4	5
51.	joue selon les règles du jeu?	1	2	3	4	5
52.	se bataille souvent?	1	2	3	4	5
53.	est jaloux(se) des autres?	1	2	3	4	5
54.	est gentil(le) avec ceux qui sont gentils avec lui/elle?	1	2	3	4	5
55.	essaie d'entraîner les autres à faire ce qu'il/elle veut?	1	2	3	4	5
56.	demande aux autres comment ils vont, ce qu'ils ont fait, etc?	1	2	3	4	5
57.	reste avec les autres trop longtemps (plus qu'il n'est poli)?	1	2	3	4	5
58.	explique les choses plus qu'il n'est nécessaire?	1	2	3	4	5
59.	est amical(e) avec les nouvelles personnes qu'il/elle rencontre?	1	2	3	4	5
60.	fait de la peine aux autres pour avoir ce qu'il/elle veut?	1	2	3	4	5
61.	parle beaucoup de ses problèmes ou de ses inquiétudes?	1	2	3	4	5
62.	croit que le plus important est de gagner?	1	2	3	4	5
63.	fait de la peine aux autres lorsqu'il/elle les agace?	1	2	3	4	5
64.	rend la pareille à ceux qui lui font de la peine?	1	2	3	4	5

Appendix K

Social Skills Rating System

IDNO: _____

SSRS

(Gresham & Elliot)

Voici plusieurs choses que les élèves de ton âge peuvent faire. Lis **TOUTES** les phrases et pense à ce que tu fais **TOI**. Ensuite, indique à quelle fréquence chaque comportement se produit.

Assure-toi de répondre à **TOUS** les numéros et souviens-toi qu'il n'y a pas de bonnes ou de mauvaises réponses.

		Jamais	Parfois	Très Souvent
1.	Je me fais des ami(e)s facilement.	0	1	2
2.	Je souris, j'envoie la main, ou je fais un signe de la tête aux gens.	0	1	2
3.	Je demande avant d'utiliser les affaires des autres.	0	1	2
4.	J'ignore les camarades qui font les clowns dans la classe.	0	1	2
5.	Je suis désolé(e) pour les autres quand de mauvaises choses leur arrivent.	0	1	2
6.	Je le dis aux autres lorsque je suis fâché(e) contre eux.	0	1	2
7.	Je peux être en désaccord avec les adultes sans chicaner ou argumenter.	0	1	2
8.	Je garde mon bureau propre et en ordre.	0	1	2
9.	Je participe aux activités scolaires comme les sports ou les clubs.	0	1	2
10.	Je fais mes devoirs à temps.	0	1	2
11.	Je dis mon nom aux autres sans qu'on me le demande.	0	1	2
12.	Je contrôle mon humeur quand les gens sont fâchés contre moi.	0	1	2
13.	Je conteste poliment les règles qui me semblent injustes.	0	1	2
14.	Je laisse savoir à mes ami(e)s que je les aime en leur disant ou en leur montrant.	0	1	2
15.	J'écoute les adultes quand ils me parlent.	0	1	2
16.	Je montre que j'aime les compliments que mes ami(e)s me font.	0	1	2
17.	J'écoute mes ami(e)s quand ils/elles parlent de leurs problèmes.	0	1	2
18.	J'évite de faire des choses avec les autres si c'est pour m'attirer des ennuis avec les adultes.	0	1	2
19.	Je termine calmement les disputes avec mes parents.	0	1	2
20.	Je dis de belles choses aux autres quand ils ont fait quelque chose de bien.	0	1	2

		Jamais	Parfois	Très Souvent
21.	J'écoute l'enseignant(e) quand il/elle donne son cours.	0	1	2
22.	Je termine mon travail en classe à temps.	0	1	2
23.	Je commence des conversations avec mes camarades de classe.	0	1	2
24.	Je le dis aux adultes quand ils ont fait quelque chose pour moi que j'aime.	0	1	2
25.	Je suis les directives du professeur.	0	1	2
26.	J'essaie de comprendre comment mes ami(e)s se sentent quand ils/elles sont fâché(e)s, agacé(e)s, ou tristes.	0	1	2
27.	Je demande à mes ami(e)s de m'aider avec mes problèmes.	0	1	2
28.	J'ignore les autres enfants quand ils m'agacent ou me crient des noms.	0	1	2
29.	J'accepte les gens qui sont différents.	0	1	2
30.	J'utilise mon temps libre d'une bonne façon.	0	1	2
31.	Je demande à mes camarades de classe pour me joindre à une activité ou à un jeu.	0	1	2
32.	J'utilise un ton poli lors des discussions en classe.	0	1	2
33.	Je demande de l'aide aux adultes lorsque d'autres enfants essaient de me frapper ou de me pousser.	0	1	2
34.	Je parle avec mes camarades de classe quand il y a un problème ou un conflit.	0	1	2

Merci pour ton aide!

Appendix L

Revised Children's Manifest Anxiety Scale

Numéro d'identification : _____

RCMAS

Voici des sentiments et des comportements que certains enfants de ton âge peuvent avoir. Nous aimerions savoir si ces sentiments et comportements te décrivent bien. Pour chaque numéro, lis la phrase et encercle "OUI" si elle te décrit bien ou encercle "NON" si elle ne te décrit pas bien.

Il n'y a pas de bonnes ou de mauvaises réponses. Nous voulons seulement savoir ce qui te ressemble, **TOI**.

1.	J'ai de la difficulté à me décider.	OUI	NON
2.	Je deviens nerveux/se quand ça ne va pas bien pour moi.	OUI	NON
3.	Les autres semblent tout faire plus facilement que moi.	OUI	NON
4.	J'aime tous les gens que je connais.	OUI	NON
5.	J'ai souvent de la difficulté à reprendre mon souffle.	OUI	NON
6.	Je m'inquiète souvent.	OUI	NON
7.	J'ai peur d'un paquet de choses.	OUI	NON
8.	Je suis toujours gentil/le.	OUI	NON
9.	Je me fâche facilement.	OUI	NON
10.	Je m'inquiète de ce que mes parents vont dire.	OUI	NON
11.	J'ai l'impression que les autres n'aiment pas la façon dont je fais les choses.	OUI	NON
12.	J'ai toujours de bonnes manières.	OUI	NON
13.	J'ai de la difficulté à m'endormir le soir.	OUI	NON
14.	Je m'inquiète de ce que les autres pensent de moi.	OUI	NON
15.	Je me sens seul(e) même quand il y a d'autres personnes autour de moi.	OUI	NON
16.	Je suis toujours bon(ne).	OUI	NON
17.	J'ai souvent mal à l'estomac.	OUI	NON
18.	Je me sens facilement blessé(e) (j'ai souvent de la peine).	OUI	NON
19.	J'ai les mains moites et humides.	OUI	NON
20.	Je suis toujours gentil(le) avec tout le monde.	OUI	NON
21.	Je suis tout le temps fatigué(e).	OUI	NON
22.	Je m'inquiète de ce qui va arriver.	OUI	NON
23.	Les autres enfants sont plus heureux que moi.	OUI	NON
24.	Je dis toujours, toujours la vérité.	OUI	NON
25.	Je fais des cauchemars.	OUI	NON

26.	Je suis facilement blessé(e) quand on m'agace.	OUI	NON
27.	J'ai peur que quelqu'un me dise que je ne fais pas les choses correctement.	OUI	NON
28.	Je ne me fâche jamais.	OUI	NON
29.	Parfois, je me réveille effrayé(e).	OUI	NON
30.	Je m'inquiète quand je me couche le soir.	OUI	NON
31.	C'est difficile de me concentrer sur mes devoirs.	OUI	NON
32.	Je ne dis jamais de choses que je ne devrais pas dire.	OUI	NON
33.	Je ne tiens pas en place ou je gigote sur ma chaise.	OUI	NON
34.	Je suis nerveux(se).	OUI	NON
35.	Plusieurs personnes sont contre moi.	OUI	NON
36.	Je ne mens jamais.	OUI	NON
37.	J'ai souvent peur que quelque chose de négatif m'arrive.	OUI	NON

Merci de ta participation!!!

Appendix M

Children's Depression Inventory

Numéro D'identification : _____

CDI (Kovacs)

Les enfants ont parfois des idées et des sentiments différents. Ce questionnaire présente divers groupes de sentiments et d'idées. Pour chaque groupe, choisis la phrase qui te décrit le mieux depuis les deux dernières semaines.

Il n'y a pas de bonnes ou de mauvaises réponses. Après avoir choisi la phrase qui te décrit le mieux **depuis les deux dernières semaines**, noircis le petit carré à côté de ta réponse, de la façon suivante: ■

Groupe 1
- ☐ Je suis parfois triste.
- ☐ Je suis souvent triste.
- ☐ Je suis toujours triste.

Groupe 2
- ☐ Rien n'ira jamais bien pour moi.
- ☐ Je ne suis pas certain(e) que les choses vont bien aller pour moi.
- ☐ Les choses vont bien aller pour moi.

Groupe 3
- ☐ Je fais la plupart des choses correctement.
- ☐ Je fais plusieurs choses de la mauvaise façon.
- ☐ Je fais tout de la mauvaise façon.

Groupe 4
- ☐ J'ai du plaisir à faire plusieurs choses.
- ☐ J'ai du plaisir dans certaines choses.
- ☐ Rien n'est amusant.

Groupe 5
- ☐ Je me comporte toujours mal.
- ☐ Je me comporte souvent mal.
- ☐ Je me comporte parfois mal.

Groupe 6
- ☐ Je pense parfois à propos de mauvaises choses qui m'arrivent.
- ☐ Je m'inquiète à propos de mauvaises choses qui pourraient m'arriver.
- ☐ Je suis certain(e) que des choses terribles vont m'arriver.

Groupe 7
- ☐ Je me déteste.
- ☐ Je ne m'aime pas.
- ☐ Je m'aime.

Groupe 8
- ☐ Toutes les mauvaises choses arrivent par ma faute.
- ☐ Plusieurs mauvaises choses arrivent par ma faute.
- ☐ Les mauvaises choses qui arrivent ne sont habituellement pas de ma faute.

Groupe 9
- ☐ J'ai envie de pleurer tous les jours.
- ☐ J'ai souvent envie de pleurer.
- ☐ J'ai envie de pleurer de temps en temps.

Groupe 10
- ☐ Il y a tout le temps des choses qui m'agacent.
- ☐ Il y a souvent des choses qui m'agacent.
- ☐ Il y a parfois des choses qui m'agacent.

Groupe 11
- ☐ J'aime être avec les gens.
- ☐ Je n'aime pas souvent être avec les gens.
- ☐ Je ne veux pas du tout être avec les gens.

Groupe 12
- ☐ Je suis incapable de me décider.
- ☐ C'est difficile de me décider.
- ☐ Je me décide facilement.

Groupe 13
- ☐ Mon apparence est acceptable.
- ☐ Il y des choses qui m'agacent dans mon apparence.
- ☐ Je me trouve laid(e).

Groupe 14
- ☐ Je dois toujours me forcer pour faire mes devoirs.
- ☐ Je dois souvent me forcer pour faire mes devoirs.
- ☐ Faire mes devoirs n'est pas un gros problème pour moi.

Groupe 15
- ☐ J'ai de la difficulté à dormir toutes les nuits.
- ☐ J'ai souvent de la difficulté à dormir.
- ☐ Je dors très bien.

Groupe 16
- ☐ Je suis fatigué(e) une fois de temps en temps.
- ☐ Je suis souvent fatigué(e).
- ☐ Je suis toujours fatigué(e).

Groupe 17
- ☐ La plupart du temps, je n'ai pas faim.
- ☐ Souvent, je n'ai pas faim.
- ☐ J'ai bon appétit.

Groupe 18
- ☐ Je ne m'inquiète pas de mes petites douleurs.
- ☐ Je m'inquiète souvent de mes douleurs.
- ☐ Je m'inquiète tout le temps de mes douleurs.

Groupe 19
- ☐ Je ne me sens pas seul(e).
- ☐ Je me sens souvent seul(e).
- ☐ Je me sens toujours seul(e).

Groupe 20
- ☐ Je n'ai jamais de plaisir à l'école.
- ☐ J'ai du plaisir à l'école une fois de temps en temps.
- ☐ J'ai souvent du plaisir à l'école.

Groupe 21
- ☐ J'ai beaucoup d'ami(e)s.
- ☐ J'ai quelques ami(e)s, mais j'aimerais en avoir plus.
- ☐ Je n'ai pas d'ami(e)s.

Groupe 22
- ☐ Mes travaux scolaires sont parfaits.
- ☐ Mes travaux scolaires ne sont pas aussi bons qu'avant.
- ☐ J'échoue dans des matières dans lesquelles j'étais bon(ne).

Groupe 23
- ☐ Je ne peux jamais être aussi bon(ne) que les autres enfants.
- ☐ Si je veux, je peux être aussi bon(ne) que les autres enfants.
- ☐ Je suis tout aussi bon(ne) que les autres enfants.

Groupe 24
- ☐ Personne ne m'aime vraiment.
- ☐ Je ne suis pas certain(ne) si quelqu'un m'aime vraiment.
- ☐ Je suis certain(ne) que quelqu'un m'aime vraiment.

Groupe 25
- ☐ Je fais habituellement ce qu'on me dit.
- ☐ La plupart du temps, je ne fais pas ce qu'on me dit.
- ☐ Je ne fais jamais ce qu'on me dit.

Groupe 26
- ☐ Je m'entends bien avec les autres.
- ☐ Je me chicane souvent avec les autres.
- ☐ Je me chicane toujours avec les autres.

Appendix N

Mutuality and Autonomy Coding Scheme

MUTUALITY AND AUTONOMY CODING SCHEME (MACS)

The Mutuality and Autonomy Coding Scheme was designed to record interactions between 10-12 year-old children and their mothers during two tasks of varying levels of stress. For instance, the Jenga task is a relatively non-stressful task that elicits partner cooperation; whereas the Conflict task is a relatively stressful task that elicits discussion. Mutuality and autonomy are coded using 1-second intervals.

Brief notes:

a. Mutuality and autonomy behaviours are coded on one pass. If desired, gaze and affect may be coded on a separate pass.
b. A *speech segment* is defined as one or more phrases spoken by a participant without being interrupted. Two seconds of silence, or the other participant speaking, constitute interruptions.
c. Codes are not mutually exclusive; a given speech segment can receive more than one code (e.g., *dyadic mutuality* and *autonomy support*).
d. Start time: If 15 frames or more, round up.
   End time: If 14 frames or less, round down.
   For speech segments or behaviours that are less than 30 frames, and start in the 2nd half of a second and end in the 1st half of the next second, code the speech/behaviour in the second in which it started. For example, if start = 0:30:28:23 and end = 0:30:29:11, then code at 0:30:28 (i.e., the 28th second).
e. When 2 or more behaviours occur during a given "speech", code each behaviour for the duration of the entire speech. *Talking over someone* (listed under behaviours that interfere with mutuality) is the exception to this rule; only the first second of a speech segment is coded as *talking over someone*, even if the entire segment is assigned an additional code.
f. Always specify the behaviour(s) associated with a given code in the comments column (e.g., if assigning an *autonomy support* code, specify that the behaviour was *negotiating*.
g. When coding the behaviours of both participants during the *same* second (i.e., child/mom, mom/dyad, or child/dyad), distinguish the codes using another colour.
h. Do not code participant behaviour when the experimenter is present and/or speaking.

Outline:

1. Mutuality
   a. Dyadic mutuality
      i. Shared goals
      ii. Shared (positive) affect
   b. Individual behaviours that support mutuality
      i. Cooperation (behaviours supporting shared goals)
      ii. Warmth (behaviours supporting shared positive affect)

c. Individual behaviours that interfere with mutuality
    i. Nonverbal interference
    ii. Verbal interference
2. Autonomy
    a. Supporting displayed autonomy
    b. Interfering with displayed autonomy

Operational definitions

1. **Mutuality**: Mutuality is a multifaceted construct encompassing warm, supportive, and synchronous interactions that occur when mother and child display behaviours (which may or may not be different) that convey the same message or that work toward the same goal. Mutuality reflects cooperation and warmth. *Cooperation* refers to shared goals, and the degree of verbalized and nonverbalized agreement as to how to proceed with the task. *Warmth* reflects the combined effects of shared positive affect and physical closeness. Mutuality is measured at the level of the dyad; however, individual behaviours that *help* or *hinder* mutuality are also coded.

    a. Dyadic mutuality
    i. Shared goals
    (1) Team work (i.e., both partners simultaneously working on same task or towards same immediate goal)
    – Must least at least 30 frames.
    – If the task is physical, both partners must have at least one *visible* hand on the task (e.g., both partners are holding the Jenga tower so it doesn't fall; clean-up after the tower has fallen), unless they are working on *separate* towers.
    – Stop coding when 1 person removes both hands, even if they resume touching the tower in the next second.
    (2) Partner mirroring (i.e., partners simultaneously mirror each other's movements, e.g., lean toward each other, count on their fingers, etc.)
    – Must be at least 30 frames.

    ii. Shared affect
    (1) Smiling *or* laughing *together*
    – Smile = upturned corners of the mouth.
    – Laughing = smiling + sound.
    – Must least at least 30 frames.
    – Need to be able to *see* upturned corners on both mouths. If you can't see the face, don't code smiling/laughing.
    – If only one partner is smiling/laughing for < 1 second before the second partner starts to smile/laugh too, then only code dyadic smiling.
    (2) *Mutual* physical closeness
    – Partners must be touching each other
    – Holding hands, hugging

b. Individual behaviours that support mutuality

i. Cooperation (i.e., behaviours supporting shared goals)
   (1) Stating one's strategy or plans (i.e., describing how you will proceed, without necessarily giving a reason for your actions) or checking one's strategy with the partner (e.g., "tu commences?", "I will", "I'm going to")
   (2) Reflecting/reiterating/repeating/paraphrasing partner's thoughts (i.e. saying it back in your own words)
   (3) Asking for advice or help (e.g., how do I do this?)
   (4) Offering help/suggestions/advice for the short-term (e.g., fait attention, ca va tomber)
   (5) Active listening (i.e., nodding or saying mm-hmm/oui, *while* looking at the speaker)
   (6) Clarifying a misunderstanding
   (7) Engaging (or re-engaging) a partner in the discussion at hand, encouraging partner to participate in the task, or redirecting partner to the intended task.
   (8) *Let's* statements (i.e., "on va…")

ii. Warmth (i.e., behaviours supporting shared affect)
   (1) *One* partner smiling/laughing (min. 15 frames).
   Note:
   - Smile = upturned corners of the mouth
   - Laughing = smiling + sound.
   - If one partner is smiling for < 30 frames before the second partner starts to smile/laugh too, then only code dyadic smiling/laughing
   - If a smile turns into a laugh, or vice versa, then code the whole behaviour as a laugh.

   (2) Reflecting or validating partner's *affect in the here-and-now* (as opposed to validating affect that child/parent has projected onto story problem, which is more like validating an *idea* or *opinion*).
   (3) Praise, or encouraging/cheerleading comments, e.g., "Oui, Bravo!", "Essaies-le!"; comments must be spontaneous, not in response to a question/prompt such as "C'est bon mon truc la?"; does not include clapping in isolation.
   (4) Jokes or playful remarks (e.g., "tu triches!", while smiling; no sarcasm) If participant comments that other person will make Jenga fall, then examine the tone of voice. If playful, code as a joke. If hostile, code as mutuality interference.
   (5) Physical closeness: one partner must be touching the other (e.g., hugging, kissing, stroking partner's arm, holding partner's arm, hand, or fingers).
   (6) Expressing emotion/frustration, e.g., "j'ai peur", "c'est pas facile ça!"

b. Individual behaviors that interfere with mutuality

Note: these behaviours interfere with the emotional bond between the dyad, as opposed to interfering with the child's development of autonomy

i. Nonverbal interference
   (1) Gazing away or clearly averting eye contact for at least 30 frames; only code gaze away when one partner is looking downwards (i.e., directly at the table) or almost 180^{o} away from their partner; does not include reading; may be coded on a separate pass if necessary.
   (2) Ignoring partner while engaging in an unrelated activity
   (3) Frustration (e.g., heaving a sigh, rolling/rubbing eyes, grunting, whining)
   (4) Intrusive physical behaviour (e.g., grabbing, hitting, poking, pulling, pushing)
   (5) "In your face!" behaviour; e.g., sticking out one's tongue, "ha!ha!", "rude expressions"

ii. Verbal interference
   (1) Abruptly changing or ending the topic of conversation
   (2) Dismissing a partner's suggestion (e.g., "calme toi", "laisse moi faire", "je m'en fou")
   (3) Criticizing/correcting/condescending/insulting comments
   (4) Hostile, sarcastic, defensive, competitive, aggressive, or passive-aggressive statements
   (5) Reprimanding/lecturing; i.e., blaming partner at length for a fault or error
   (6) Yelling or swearing; only at partner, not in reaction to an event (in response to Jenga falling)
   (7) Expressions of violence (violent actions, e.g., poking; references to violence, e.g., suggesting violent solutions)
   (8) Talking over someone or finishing partner's sentences (i.e., interrupting the other partner in midspeech) → only code first *second* of speech. Do not code when someone says "oui" while partner is speaking; instead code active listening, if applicable.
   (9) Invalidating partner's feelings, e.g.:
      – Kid says "I don't like it when you tell dad things I tell you in confidence", and mom replies "It's no big deal, it's just your dad")
      – "You're not *really* angry"
      – One partner laughing while other partner is speaking seriously about an issue.

2. **Autonomy**: Autonomy is a multidimensional construct referring to children's behavioural, cognitive, and emotional individuation from their parents, whereby (1) dependence on parents is gradually relinquished, (2) decisions are made relatively independently, and (3) discrepant opinions are voiced. *Displayed autonomy* describes the degree to which (1) partners model expressions of autonomy, and (2) subscribe to the notion that children can/should express their own opinions, solve their own problems, and make their own decisions in an age appropriate manner. Displayed autonomy can only be observed at the level of the individual.

a. Behaviours that support displayed autonomy

(1) Socratic questioning (i.e., questions about issues, assumptions, reasons, evidence, implications, viewpoints, or clarification questions). Can include requests for more information (e.g., "donne-moi des raisons"); not small talk.
(2) Asking for partner's opinion (e.g., What do you think?)
(3) Giving reasons, examples, or evidence for one's opinion (i.e., explaining why you think a certain way); can be in response to a question or prompt; can begin with "because…"
(4) Disagreeing with a reason
(5) Validating partner's idea/opinion (e.g, "that's a good idea", "I understand what you're saying")
(6) Negotiating (e.g., "if…then", "I'll fold the laundry, but not girls' underwear!")
(7) Proposing a *novel* idea or an alternative solution to a problem
(8) Logical reasoning (e.g., Boy: "I don't forget to hang my coat on Saturdays", Mother: "That's because you never go out on Saturday.")

b. Behaviours that interfere with displayed autonomy

(1) Changing one's mind without reason or agreeing to appease partner
(2) Pressuring partner to agree without logical support for one's argument; could take the form of a threat or begging/pleading.
(3) Undermining partner's opinion (e.g., "so what?", "I don't care", "Ça ne fait rien.")
(4) Doing the following *without providing a reason for one's beliefs*
   - Giving one's opinion
   - Stating one's position
   - Disagreeing with partner
   - Making a demand

   Note: Statement must be in context of making an argument or negotiation (as opposed to answering simple questions).
   Examples: "You have to help your father!", "No!", "I don't want to!", "Your sister doesn't have to."
(5) Not taking responsibility, i.e., deflecting an argument, avoiding/evading a question, blaming others, making excuses without reasons or evidence.

   E.g., Changing topic to other partner (not to be confused with changing the topic of conversation, which falls under Mutuality Interference)
   - Mother: "Is your room clean?", Child: "Your room is never clean!"
   - Mother: "Your room smells", Child: "My sister's room smells worse!"
   - Mother: "You and your sister should try not to scream so much", Child: "But she screams more!"

Appendix O

Request/Compliance Coding Scheme

THE REQUEST/COMPLIANCE CODING SCHEME (RCCS):
A coding scheme for rating maternal request strategies and child compliance and noncompliance behaviours

Naomi Grunzeweig, 2003

This coding system is designed to study the quality and quantity of maternal request strategies and child compliance and noncompliance behaviours in the context of interactions involving women and their 24- to 72-month-old children.

The three interaction contexts include (i) a four- or seven-minute puzzle task, depending on the age of the child, (ii) a four-minute free play task, and (iii) a three minute command task.

Note: This system can also be applied to code children aged 12 – 18 months interacting with their mothers during 3-minute puzzle and free play periods.

Using an Excel file designed specifically for this coding system, both specific maternal and child behaviours are coded during each interaction.

CODING OF REQUEST/COMPLIANCE SEQUENCES

This scheme focuses on the sequence of exchanges that follow a maternal request and culminate when either the child complies or the mother decides not to pursue the request any further.

In other words, each sequence begins when the mother makes a request. The child can either comply or not comply to the mother's request. If he/she complies, then the sequence has ended.
If the child does not comply, then the mother can repeat her request, or she can choose to abandon it. If she abandons it, then the sequence has ended. If she repeats her request, then again, the child can choose to comply or not to comply. This cycle continues until, as previously mentioned, either the child complies or the mother decides not to pursue the request any further.
Each sequence is numbered and the frequency of sequences is computed.

The start and stop times of each task are recorded in order to be able to compute the number of requests per minute. Beeps generally indicate the start and stop times.

The time and quality of each maternal request are recorded. As well, the mother's request is transcribed in the "Description of Request" box. The quality of each child behaviour in

response to a maternal request (i.e. compliance or noncompliance) is coded as well, and the child's behaviour is described in the description of child behaviour box. It is recommended that the tapes be watched at maximum volume on a monitor with high resolution (not a regular TV).

I. Maternal Codes

These codes attempt to describe each maternal request. A *request* is an utterance made by the mother that requires that her child complete an action, e.g. "*Comb the doll's hair*". Utterances that do not require that the child perform an action are not coded unless otherwise specified. For example, comments that describe the behaviour of the mother or the child are not coded. For example, as the child removes a puzzle piece, the mother narrates, "*Enleve-tu le chien*?" As well, demonstrations are not coded; for example, if the mother says "*Le chien va la*", while placing the dog in the puzzle.

> *Rule of thumb*: When deciding whether a mother's utterance is a request or not, ask yourself, "Is this request compliable?" If the child cannot logically comply with the utterance, then it is not a request.

Do not code requests that are made when the mother is completely off-camera. Also, if a request is not audible, do not code it. Finally, if a request is made as the interaction is ending, it is not coded. In other words, if the timer beeps before the child has a chance to comply (less than one second following the time of the request), then the request is not coded. As well, at any time during the interaction, incomplete requests are not coded, e.g. "*Put the book…*"

Note that the exact time at which the mother *completes* her request must be recorded in hours, minutes, seconds, and frames; there are 30 frames to a second. For example, 1:04:51:29 . The Excel program will automatically convert the unit of measurement to seconds, e.g. 1:04:51:29 would be converted to 3891.97 seconds.

To obtain the time of request, watch until the end of the request and make note of physical cues, behaviours, gestures that occur as the request is ending. Rewind to the start of the request.
Watch the request frame-by-frame to find the exact moment when the mother's mouth stops moving and the sound of her voice cannot be heard.

1. **Request Status**. The status of the request signifies whether the request marks the beginning of a sequence, and whether the mother's requests are in tune with her child's behaviour. These codes are mutually exclusive.

After the mother has made a request, she may want to repeat it. Each repetition is coded as a *separate* request. A repetition does not need to use the exact same words as the initial

request. A repetition is simply a request that prompts the child to complete the same action as the request immediately prior to it. It is helpful to examine the content and structure of the sentence in order to determine whether it is a repetition. A repetition must occur less than 10 seconds after the initial request (or the previous repetition).

a) ***Initial request***. This request marks the beginning of a sequence. For example, "*Put the puzzle piece here*".

b) ***Contingent repetition***. The request is an exact repetition or a similar variation of the initial request. It is contingent on the child's behaviour in response to the previous request; in other words, the mother has repeated her request because her child did not comply with the initial request. For example, "*It goes here*" or "*Put the piece here*".

c) ***Non-contingent repetition***. The request is an exact repetition or a similar variation of the initial request. The content of the request may be the same as that of a contingent repetition, however in this case, the repetition is not contingent on the child's behaviour in response to the previous request. It is coded if the mother repeated her request when her child (i) already complied (correctly) with the previous request, (ii) is *in the process* of complying to the previous request, (iii) did not yet have time to comply to the previous request, i.e. the request occurred less than 1 second following the previous request, or (iv) received a ***No Code*** in response to the previous request.

Suppose a child complies with a request, however, he does so *incorrectly*; for example, the mother says "*Give me the red cup*", and the child hands her the blue cup. When the mother repeats a request after the child has incorrectly complied with it, the repetition is not coded as such. In this case, it is coded as an initial request because the child *attempted* to comply, thus ending the sequence.

Another ambiguity may occur when a mother makes a series of repetitions that is interrupted by an unrelated request. For example, a mother might say, "*S'il te plait, places le chien. Places le. Restes ici. Places le chien*." In this case, "*S'il te plait place le chien*" is an **initial** request, and "*places le*" is a **repetition**. Since "*restes ici*" is not related to the previous request, it is the start of a new sequence, and is coded as an **initial** request. Similarly, "*places le chien*" is also unrelated to the previous request, so it too is coded as an **initial** request. Make special note of such interrupted sequences, for future reference.

2. **Request Strategy**. These codes describe the level of power-assertiveness of each maternal request, from least to most power-assertive. These codes are also mutually exclusive.

a) ***Negotiation.*** This code refers to a subtle type of request in which the mother attempts to take the child's wishes into consideration. In other words, the mother is requesting compliance *in exchange* for what the child wants. Such phrases are often

in the conditional form, i.e. if _____ , then _____ . For example, a mother might say, "*First you do something for me, then I'll do something for you*", instead of "*Can you do something for me*?" (guidance), or "*Do something for me*" (control).

b) ***Guidance***. This type of request attempts to direct the child's behaviour non-intrusively. The request takes many forms, but does *not* contain a verb conjugated in the imperative. Requests that take this code may be in the form of suggestions, indirect commands, questions, or prompts.

For example:

- The mother indirectly requests that her child perform a task. There are several possible variations of this type of request, just to name a few: *"Il faut / faudrait que tu…", "Tu devrais…", "Je veux que tu…", "J'aimerais que tu…", "Tu ____-tu…" (Tu brosses-tu mes cheveux. Tu fais-tu manger le bebe.)*

- The mother might make a suggestion that lacks a verb. The mother *must* be pointing or showing something to her child, while making such a request. For example, *"Ca va ici"*, "*It goes the other way*", or *"Il va au bout"*, while pointing to a spot in the puzzle. It is important to ensure that the mother is not intervening physically; see request strategy (d).

- Guidance requests can comment on how an action should be performed (i.e. an adverb), such as "*Doucement!",* or *"Il faut le mettre doucement".* Note that the child's behaviour will be ***no code*** if compliance is not clearly observable.

- The mother asks a question. In order to be coded, questions must require that the child perform an action (aside from merely answering the question). There are 2 scenarios that may occur: (1) In the case of young children, mothers typically ask for the location of an object (such as a body part) in order to have the child touch or point to that object. For example, "*Where is your nose*?", instead of, "*Show me your nose*," or "*Where does this piece go*?" instead of "*Place this piece in the puzzle*". (2) Another situation may occur where the mother asks the child if they could or would like to do something, e.g. "*Veux-tu peigner mes cheveux?*" In such an instance, the mother is gently guiding the child to perform a desired action (i.e. a ***guidance*** request). She is not actually interested in whether or not the child *could* or *wants* to do the task. Similar examples include, *"Est-ce que tu peux…?", "Es-tu capable de…?", "Ca tente-tu de…?"* This type of request may also be phrased in the inverse, e.g. "*Tu ne veux pas peigner mes cheveux?*" The inverse type of this request usually occurs in the form of a repetition, when the mother recognizes that the child may not want to comply. Questions that ask for information, such as "*What animal is this*?" or "*What colour is this*?" are not coded as requests.

- The mother labels an object. When a mother names a puzzle piece and shows it to the child, if she does not provide any indication that she wants her child to place the piece in the puzzle, then the mother is merely teaching vocabulary and the utterance should not be coded. This situation often occurs with very young children (toddlers). For example, if a mother takes out a new puzzle, she may want to teach her child the names of the pieces before they begin to complete to puzzle. In this case, she might remove each piece one at a time, show it to the child, name it, and place it back in the puzzle. Here, the naming would not be coded as a request. Another example that you would not code is when the mother names a puzzle piece after her child has selected it to place in the puzzle. In this case the mother is merely narrating what the child is doing. On the other hand, suppose a mother takes a piece from the puzzle, hands it to her child and says "*Put the cat in the puzzle*". After the child complies, the mother might pick up another piece, hand it to her child, and simply say, "*The dog…*" In this situation, the naming is actually a prompt for the child to put the piece in the puzzle. The mother is merely saving time by not repeating the whole phrase, "*Put the dog in the puzzle*". Here, the naming is coded as a request.

- Guidance requests can also take the form of prohibitions. Prohibitions are only to be coded as ***guidance*** requests if they are synonymous to *"Arrete ca!"* (***control***), i.e. *"C'est assez!"* or *"Ca suffit!"*.

- Prompts can include, "*It goes here*" or "*Tu l'esssaye tu*?" If a mother prompts the child by only calling his name, do not code this as a request, e.g. "*Justin!*"

The following are not to be coded as ***guidance*** requests:

- "Let's" statements are not requests. (i.e. *"On va…"*) Usually, mothers employ this phrase to set up a new activity. E.g., "*Let's pick up the pieces*," or "*Let's do this puzzle.*" "*On va faire cette casse-tete." "On enleve les blocks*."
- Encouraging phrases are not coded as requests, e.g. "*tu vas l'avoir*…"

c) ***Control***. This code applies to requests that are phrased in the imperative tense. They may or may not include the word "please". For example, "*Turn the page*", "*Stand up, please*," "*Don't throw blocks!*".

Sometimes, mothers will employ certain verbs in the imperative, yet they are not doing so with the intention of having their child perform a specific tangible action in order to comply with a request. Such requests include: "*Tiens*", "*Attends*", *"Attention!"*. Other times, mothers will use words in the imperative to get their child's attention, as in the case of "*ecoutes*", or "*regardes*". These requests should all be coded as ***Control***.

*** *"Regardes"* - A special case:

In order not to inflate the number of requests, a special rule is applied to the "*Regardes*" command. If "*regardes*" is followed by a request such that the second request starts less than 1 second after the "*regardes*" finishes, then code the 2 utterances as one request. For example, at 0:01:30:01 the mother says, "*regardes*". Then at 0:01:30:21 she begins to say, "*Apportes moi le livre".* This should be coded as one request, i.e. *"Regardes, apportes moi le livre,"* and the appropriate ***compliance/non-compliance*** code should be assigned to the latter part of the sentence.

However, if "*regardes*" is followed within one second by another "*regardes*", then do NOT code the two utterances as one request. Rather, code them as an initial request, followed by a repetition.

If "*regardes*" is followed by a phrase that is not a request, such as "*Regardes, on va lire un livre*", then only code the word "*regardes*". If "*regardes*" is the first word in a sentence, then do not truncate the sentence, e.g. "*Regardes le beau livre*". Code the entire sentence.

*** Notes about **child behaviours** (for further detail see section II):

- It is important to be aware that the child's behaviour in response to these requests (i.e. "*Tiens*", "*Attends*", *"Attention!",* "*Ecoutes*") may not be clearly observable, due to the intangible nature of the request. Thus, when a mother makes these requests, the child should be assigned a ***no code*** (see child behaviour code ***e***).

- The word "*Regardes*" is always coded as ***control***. As previously discussed, it is often used to get the child's attention, however it is also often used in order to get the child to look at a particular item, or in a certain direction. If the mother seems to want her child to look in particular direction (e.g. she is pointing at or showing an item), then assign to the child's behaviour the appropriate ***compliance/ noncompliance/ in progress*** code. If she seems to be simply getting the child's attention, then assign the child a ***no code*** (e.g. "*Regardes, tu dois faire des petits choses pour maman.*")

- A similar case can be made for the word "*Viens"*, which is always coded as ***control***. If the mother wants her child to go somewhere, then assign the child's behaviour the appropriate ***compliance/ noncompliance/ in progress*** code. If she seems to be simply getting the child's attention, then assign the child a ***no code***.

- Sometimes, mothers will issue a command that ends in an adverb in order to tell the child *how* to do something, e.g. *"Regardes bien", or "Fais-le doucement"*. These statements are coded as ***control***, however, if the child's compliance/ noncompliance is not clearly observable, then the child's behaviour is assigned a

no code (see section II.1.f.vi). Keep in mind that, sometimes, the child's behaviour in response to these requests is observable, and merits the appropriate compliance/ noncompliance code.

- Similarly, mothers often ask their children to do something *properly*, i.e. "*Places le comme il faut",* or *"Regardes comme il faut".* When coding the child's behaviour in response to such requests, treat the request as if "*comme il faut*" wasn't there. For example, if a mother says, "Rentres-le comme il faut", code whether or not the child complies with "*Rentres-le*".

d) ***Physical intervention***. This code is used when the mother makes a request *and* intervenes physically. This code manifests itself in three ways:

Type 1: When mom uses force (not necessarily negatively) to ensure task completion (e.g. *"Stay on the mat",* while holding on to child so he doesn't leave the mat).
Type 2: When mom requests a task and immediately completes it herself (e.g. *"Get the baby",* while almost simultaneously getting the baby).
Type 3: When mom requests a task and physically guides the child in a didactic manner (e.g. *"Turn the puzzle piece*", while holding the child's hand and helping him to turn it) .

Type 1 and 2 are essentially the same in that the mother is physically ensuring task completion; the distinction is that type 1 involves the mother and the child's body, whereas type 2 involves the mother and an object.

More specifically, if the mother makes a ***control, guidance, or negotiation*** request while using physical force to make the child comply, then code the request as ***physical*** (type 1). If the mother makes a ***control*** request while completing the task herself, code this as ***physical*** too (type 2, 3). But, if the mother makes a ***guidance or negotiation*** request while completing the task herself, then this utterance is a *demonstration*, and it should not be coded at all.

When coding a **physical** request, indicate in the "Description of Request" box whether the request was type 1, 2, or 3.

Note that picking up an item and showing it to the child does not constitute a physical request. For example, suppose a mother says, "Regardes ici", while picking up a puzzle piece. This is not a physical request because holding up the piece is equivalent to pointing to it.

II. Child Codes

These codes attempt to describe the child's behaviour in response to a maternal request, i.e. compliance or non-compliance. Utterances or behaviours made by the child that are not in response to maternal requests are not coded.

1. **Child Behaviour in Response to Maternal Request**. In response to a request, the child can choose to comply or not. Three types of non-compliance can be coded, ranging from most to least skillful. All of these codes are mutually exclusive as well.

a) ***Compliant behaviour***. The child has performed the requested behaviour. Is is not sufficient for a child to say that they will comply; they must actually perform the requested task. For example, if a mother says, "*Veux-tu enlever ton pantouffle?*" (a ***guidance*** request), and the child responds, "*Oui*", then the child's response is not coded as compliance, unless the child actually performs the desired action, i.e. she removes her slipper. It is helpful to think of the following instance. Suppose a child is watching television, when his mother says, *"Turn off the T.V. and start your homework."* If the child says, *"Yes, mom"* but does not actually turn off the T.V., he has not complied with her request.

This code is used even when the child attempts to comply, but the behaviour is performed incorrectly (for example, the mother asks for the brush and the child brings the comb, or the mother says "*Where does this piece go?*", and the child points to the incorrect spot).

Compliance may be ambiguous if the child initiates compliance but then becomes distracted before completing the requested task. If the child never resumes compliance after becoming distracted, then assign the appropriate noncompliance code. If the child does eventually comply with the request after becoming distracted, only code ***compliance*** if compliance is resumed in the five seconds following the initiation of compliance. If on the other hand, the child resumes compliance *after* 5 seconds have elapsed since the initiation of compliance, then select the appropriate noncompliance code.

Note: It is not possible for a child to comply to a physical request, because you cannot infer whether the child is willingly complying, or whether the child *appears* to be complying as a result of the mother's use of force.

b) ***Self-assertive behaviour***. The child does not comply with the request, but responds to the mother *verbally* in a *non-negative* tone. This code should reflect when a child is non-compliant, but is addressing the request, and/or asserting his/her own interests. Self-assertiveness may take the form of a simple refusal, a request for an explanation or a clarification, a negotiation, etc. Example of such behaviour include, "*No*", "*Why*?", "*I want to do ____ first*", "*I'll do it later*", "*Which book*?", etc. A child shaking his head to mean "*no*" is also given this code. This behaviour should not

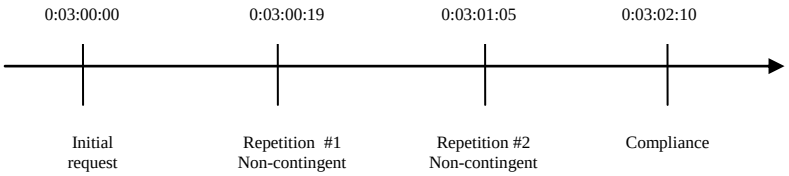
appear as a stalling technique, for example, if the child says "*oui*", but doesn't actually do what the mother requested.

c) ***Passive non-compliance***. The child does not comply, but does not overtly refuse. In other words, the child essentially ignores the mother's request, while maintaining a non-negative attitude. For example, he/she might walk away calmly, play with some toys, or continue what he/she was already doing.

d) ***Defiant behaviour***. The child overtly refuses (not necessarily verbally) with an angry, defiant, or generally negative affect.

e) ***No opportunity to comply***. This code is always used to describe child behaviour (or lack thereof) that takes place between an initial request and any *repetitions* that occur in the second following the initial request. For an illustration, see figure 2.

Figure 2. At 0:03:00:00, the mother makes a request. She repeats her request at 0:03:00:19, and again at 0:03:01:05. At 0:03:02:10, the child complies.



After the initial request, the child has no opportunity to comply because the next request is a non-contingent repetition (it occurred less than 1 second following the previous request). Thus, the child's behaviour is coded as ***No Opportunity***. After the first repetition, the child's lack of compliance is NOT coded as ***No Opportunity*** because, although the next repetition occurred in the second following the *previous* request, over 1 second has elapsed since the *initial* request. After the second repetition, the behaviour is coded as compliance.

f) ***In progress.*** The completion of the task is *in progress* before the time of the mother's request. In other words, the child is already doing what the mother is requesting. A common example is when the mother says "*Regardes*", but the child is already looking in the specified direction before the completion of the request. In this case, in order to obtain a ***compliance*** code, the child would have to shift the direction of his/her gaze. If a gaze shift is not necessary, then the task is likely already ***in progress***.

Another example is when the mother makes a multi-step request such as, "*Feed the baby."* The child begins to gather the spoon, bowl, etc. so his behaviour is coded as ***Compliance***. Even though the child has already begun to comply, the mother then repeats her request. Her request is coded as a non-contingent repetition because the

child is already in the process of complying to the initial request. The child's behaviour following the repetition is assigned an ***in progress*** code.

g) ***No code***. This code can be used when:

(i) It is *not clearly apparent* whether or not the child has completed the request. For example, (1) the child, or the behaviour, is obstructed from view, or (2) the mother has made a request for an action that is not clearly observable, i.e. "*ecoutes-moi*", "*faites attention*", "…*comme il faut*". "*Regardes*" is a special case because sometimes it is observable, and sometimes it is not. If you can clearly see that the child has (or has not) shifted his gaze to look in the direction that the mother is requesting, then assign the appropriate compliance code. If it seems that the child is already looking in that direction, then assign the ***in progress*** code. If you cannot determine whether or not the child is complying with the "*regarde*s" request, then assign the ***no code***.

(ii) The mother makes a request using ***physical intervention***. Note that this code does *not* necessarily follow a physical intervention request. It is possible for a child not to comply with a request that employs a physical intervention. For example, suppose a child starts to walk away from the mat. If, while he is still standing on the mat, his mother holds on to his arm and says, "*Stay on the mat*", then logically, he has no choice but to do so and his behaviour does not necessarily reflect compliance. He is thus given the ***No Code***. If, however, a child is standing on the mat and his mother holds his arm and says, "*Sit down*", the child can either sit, or resist his mother's force and remain standing. If he remains standing, he is given the *appropriate* noncompliance code. If he sits, he is given the ***No Code*** because we cannot infer whether he sat willingly or because his mother pulled him down.

(iii) the mother makes a request (usually a prohibition) that has implications for the *long-term*, e.g. "*Don't throw blocks*!" A distinction needs to de made between two possible scenarios that may arise. In the first situation, a child throws a block. His mother says, "*Don't throw blocks*!" Since he was not throwing blocks when the mother made her request, he cannot logically comply at this point in time. He is thus assigned a ***No Code***. Alternately, suppose a child is continually throwing blocks. While he is doing so, his mother says, "*Don't throw blocks!*" Now, the child can choose to comply (stop throwing the blocks) or not to comply (continue throwing the blocks). He is <u>not</u> given the ***No Code***, but rather the appropriate compliance/noncompliance code.

(iv) the mother makes a request such that the child needs to comply verbally. For example, the mother hands the child the phone and says, "*Dit allo*". <u>Note: this only applies when coding infants (less than 24 months of age).</u>

Appendix P

Detailed tables for significant regression analyses summarized in dissertation study

(Tables P1 through P13)

Table P1

Hierarchical Regression Predicting Children's Mutuality Behaviours (n = 94)

	Mutuality Support					Mutuality Interference				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				**0.21**	**11.75*** **				**0.21**	**11.71*** **
Mother's mutuality support	**0.27**	**0.07**	**2.90****			0.04	0.00	0.41		
Mother's mutuality interference	**0.36**	**0.13**	**3.80*** **			**0.45**	**0.20**	**4.81*** **		
Step 2				0.02	0.78				0.02	0.76
Mothers' mutuality support	**0.27**	**0.07**	**2.86****			0.05	0.00	0.51		
Mothers' mutuality interference	**0.34**	**0.11**	**3.53****			**0.47**	**0.21**	**4.82*** **		
Mother's age at testing	-0.10	0.01	-1.40			0.03	0.00	0.35		
Mother's education (years)	-0.08	0.01	-0.87			-0.11	0.01	-1.15		
Family prestige	0.03	0.00	0.35			-0.11	0.01	-1.10		
Step 3				0.02	0.90				**0.05**	**3.24***
Mothers' mutuality support	**0.28**	**0.08**	**2.91****			0.06	0.00	0.64		
Mothers' mutuality interference	**0.32**	**0.09**	**3.15****			**0.44**	**0.16**	**4.41*** **		
Mother's age at testing	-0.10	0.01	-1.00			0.04	0.00	0.43		
Mother's education (years)	-0.07	0.00	-0.69			-0.08	0.01	-0.84		
Family prestige	0.01	0.00	0.13			-0.15	0.02	-1.51		
Child's age at testing	0.12	0.01	1.20			**0.22**	**0.04**	**2.17***		
Child's sex	-0.04	0.00	-0.35			-0.08	0.01	-0.87		
	R = 0.49		R^2_{Adj} =0.18		F = 3.91**	R = 0.53		R^2_{Adj} = 0.22		F = 4.76***

[a]1 = male, 2 = female.

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

Table P2

Hierarchical Regression Predicting Dyadic Mutuality (n = 94)

	Dyadic Mutuality				
Variables	β	sr^2	t	ΔR^2	ΔF
Step 1				**0.13**	**6.98****
Mothers' mutuality support	**0.36**	**0.13**	**3.67*****		
Mothers' mutuality interference	-0.08	0.01	-0.80		
Step 2				**0.09**	**4.86****
Mothers' mutuality support	**0.27**	**0.07**	**2.77****		
Mothers' mutuality interference	-0.16	0.02	-1.49		
Child mutuality support	**0.34**	**0.09**	**3.12****		
Child mutuality interference	-0.08	0.00	-0.73		
Step 3				0.14	0.52
Mothers' mutuality support	**0.27**	**0.07**	**2.72****		
Mothers' mutuality interference	-0.16	0.02	-1.46		
Child mutuality support	**0.31**	**0.07**	**2.85****		
Child mutuality interference	-0.07	0.00	-0.67		
Mother's age at testing	-0.10	0.01	-1.08		
Mother's education (years)	-0.04	0.00	-0.45		
Family prestige	0.02	0.00	0.22		
Step 4				**0.07**	**4.04***
Mothers' mutuality support	**0.26**	**0.06**	**2.68****		
Mothers' mutuality interference	**-0.26**	**0.04**	**-2.28***		
Child mutuality support	**0.32**	**0.07**	**2.97****		
Child mutuality interference	-0.06	0.00	-0.51		
Mother's age at testing	-0.11	0.01	-1.17		
Mother's education (years)	-0.03	0.00	-0.35		
Family prestige	0.03	0.00	0.32		
Child age	0.09	0.01	0.84		
Child sex[a]	**0.27**	**0.07**	**2.82****		
	R = 0.55		R^2_{Adj} = 0.23		F = 3.99***

[a]1 = male, 2 = female.
*p < .05. **p < .01. ***p < .001.

Table P3

Hierarchical Regression Predicting Children's Autonomy Behaviours (n = 94)

	Autonomy Support					Autonomy Interference				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				**0.37**	**26.88*** **				**0.25**	**15.48*** **
Mothers' autonomy support	**0.57**	**0.33**	**6.90*** **			**0.30**	**0.09**	**3.27** **		
Mothers' autonomy interference	**0.20**	**0.04**	**2.36***			**0.40**	**0.16**	**4.45*** **		
Step 2				0.02	1.05				0.02	0.60
Mothers' autonomy support	**0.58**	**0.33**	**6.89*** **			**0.30**	**0.09**	**3.29** **		
Mothers' autonomy interference	**0.15**	**0.02**	**1.68**[t]			**0.40**	**0.15**	**4.18*** **		
Mother's age at testing	-0.02	0.00	-0.22			-0.10	0.01	-1.082		
Mother's education (years)	-0.04	0.00	-0.46			-0.04	0.00	-0.387		
Family prestige	0.14	0.02	1.65			-0.06	0.00	-0.621		
Step 3				**0.05**	**3.54***				**0.06**	**4.13***
Mothers' autonomy support	**0.59**	**0.34**	**7.17*** **			**0.31**	**0.10**	**3.49** **		
Mothers' autonomy interference	0.12	0.01	1.33			**0.36**	**0.11**	**3.77*** **		
Mother's age at testing	-0.02	0.00	-0.28			-0.10	0.01	-1.14		
Mother's education (years)	-0.04	0.00	-0.44			-0.02	0.00	-0.20		
Family prestige	0.14	0.02	1.63			-0.08	0.01	-0.90		
Child age	0.08	0.01	0.88			**0.20**	**0.04**	**2.17***		
Child sex[a]	**0.22**	**0.04**	**2.62** **			**0.20**	**0.04**	**2.20***		
	R = 0.66	R^2_{Adj} = 0.39		F = 9.62***		R = 0.58	R^2_{Adj} = 0.28		F = 6.13***	

[a]1 = male, 2 = female.

[t]*p* < .10. **p* < .05. ***p* < .01. ****p* < .001.

Table P4

Hierarchical Regression Using Mutuality to Predict Children's Autonomy Behaviours (n = 94)

	Autonomy Support					Autonomy Interference				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				0.37	10.18***				0.12	2.50*
Mothers' mutuality support	0.01	0.00	0.13			0.02	0.00	0.17		
Mothers' mutuality interference	0.15	0.02	1.51			0.05	0.00	0.39		
Child mutuality support	**0.34**	**0.08**	**3.30****			0.01	0.00	0.05		
Child mutuality interference	**0.28**	**0.06**	**2.84****			**0.29**	**0.06**	**2.53***		
Dyadic mutuality	0.05	0.00	0.52			0.16	0.02	1.38		
Step 2				0.15	13.09***				0.15	9.12***
Mothers' mutuality support	-0.04	0.00	-0.42			0.04	0.00	0.38		
Mothers' mutuality interference	**0.19**	**0.02**	**2.01***			-0.03	0.00	-0.28		
Child mutuality support	**0.24**	**0.04**	**2.56***			-0.02	0.00	-0.19		
Child mutuality interference	0.12	0.01	1.33			0.17	0.02	1.54		
Dyadic mutuality	0.01	0.00	0.09			0.06	0.00	0.54		
Mothers' autonomy support	**0.43**	**0.14**	**5.04*****			**0.23**	**0.04**	**2.16***		
Mothers' autonomy interference	0.09	0.01	1.11			**0.37**	**0.12**	**3.78*****		
Step 3				0.03	2.40^t				0.06	3.59*
Mothers' mutuality support	-0.04	0.00	-0.43			0.06	0.00	0.56		
Mothers' mutuality interference	0.13	0.01	1.32			-0.12	0.01	-1.07		
Child mutuality support	**0.27**	**0.05**	**2.88****			-0.02	0.00	-0.16		
Child mutuality interference	0.15	0.01	1.57			0.14	0.01	1.25		
Dyadic mutuality	-0.04	0.00	-0.47			-0.02	0.00	-0.17		
Mothers' autonomy support	**0.43**	**0.14**	**5.04*****			**0.27**	**0.05**	**2.56***		
Mothers' autonomy interference	0.09	0.01	1.21			**0.36**	**0.11**	**3.74*****		
Child age	-0.03	0.00	-0.33			**0.19**	**0.03**	**1.87^t**		
Child sex[a]	**0.17**	**0.02**	**2.05***			**0.22**	**0.04**	**2.28***		
	R = 0.74		R^2_{Adj} = 0.49		F = 10.98***	R = 0.58		R^2_{Adj} = 0.26		F = 4.69***

[a]1 = male, 2 = female.

[t]$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table P5

Hierarchical Regression Predicting Mothers' Autonomy Behaviours (n = 94)

	Autonomy Support					Autonomy Interference				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				**0.07**	**3.17***				**0.09**	**4.57***
Mothers' mutuality support	**0.23**	**0.05**	**2.31***			-0.07	0.01	0.70		
Mothers' mutuality interference	0.10	0.01	0.94			**0.30**	**0.09**	**2.96****		
Step 2				**0.17**	**9.78*****				0.01	0.38
Mothers' mutuality support	0.15	0.02	1.56			-0.08	0.01	-0.71		
Mothers' mutuality interference	-0.15	0.02	-1.36			**0.25**	**0.05**	**2.15***		
Child mutuality support	**0.26**	**0.05**	**2.45***			0.01	0.00	0.05		
Child mutuality interference	**0.33**	**0.08**	**3.10****			0.10	0.01	0.84		
Step 3				0.00	0.20				**0.04**	**4.42***
Mothers' mutuality support	0.14	0.02	1.36			-0.14	0.02	-1.29		
Mothers' mutuality interference	-0.14	0.01	-1.26			**0.29**	**0.06**	**2.49***		
Child mutuality support	**0.25**	**0.04**	**2.17***			-0.07	0.00	-0.61		
Child mutuality interference	**0.33**	**0.08**	**3.12****			0.12	0.01	1.02		
Dyadic mutuality	0.05	0.00	0.45			**0.24**	**0.04**	**2.10***		
Step 4				0.04	2.14				0.03	1.77
Mothers' mutuality support	0.11	0.01	1.07			-0.11	0.01	-0.99		
Mothers' mutuality interference	-0.14	0.01	-1.27			**0.29**	**0.06**	**2.49***		
Child mutuality support	**0.26**	**0.05**	**2.37***			-0.09	0.01	-0.76		
Child mutuality interference	**0.35**	**0.09**	**3.29****			0.10	0.01	0.86		
Dyadic mutuality	0.07	0.00	0.64			**0.22**	**0.04**	**1.96***		
Mother's age at testing	0.05	0.00	0.52			-0.02	0.00	-0.19		
Mother's education (years)	**0.18**	**0.03**	**1.93***			**-0.19**	**0.03**	**1.84**[t]		
Step 5				0.02	1.11				0.01	0.29
Mothers' mutuality support	0.09	0.01	0.92			-0.10	0.01	-0.92		
Mothers' mutuality interference	-0.10	0.01	-0.86			**0.28**	**0.05**	**2.26***		
Child mutuality support	**0.27**	**0.05**	**2.40***			-0.10	0.01	-0.81		
Child mutuality interference	**0.38**	**0.10**	**3.46****			0.08	0.00	0.68		
Dyadic mutuality	0.09	0.01	0.84			**0.22**	**0.03**	**1.84**[t]		
Mother's age at testing	0.05	0.00	0.55			-0.02	0.00	-0.17		
Mother's education (years)	**0.17**	**0.03**	**1.73**[t]			**-0.18**	**0.03**	**1.71**[t]		
Child age	-0.15	0.02	-1.46			0.08	0.01	0.74		
Child sex[a]	-0.06	0.00	-0.60			-0.01	0.00	-0.05		
	R = 0.54		R^2_{Adj} = 0.21	F = 3.82***		R = 0.43		R^2_{Adj} = 0.09	F = 2.07*	

[a]1 = male, 2 = female.

[t]$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

Table P6

Hierarchical Regressions Using Mothers' Childhood Histories to Predict Mothers' and Children's Behaviours (n = 64)

	Mothers' Mutuality Interference[b]					Children's Autonomy Support				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				**0.08**	**2.57[t]**				0.03	1.03
Maternal childhood aggression	0.06	0.00	0.52			-0.10	0.01	-0.78		
Maternal childhood withdrawal	**-0.27**	**0.07**	**-2.15***			-0.16	0.03	-1.27		
Step 2				0.01	0.46				0.01	0.33
Maternal childhood aggression	0.05	0.00	0.40			-0.11	0.01	-0.86		
Maternal childhood withdrawal	**-0.27**	**0.07**	**-2.20***			-0.17	0.03	-1.31		
Mother's age at testing	-0.09	0.00	-0.68			-0.07	0.01	-0.57		
Step 3				**0.12**	**4.29***				**0.1**	**3.21***
Maternal childhood aggression	0.00	0.00	-0.03			-0.16	0.02	-1.27		
Maternal childhood withdrawal	-0.17	0.03	-1.38			-0.08	0.01	-0.59		
Mother's age at testing	-0.04	0.00	-0.33			-0.04	0.00	-0.28		
Child age	**0.27**	**0.06**	**2.16***			**0.24**	**0.05**	**1.78[t]**		
Child sex[a]	**0.31**	**0.09**	**2.49***			**0.29**	**0.07**	**2.22***		
Step 4									**0.06**	**4.32***
Maternal childhood aggression						**-0.32**	**0.07**	**-2.22***		
Maternal childhood withdrawal						-0.10	0.01	-0.819		
Mother's age at testing						0.03	0.00	0.256		
Child age						**0.24**	**0.05**	**1.88[t]**		
Child sex[a]						**0.33**	**0.10**	**2.60***		
Aggression x Withdrawal						**0.31**	**0.06**	**.042***		
	R = 0.45		R^2_{Adj} = 0.13		F = 2.95*	R = 0.44		R^2_{Adj} = 0.11		F =2.30*

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression x Withdrawal interaction term was not significant.
[t]$p < .10$. *$p < .05$.

Table P7

Hierarchical Regressions Using Autonomy to Predict Children's Problem Behaviours (n = 64)

	Child-Rated Internalizing Problem Behaviours[b]					Mother-Rated Social Problems[b]				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				0.01	0.27				0.02	0.69
Maternal childhood aggression	-0.01	0.00	-0.11			0.15	0.02	1.16		
Maternal childhood withdrawal	-0.09	0.01	-0.74			-0.02	0.00	-0.12		
Step 2				0.03	1.02				0.00	0.06
Maternal childhood aggression	-0.01	0.00	-0.05			0.15	0.02	1.13		
Maternal childhood withdrawal	-0.08	0.01	-0.64			-0.02	0.00	-0.13		
Children's autonomy support	0.01	0.00	0.05			0.01	0.00	0.08		
Children's autonomy interference	0.18	0.03	1.33			-0.05	0.00	-0.36		
Step 3				**0.13**	**9.24****				**0.19**	**13.92*****
Maternal childhood aggression	-0.06	0.00	-0.48			**0.21**	**0.04**	**1.763[t]**		
Maternal childhood withdrawal	-0.03	0.00	-0.24			-0.08	0.01	-0.68		
Children's autonomy support	-0.06	0.00	-0.48			0.10	0.01	0.75		
Children's autonomy interference	0.14	0.02	1.09			0.00	0.00	0.00		
Child sex[a]	**0.38**	**0.13**	**3.04****			**-0.46**	**0.19**	**-3.73*****		
	R = 0.42		R^2_{Adj} = 0.10		F =2.44*	R = 0.46		R^2_{Adj} = 0.15		F = 3.14*

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression x Withdrawal interaction term was not significant.
*p < .05. **p < .01. ***p < .001.

Table P8

Hierarchical Regressions Using Mutuality to Predict Children's Problem Behaviours (n = 64)

	Child-Rated Internalizing Problem Behaviours[b]					Mother-Rated Social Problems[b]				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				0.01	0.27				0.02	0.69
Maternal childhood aggression	-0.01	0.00	-0.11			0.15	0.02	1.16		
Maternal childhood withdrawal	-0.09	0.01	-0.74			-0.02	0.00	-0.12		
Step 2				0.01	0.42				**0.13**	**4.32***
Maternal childhood aggression	-0.01	0.00	-0.06			0.16	0.02	1.29		
Maternal childhood withdrawal	-0.11	0.01	-0.83			0.06	0.00	0.50		
Children's mutuality support	0.10	0.01	0.70			-0.09	0.01	-0.69		
Children's mutuality interference	-0.12	0.01	-0.81			**0.39**	**0.12**	**2.91****		
Step 3				**0.14**	**9.34****				**0.14**	**11.51****
Maternal childhood aggression	-0.06	0.00	-0.45			**0.21**	**0.04**	**1.82[t]**		
Maternal childhood withdrawal	-0.03	0.00	-0.25			-0.02	0.00	-0.16		
Children's mutuality support	0.04	0.00	0.31			-0.03	0.00	-0.26		
Children's mutuality interference	-0.04	0.00	-0.30			**0.31**	**0.08**	**2.50***		
Child sex[a]	**0.39**	**0.14**	**3.06****			**-0.39**	**0.14**	**-3.39****		
	R = 0.40		R^2_{Adj} = 0.09		F = 2.18[t]	R = 0.54		R^2_{Adj} = 0.23		F =4.70**

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression X Withdrawal interaction term was not significant.
[t]$p < .10$. *$p < .05$. **$p < .01$.

Table P9

Hierarchical Regression Predicting Teacher-Rated Social Competence (n = 64)

	Teacher-Rated Social Competence[b]				
Variables	β	sr^2	t	ΔR^2	ΔF
Step 1				0.02	0.49
Maternal childhood aggression	-0.12	0.02	-0.96		
Maternal childhood withdrawal	-0.04	0.00	-0.30		
Step 2				**0.11**	**3.81***
Maternal childhood aggression	-0.10	0.01	-0.85		
Maternal childhood withdrawal	-0.01	0.00	-0.04		
Children's autonomy support	**0.30**	**0.08**	**2.31***		
Children's autonomy interference	**-0.29**	**0.07**	**-2.20***		
Step 3				0.03	1.91
Maternal childhood aggression	-0.13	0.02	-1.05		
Maternal childhood withdrawal	0.02	0.00	0.16		
Children's autonomy support	**0.27**	**0.06**	**2.05***		
Children's autonomy interference	**-0.30**	**0.08**	**-2.35***		
Child sex[a]	0.18	0.03	1.38		
	R = 0.40		R^2_{Adj} = 0.08		F = 0.07[t]

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression x Withdrawal interaction term was not significant.
[t]$p < .10$. *$p < .05$.

Table P10

Hierarchical Regressions Predicting Teacher-Rated Interpersonal Problem Behaviours Using Mutuality (a) and Autonomy (b) as Predictors (n = 64)

		Teacher-Rated Interpersonal Problem Behaviours[b]				
	Variables	β	sr^2	t	ΔR^2	ΔF
(a)						
	Step 1				0.02	0.52
	Maternal childhood aggression	0.08	0.01	0.60		
	Maternal childhood withdrawal	-0.10	0.01	-0.77		
	Step 2				**0.09**	**2.80[t]**
	Maternal childhood aggression	0.09	0.01	0.72		
	Maternal childhood withdrawal	-0.03	0.00	-0.25		
	Children's mutuality support	-0.03	0.00	-0.25		
	Children's mutuality interference	**0.31**	**0.08**	**2.285***		
	Step 3				**0.08**	**5.55***
	Maternal childhood aggression	0.13	0.02	1.04		
	Maternal childhood withdrawal	-0.09	0.01	-0.73		
	Children's mutuality support	0.01	0.00	0.07		
	Children's mutuality interference	**0.25**	**0.05**	**1.91[t]**		
	Child sex[a]	**-0.29**	**0.08**	**-2.36***		
		R = 0.43		R^2_{Adj} = 0.11		F = 2.55*
(b)						
	Step 1				0.02	0.52
	Maternal childhood aggression	0.08	0.01	0.60		
	Maternal childhood withdrawal	-0.10	0.01	-0.77		
	Step 2				0.06	1.94
	Maternal childhood aggression	0.07	0.005	0.58		
	Maternal childhood withdrawal	-0.11	0.01	-0.83		
	Children's autonomy support	-0.14	0.02	-1.02		
	Children's autonomy interference	**0.26**	**0.06**	**1.93[t]**		
	Step 3				**0.12**	**8.49****
	Maternal childhood aggression	0.12	0.02	1.03		
	Maternal childhood withdrawal	-0.16	0.02	-1.30		
	Children's autonomy support	-0.07	0.00	-0.56		
	Children's autonomy interference	**0.30**	**0.08**	**2.35***		
	Child sex[a]	**-0.36**	**0.12**	**-2.91****		
		R = 0.44		R^2_{Adj} = 0.13		F = 2.82*

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression x Withdrawal interaction term was not significant.

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

Table P11

Hierarchical Regression Using Preschool Request Strategies to Predict Mothers' Autonomy Support (n = 41)

	Mothers' Autonomy Support				
Variables	β	sr^2	t	ΔR^2	ΔF
Step 1				**0.15**	**3.38***
Positive request strategies	**0.30**	**0.09**	**1.99***		
Negative request strategies	0.25	0.06	1.67		
Step 2				0.01	0.31
Positive request strategies	**0.30**	**0.09**	**2.01***		
Negative request strategies	0.19	0.03	0.29		
Preschool compliance	-0.10	0.01	0.58		
	$R = 0.40$	$R^2_{Adj} = 0.09$			$F = 2.32^t$

$^t p < .10$. $^* p < .05$.

Table P12

Hierarchical Regression Using Preschool Noncompliance to Predict Children's Autonomy Support (n = 41)

	Children's Autonomy Support				
Variables	β	sr^2	t	ΔR^2	ΔF
Step 1				0.01	0.17
Self-assertion	0.07	0.00	0.27		
Passive noncompliance	0.04	0.00	0.191		
Defiance	0.12	0.02	0.694		
Step 2				**0.38**	**22.28*****
Self-assertion	-0.12	0.01	-0.61		
Passive noncompliance	-0.13	0.02	-0.73		
Defiance	-0.06	0.00	-0.403		
Mothers' Autonomy Support	**0.65**	**0.42**	**4.72*****		
	R = 0.63	R^2_{Adj} = 0.32			**F = 5.77****

***p* < .01. ****p* < .001.

Table P13

Hierarchical Regressions Predicting Children's Behaviour Problems at Middle Childhood (n = 41)

	CBCL Total Problems					CBCL Externalizing Problems				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				**0.11**	**2.45^t**				**0.15**	**3.28***
Same CBCL score at preschool[a]	0.18	0.03	1.16			**0.37**	**0.13**	**2.42***		
Preschool compliance	-0.24	0.06	-1.55			-0.09	0.01	-0.61		
Step 2				0.08	1.88				0.07	1.70
Same CBCL score at preschool[a]	0.17	0.03	1.07			**0.32**	**0.09**	**2.074***		
Preschool compliance	**-0.26**	**0.06**	**-1.70^t**			-0.11	0.01	-0.75		
Child mutuality interference	**0.28**	**0.07**	**1.77^t**			0.25	0.05	1.59		
Child autonomy interference	0.04	0.00	0.26			0.07	0.00	0.48		
	R = 0.45	R^2_{Adj} = 0.11			F = 2.22^t	R = 0.47	R^2_{Adj} = 0.13			F = 2.55^t

[a] i.e., CBCL Total Problems to predict CBCL Total Problems, CBCL Externalizing Problems to predict CBCL Externalizing Problems.
$^t p < .10$. $*p < .05$.

Appendix Q

Detailed tables for nonsignificant regression analyses not reported in dissertation study

(Tables Q1 through Q9)

Table Q1

Hierarchical Regressions Using Mothers' Childhood Histories to Predict Mutuality Behaviours (n = 64)

	Mothers' Mutuality Support[b]					Dyadic Mutuality[b]				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				0.03	0.92				0.01	0.41
Maternal childhood aggression	0.02	0.00	0.15			0.04	0.00	0.30		
Maternal childhood withdrawal	0.17	0.03	1.36			-0.11	0.01	-0.83		
Step 2				**0.056**	**3.68[t]**				**0.075**	**4.92***
Maternal childhood aggression	-0.02	0.00	-0.16			-0.01	0.00	-0.05		
Maternal childhood withdrawal	0.15	0.02	1.20			-0.13	0.02	-1.06		
Mother's age at testing	**-0.24**	0.06	**-1.92[t]**			**-0.28**	0.08	**-2.22***		
Step 3				0.03	0.82				0.018	0.59
Maternal childhood aggression	0.00	0.00	-0.03			-0.01	0.00	-0.11		
Maternal childhood withdrawal	0.11	0.01	0.86			-0.13	0.02	-0.96		
Mother's age at testing	**-0.27**	0.08	**-2.13***			**-0.30**	0.09	**-2.29***		
Child age	-0.17	0.03	-1.28			-0.07	0.00	-0.511		
Child sex[a]	-0.04	0.00	-0.31			0.10	0.01	0.786		
	R = .33		R^2_{Adj} = .03		F = 1.44	R = .33		R^2_{Adj} = .03		F = 1.38

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression x Withdrawal interaction term was not significant.
[t]$p < .10$. *$p < .05$.

Table Q2

Hierarchical Regressions Using Mothers' Childhood Histories to Predict Children's Mutuality Behaviours (n = 64)

	Children's Mutuality Support[b]					Children's Mutuality Interference[b]				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				0.03	0.81				0.05	1.66
Maternal childhood aggression	-0.13	0.02	-1.02			-0.06	0.00	-0.46		
Maternal childhood withdrawal	-0.11	0.01	-0.86			**-0.23**	**0.05**	**-1.80[t]**		
Step 2				**0.05**	**3.00[t]**				0.01	0.36
Maternal childhood aggression	-0.16	0.03	-1.29			-0.07	0.00	-0.54		
Maternal childhood withdrawal	-0.13	0.02	-1.03			**-0.23**	**0.05**	**-1.84[t]**		
Mother's age at testing	**-0.22**	**0.05**	**-1.73[t]**			-0.08	0.01	-0.60		
Step 3				0.03	0.88				**0.08**	**2.84[t]**
Maternal childhood aggression	-0.19	0.04	-1.47			-0.08	0.01	-0.63		
Maternal childhood withdrawal	-0.08	0.01	-0.61			-0.19	0.04	-1.50		
Mother's age at testing	-0.19	0.04	-1.48			-0.02	0.00	-0.13		
Child age	0.15	0.02	1.13			**0.28**	**0.08**	**2.12***		
Child sex[a]	0.13	0.02	0.98			-0.06	0.00	-0.46		
	R = .32		R^2_{Adj} = .02		F = 1.28	R = .38		R^2_{Adj} = .07		F = 1.91

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression x Withdrawal interaction term was not significant.
[t]$p < .10$. *$p < .05$.

Table Q3

Hierarchical Regressions Using Mothers' Childhood Histories to Predict Autonomy Behaviours (n = 64)

	Mothers' Autonomy Support[b]					Mothers' Autonomy Interference[b]					Children's Autonomy Interference[b]				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				0.01	0.33				0.05	1.67				0.00	0.13
Maternal childhood aggressior	-0.04	0.00	-0.33			0.19	0.04	1.52			-0.04	0.00	-0.32		
Maternal childhood withdrawal	-0.10	0.01	-.769			0.14	0.02	1.15			-0.05	0.00	-0.42		
Step 2				0.00	0.03				0.00	0.23				0.04	2.66
Maternal childhood aggressior	-0.05	0.00	-0.35			0.18	0.03	1.42			-0.07	0.01	-0.58		
Maternal childhood withdrawal	-0.10	0.01	-.775			0.14	0.02	1.09			-0.07	0.01	-0.58		
Mother's age at testing	-0.02	0.00	-0.17			-0.06	0.00	-0.48			-0.21	0.04	-1.63		
Step 3				0.01	0.23				0.08	2.62				**0.11**	**3.80***
Maternal childhood aggressior	-0.04	0.00	-0.26			0.14	0.02	1.14			-0.13	0.02	-1.00		
Maternal childhood withdrawal	-0.12	0.02	-0.91			0.22	0.05	1.693[t]			0.03	0.00	0.21		
Mother's age at testing	-0.04	0.00	-0.29			-0.01	0.00	-0.06			-0.16	0.02	-1.25		
Child age	-0.09	0.01	-0.67			**0.29**	0.08	**2.182***			**0.30**	**0.08**	**2.33***		
Child sex[a]	-0.04	0.00	-0.31			0.16	0.03	1.26			**0.27**	**0.06**	**2.06***		
	R = .14		R^2_{Adj} = -.07		F = .22	R = .37		R^2_{Adj} = .06		F = 1.79	R = .40		R^2_{Adj} = .08		F = 2.16[t]

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression x Withdrawal interaction term was not significant.
[t]$p < .10$. *$p < .05$.

Table Q4

Hierarchical Regressions Using Children's Mutuality Behaviours to Predict Child-Rated Social Competence and Interpersonal Problems (n = 64)

	Child-Rated Social Competence[b]					Child-Rated Interpersonal Problem Behaviours[b]				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				0.06	1.80				0.06	2.09
Maternal childhood aggression	0.16	0.02	1.24			-0.02	0.00	-0.13		
Maternal childhood withdrawal	-0.16	0.03	-1.32			**0.25**	**0.06**	**2.02***		
Step 2				0.01	0.25				0.03	1.07
Maternal childhood aggression	0.16	0.03	1.29			-0.03	0.00	-0.27		
Maternal childhood withdrawal	-0.17	0.03	-1.28			**0.26**	**0.07**	**2.04***		
Child mutuality support	0.10	0.01	0.70			-0.19	0.03	-1.39		
Child mutuality interference	-0.06	0.00	-.398			0.13	0.02	0.94		
Step 3				0.02	1.29				0.00	0.00
Maternal childhood aggression	0.15	0.02	1.14			-0.03	0.00	-0.26		
Maternal childhood withdrawal	-0.14	0.02	-1.03			**0.26**	**0.07**	**1.98[t]**		
Child mutuality support	0.07	0.01	0.53			-0.19	0.03	-1.36		
Child mutuality interference	-0.03	0.00	-0.19			0.13	0.02	0.912		
Child sex[a]	0.15	0.02	1.14			0.00	0.00	-0.014		
	R = .29		R^2_{Adj} = .01		F = 1.07	R = .31		R^2_{Adj} = .02		F = 1.25

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression x Withdrawal interaction term was not significant.
[t]$p < .10$. *$p < .05$.

Table Q5

Hierarchical Regressions Using Children's Mutuality Behaviours to Predict Teacher-Rated Social Competence and Internalizing Problems (n = 64)

	Teacher-Rated Social Competence[b]					Teacher-Rated Internalizing Problem Behaviours[b]				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				0.02	0.49				0.02	0.59
Maternal childhood aggression	-0.12	0.02	-0.96			0.10	0.01	0.78		
Maternal childhood withdrawal	-0.04	0.00	-0.30			0.11	0.011	0.82		
Step 2				0.007	0.198				0.008	0.25
Maternal childhood aggression	-0.11	0.01	-0.88			0.11	0.012	0.83		
Maternal childhood withdrawal	-0.04	0.00	-0.30			0.10	0.01	0.76		
Child mutuality support	0.09	0.01	.615			0.09	0.009	0.67		
Child mutuality interference	-0.05	0.00	-0.35			-0.07	0.00	-0.46		
Step 3				0.03	1.74				0.00	0.00
Maternal childhood aggression	-0.14	0.02	-1.04			0.11	0.012	0.82		
Maternal childhood withdrawal	-0.01	0.00	-.034			0.10	0.01	0.73		
Child mutuality support	0.06	0.00	0.43			0.09	0.009	0.662		
Child mutuality interference	-0.02	0.00	-0.11			-0.07	0.00	-0.454		
Child sex[a]	0.18	0.03	1.32			-0.01	0.00	-0.047		
	R = .23		R^2_{Adj} = -.03		F = .62	R = .17		R^2_{Adj} = -.06		F = .33

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression x Withdrawal interaction term was not significant.

Table Q6

Hierarchical Regressions Using Children's Autonomy Behaviours to Predict Social Competence and Problems (n = 64)

	Child-Rated Social Competence[b]					Child-Rated Interpersonal Problem Behaviours[b]					Teacher-Rated Internalizing Problem Behaviours[b]				
Variables	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF	β	sr^2	t	ΔR^2	ΔF
Step 1				0.06	1.80				0.06	2.09				0.02	0.59
Maternal childhood aggression	0.16	0.02	1.24			-0.02	0.00	-0.13			0.10	0.01	0.78		
Maternal childhood withdrawal	-0.16	0.03	-1.32			**0.25**	**0.06**	**2.02***			0.11	0.01	0.82		
Step 2				0.01	0.38				0.03	0.86				0.02	0.71
Maternal childhood aggression	0.16	0.03	1.29			-0.02	0.00	-0.19			0.10	0.01	0.75		
Maternal childhood withdrawal	-0.15	0.02	-1.18			**0.24**	**0.06**	**1.92[t]**			0.10	0.01	0.76		
Child autonomy support	0.06	0.00	0.408			0.00	0.00	-0.028			-0.09	0.01	-0.676		
Child autonomy interference	0.08	0.01	0.588			-0.16	0.03	-1.22			0.16	0.02	1.16		
Step 3				0.02	1.13				0.02	0.96				0.00	0.00
Maternal childhood aggression	0.15	0.02	1.13			-0.04	0.00	-0.30			0.10	0.01	0.74		
Maternal childhood withdrawal	-0.13	0.02	-1.02			**0.26**	**0.07**	**2.03***			0.10	0.01	0.75		
Child autonomy support	0.03	0.00	0.22			-0.02	0.00	-0.108			-0.09	0.01	-0.665		
Child autonomy interference	0.06	0.00	0.47			-0.19	0.04	-1.406			0.16	0.02	1.135		
Child sex[a]	0.14	0.02	1.061			0.13	0.02	0.978			0.00	0.00	0.029		
	R = .29		R^2_{Adj} = .01		F = 1.09	R = .33		R^2_{Adj} = .11		F = 1.37	R = .21		R^2_{Adj} = -.04		F = .51

[a]1 = male, 2 = female. [b]Step 4 was not reported due to the fact that the Aggression x Withdrawal interaction term was not significant.
[t]$p < .10$. *$p < .05$.

Table Q7

Hierarchical Regression Using Preschool Request Strategies to Predict Mothers' Autonomy Interference (n = 41)

	Mothers' Autonomy Interference				
Variables	β	sr^2	t	ΔR^2	ΔF
Step 1				0.08	1.55
Positive request strategies	0.16	0.03	1.05		
Negative request strategies	-0.22	0.05	-1.41		
Step 2				0.00	0.14
Positive request strategies	0.17	0.03	1.06		
Negative request strategies	-0.26	0.07	-1.37		
Preschool compliance	-0.07	0.01	-0.38		
	R = 0.28		R^2_{Adj} = 0.004		F = 1.06

Table Q8

Hierarchical Regression Using Preschool Noncompliance to Predict Children's Autonomy Interference (n = 41)

	Children's Autonomy Interference				
Variables	β	sr^2	t	ΔR^2	ΔF
Step 1				0.10	1.41
Self-assertion	0.35	0.12	1.52		
Passive noncompliance	0.01	0.00	0.029		
Defiance	0.08	0.01	0.491		
Step 2				0.05	1.96
Self-assertion	0.35	0.12	1.55		
Passive noncompliance	0.07	0.01	0.34		
Defiance	0.10	0.01	0.62		
Mothers' autonomy interference	0.23	0.05	1.40		
	R = 0.39		R^2_{Adj} = 0.05		F = 1.57

Table Q9

Hierarchical Regressions Predicting Children's CBCL Internalizing Problems at Middle Childhood (n = 41)

	Middle childhood CBCL Internalizing Problems				
Variables	β	sr^2	t	ΔR^2	ΔF
Step 1				0.03	0.57
CBCL internalizing score at preschool	-0.01	0.00	-0.05		
Preschool compliance	-0.17	0.03	-1.06		
Step 2				0.03	0.59
CBCL internalizing score at preschool	0.00	0.00	-0.02		
Preschool compliance	-0.17	0.03	-1.02		
Child mutuality interference	0.15	0.02	0.89		
Child autonomy interference	-0.14	0.02	-0.80		
	R = 0.25		R^2_{Adj} = -0.04		F = 0.58