Directive and Nondirective Guidance During Mother-Child Interactions in a High-Risk Sample: Associations with Family and Environment Variables

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A Thesis
in
The Department
of
Psychology

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Arts (Psychology) at
Concordia University
Montreal, Quebec, Canada

April 2013

CONCORDIA UNIVERSITY

School of Graduate Studies

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ABSTRACT

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The present study was designed to explore how maternal guidance (i.e., involvement and monitoring) is associated with parent-level (e.g., the mother-child relationship) and contextual factors (e.g., the home environment) as well as appropriate child behaviour in unstructured and structured tasks. Participants were mothers (mean age = 30.47) with their preschool aged children (aged 2-6 years; *n* males = 39, *n* females = 50). All participants were drawn from families who participated in the Concordia Longitudinal Risk Project. The mother-child dyad was observed in three contexts: 1) command (i.e., mother gives a series of short commands to their child from a list provided), 2) interference (i.e., mother is emotionally unavailable as she completes a questionnaire) and 3) free play (conducted before and after the command and interference tasks). Maternal guidance was divided into two categories: directive (i.e., commands, command repetitions) and nondirective (i.e., queries, verbal prompts, and explanations).

Hierarchical regressions were conducted predicting maternal guidance, controlling for mother's level of education, and child's age and sex. Results revealed that mothers with more directive guidance displayed lower quality of the home environment, higher parental stress, poorer mother-child relationship, and higher levels of maternal childhood levels of social withdrawal. Furthermore, more nondirective maternal guidance was associated with higher quality home environment, lower parental stress, and a better mother-child relationship. The

correlation between directive and nondirective guidance was .10. Taken together, results suggest that parenting practices are best understood in relation to other parenting and contextual variables, and generating parenting profiles may be helpful in developing and implementing parenting interventions for high-risk mothers.

ACKNOWLEDGMENTS

First and foremost, I would like to thank my supervisor, Dr. Dale Stack. Your enthusiasm and encouragement helped me to keep up the momentum of coding and writing. And of course, your insight and guidance were very much appreciated. I would also like to thank my committee members, Drs. Erin Barker and Mark Ellenbogen, for the time and effort they have put into this project. This research would not be possible without all of the families participating in the Concordia Project; I am so grateful that they have graciously allowed us into their homes year after year.

My fellow Stackies, you have been incredible and I thank the grad school gods for you every day. Lins, you have been an amazing role model (except for the occasional pranking). Elana, I think you might be the voice of our generation – or at least *a* voice… of *a* generation. Irene, you always go the extra mile to help me out, and your bouts of silliness absolutely kill me. And thank you to Leah and Julie too, for showing me how much I have to look forward to! I must give huge thanks to my undergraduate coders: Joelle (for her beautiful bubbly personality and intelligence to match) and Kim (thank goodness for your extensive knowledge of *Québécois* expressions). And thank you to our Research Coordinator Kristen, for her amazing work ethic and her ridiculously good stories, and all of the Stack Lab volunteers for their dedication and hard work.

I would also like to thank my previous research mentor, Dr. Frances Aboud. Frances, you showed me how exciting research can be and what an amazing difference psychology researchers can make in the world.

Thank you to my rugby crew, for allowing me a (relatively) safe outlet for the unavoidable stress and frustration of a thesis. And a special thanks to Brianna and Scanlon – you both have kept me grounded.

Thank you to my family. Mom, you inspire me every day in so many ways, but especially to be a critical thinker. Daddio, I don't think it is possible for anyone to be more supportive and encouraging, just with your smiles and hugs alone. Owen, your efforts and hard work over these past few years really impress me and motivate me to work harder. Zoë, you're that reality check every grad student would be so lucky to have and no one can make me laugh like you can.

Paul, thank you for your unwavering support and your constant perseverance to defeat my self-doubt. You helped keep me going, even if it was sometimes by using an annoying catchphrase – see, I did get 'er done!

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Parenting practices have been established as a key component in children's development and in their socialization in particular, involving issues ranging from self-regulation (e.g., Kochanska & Aksan, 2006) to the child's social competence and peer interactions (Brotman, Kiely Gouley, O'Neal, & Klein, 2004; Snyder, 2002). The influence that a parent has on their child's behaviour is particularly dramatic in the early preschool years, when children are more responsive to parental attention; in the later years, parents must also compete with the influence of peers, teachers and the child's desire for autonomy (Eyberg, Schuhmann, & Rey, 1998). One key dimension of parenting is parental guidance, i.e., the extent to which the parent provides sufficient and developmentally appropriate involvement, discipline and monitoring, and how often the child is asked (rather than told) what to do (Hart & Risley, 1995). Some researchers have described this guidance continuum along a spectrum of directiveness. More directive guidance encompasses the systematic use of commands, requests, and other control behavior with the aim of eliciting parent-desired conduct from the child (Marfo, 1992). Conversely, nondirective guidance entails the use of hints, suggestions or inquiries to guide, but not control, their child's behaviour (Kermani & Brenner, 2000). The present study examined maternal guidance, both directive and nondirective, in at-risk mothers in three different tasks. Specifically, this study explored the relation between maternal guidance and family- (e.g., mother-child relationship) and environment-level factors (e.g., quality of the home environment), while also attempting to ascertain its relation to appropriate in-task child behaviour.

When a mother directs her child based on her *own* agenda by using directive strategies, e.g., frequent and repetitive commands, this form of guidance may border on being intrusive (i.e., overly-directive). Intrusive acts are ones in which the mother's behaviour interferes with that of her child and these are rooted in the mother's lack of respect for their child's autonomy

(Ispa et al., 2004), with both emotional and behavioural repercussions. By being overly controlling, mothers may unintentionally inhibit the development of their child's autonomy, which can result in the stunting of skills that would help the child cope when their mother is unavailable (Crockenberg & Litman, 1990). Importantly, intrusive guidance may undermine a child's attempts at autonomy by not allowing the child to explore the limits of their own behavioural self-control; ultimately, this could result in the use of non-adaptive emotion self-regulation strategies by the child (Calkins, Smith, Gill, Johnson, & Maternal, 1998). Past research has indicated that mothers who are more adult-focused and dominate activities with their children, rather than being child-focused and encouraging actions initiated by their children, tend also to be the mothers of children displaying behavior problems and antisocial disorders (Reti et al., 2002; Rubin, Booth, Rose-Krasnor, & Mills, 1995; Thomasgard, 1998), conduct or externalizing difficulties (Jaycox & Repetti, 1993; Rubin, Burgess, Dwyer, & Hastings, 2003; Smith, Calkins, Keane, Anastopoulos, & Shelton, 2004), non-compliance (Crockenberg & Litman, 1990; Smith et al., 2004) and who demonstrate poorer cognitive and language development (Murray & Hornbaker, 1997; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004).

According to Ispa and colleagues (2004), intrusiveness can also be understood as the use of demands specifically in lieu of gentle guidance or nondirective scaffolding (e.g., Biringen & Robinson, 1991; Kermani & Brenner, 2000; Nolen-Hoeksema, Wolfson, Mumme, & Guskin, 1995). Scaffolding is the use of supportive strategies for cognitive problems (Wood, Bruner, & Ross, 1976), most effectively performed in the Zone of Proximal Development, i.e. the difficulty level that the child would struggle with alone, but can overcome with adult guidance (Vygotsky, 1978). A lack of guidance and scaffolding has been associated with lower levels of child self-regulation and higher levels of behavior problems (Bloomquist, August, Brombach, Anderson, &

Skare, 1996; Gardner, 1994; Olson, Bates, & Bayles, 1990). However, when parents do express gentle guidance (i.e., nondirective), this provides effective scaffolding for the child to learn, allowing for a supportive context for the child to hone their psychosocial skills, such as self-regulatory skills and committed compliance (e.g., Blandon & Volling, 2008; Braungart-Rieker, Garwood, & Stifter, 1997; Calkins et al., 1998; Kochanska, 1995; Volling, Blandon, & Gorvine, 2006). Thus, by assisting with a task and gradually teaching the child the skills necessary to complete it - rather than commandeering it - the parent continues to encourage their child's burgeoning independence. In addition, findings from research suggest that parents who foster their children's growing autonomy and independence help to create a strong foundation for their children's overall academic success (Baumrind, 1966; Lareau, 2003; Morrison & Cooney, 2002).

Although it may appear that there is a clear valence to the categories of directive guidance, with more directive behaviour being more maladaptive, it is important to consider the task (e.g., structured or non-structured task; easy or challenging task, etc.) in which the guidance occurs. Typically, research on guidance is explored in the context of didactic and structured tasks (e.g., Hustedt & Raver, 2002; Mulvaney, McCartney, Bub, & Marshall, 2006; Volling et al., 2006). Mothers are more likely to be directive in novel, structured and challenging tasks; conversely, mothers may allow their child more responsibility by using nondirective strategies when the task is less structured and less demanding. Kermani and Brenner (2000) have attempted to extend the notions of parental guidance to tasks that are not necessarily didactic or structured, such as free play. Research suggests that unstructured play is crucial for a child's socialization, as it is in this context that children learn crucial skills, such as working in groups, sharing, and resolving conflicts (Ginsburg, 2007). The use of commands or other directive strategies by parents is considered intrusive in a play context: it does not allow for the child to

influence the content or pace of the play (Ispa et al., 2004) and limits a child's ability to develop their own creativity and leadership by forcing them to acclimate to the concerns, rules, and limits of the adult world (MacDonald, 1993).

Mother-child relationship

Because maternal guidance is often explored within the context of structured or didactic tasks, the outcomes usually include the child's compliance, social or problem-solving skills or educational achievement (e.g., Fagot & Gauvain, 1997; Landry, Miller-Loncar, Smith, & Swank, 2002; Mattanah, Pratt, Cowan, & Cowan, 2005; Pacifici & Bearison, 1991; Robinson, Burns, & Davis, 2009). Perhaps as a result of understanding guidance in terms of the child's outcomes, little research has been performed concerning the association between gentle, nondirective guidance and aspects of the mother-child relationship. However, studies that measured solely overly directive or controlling guidance, and not gentle guidance, found that it was linked to many facets of the mother-child relationship, including avoidant attachment (Ainsworth, Blehar, Waters, & Wall, 1978; Carlson & Harwood, 2003; Isabella & Belsky, 1991), negative child affect, low mother–child mutuality, and low child affection toward mothers (Egeland, Pianta, & O'Brien, 1993; Marfo, 1992).

Historically, much of the literature concerning the mother-child relationship conceptualizes it in terms of attachment patterns. Bowlby (1980) emphasized the importance of an infant's attachment to their primary caregiver, in that it lays the groundwork for later social-emotional development by providing an internal working model or guide of the self in relation to others (Bowlby, 1973; Bretherton, 1985; Main, Kaplan, & Cassidy, 1985). Specifically, insecurely attached preschoolers tend to lack social competence and have maladaptive peer relationships during preschool as well as later on (e.g., Lewis, Feiring, McGuffog, & Jaskir,

1984; Park & Waters, 1989; Turner, 1991). Inspired by attachment theory**,** Biringen, Robinson, and Emde (1998) expanded this concept to capture more fully the nuances of the mother-child relationship by creating the Emotional Availability Scales (EAS; Biringen & Easterbrooks, 2012; Biringen et al., 1998). EA measures the ability of both mothers and their children to effectively regulate their interactions, by reading and responding to each other's actions appropriately (Biringen, 2000). It includes both *parental* scales as well as *child* scales. Therefore, EA conceptualizes the parent-child relationship as dyadic and transactional (Sameroff, 2009; Sameroff & Chandler, 1975), meaning that there is a reciprocal nature to the relationship and both parent and child act and react to each other's behaviours and emotional responses. Easterbrooks and Biringen (2000) highlight that results from many studies have shown that both the parent and child components of EA are associated with the quality of attachment. This evidence lends to the notion that the EA scales can be used more comprehensively as an assessment of the overall quality of the affective relationship between parent and child (Biringen, 2000). Though never studied explicitly, maternal guidance may be reflected in some of these scales, particularly sensitivity and scaffolding, as both of these scales consider the extent to which the mother adapts her own behaviour to her child's socioemotional and cognitive needs.

Contextual factors: The contribution of disadvantage, stress, and home environment

Parenting patterns can serve as a buffer against risks posed by poverty (e.g., Chase-Lansdale & Brooks-Gunn, 1995; DeVore & Ginsburg, 2005; Duncan, Brooks-Gunn, & Klebanov, 1994; Huston, McLoyd, & Garcia Coll, 1994; McGroder, 2000). Hustedt and Raver (2002) suggest that maternal guidance may be protective; sensitive low-income parents may facilitate their children's later cognitive abilities by effectively scaffolding their problem solving

skills. Thus, it is important to consider parenting behaviours within their socioeconomic context (i.e., other risk factors), especially when considering low-income and at-risk families.

The North American social phenomenon of a "permanent underclass", in which there is a never-ending intergenerational cycle of risk for poverty, crime, psychological distress, and illness, is one that has garnered much attention in recent years (e.g., Bird, 2007). The developmental psychopathology framework emphasizes that it is necessary to examine risk and protective factors in light of contextual variables in order to fully understand the pathways to adaptive and maladaptive outcomes (Cichetti & Toth, 2009). Generally, children with lower socioeconomic statuses are at a higher risk for experiencing social and emotional difficulties, such as loneliness, anxiety, problematic peer relationships and poor emotion regulation skills (Brody et al., 2001; Harden et al., 2000; Patterson, Vaden, & Kupersmidt, 1991), as well as externalizing behaviour problems (e.g., Harden et al., 2000). Other crucial risk factors that are often associated with financial hardship include lower levels of parental education, high parental stress, minimal cognitive stimulation in the home, and maternal histories of psychopathology (Conger & Donnellan, 2007; Stack, Serbin, Schwartzman, & Ledingham, 2005).

Maternal education has been associated not only with child outcomes, but also with parenting behaviours themselves. When occupation or income are controlled for, education continues to hold predictive validity for parenting (Alwin, 1984; Richman, Miller, & LeVine, 1992). Serbin and colleagues (2011) assert that having higher levels of maternal education, especially in an at-risk context, can provide a potential buffer against negative parenting practices; in this way, maternal education may be a way to break or disturb the intergenerational cycle of risk and family poverty. Furthermore, Tamis-LeMonda and colleagues (2009) suggest that due to the accompanying life stress of low education, mothers with lower levels of education

tend to have an overly controlling style of interacting with their children (e.g., Dix, 1991; Ispa et al., 2004). This life stress in itself can be a risk factor for negative parenting behaviour. Specifically, maternal stress (e.g., mother's perceived self-competence in the parenting role) has been associated with less optimal parenting (e.g., Abidin, 1992; Anthony et al., 2005; Rodriguez & Green, 1997), poorer attachment security and poorer mother-child interaction (e.g., Crnic & Greenberg, 1990; McKinnon, Rubin, Booth, & Rose-Krasnor, 1993; Teti, Nakagawa, Das, & Wirth, 1991), and consequently, poorer child well-being (Anthony et al., 2005; Conger, Patterson, & Ge, 1995; Deater-Deckard & Scarr, 1996). Based on previous research examining the harsh disciplinary practices of highly stressed mothers (e.g., Anthony et al., 2005), mothers experiencing higher amounts of parental stress may be expected to also guide intrusively and thus may use an excessive amount of commands.

Furthermore, the learning environment that the parent provides for their child is crucial. Home environment factors may be more influential in child learning and development than variables in the school environment (Al Otaiba & Fuchs, 2006; Carter, Chard, & Pool, 2009). As a result, the quality of at-home stimulation and support for children is arguably an important predictor of children's language and academic success (Connor, Son, Hindman, & Morrison, 2005; Son & Morrison, 2010; Storch & Whitehurst, 2001). Likewise, the quality of the home environment has also been established as a potential risk factor. Using the Home Observation for Measurement of the Environment (HOME) overall and subscale scores, which measure the level of stimulation and support in the home, low scores have been associated with a myriad of negative child outcomes, such as behaviour problems, issues with social competence, academic difficulties, and malnutrition (see review, Bradley, 1994). Although this relation has not been

explicitly studied in the past, HOME scores may be expected to relate to maternal guidance, as the HOME scores involve parents' general interest in stimulating and supporting their children.

In addition to concurrent factors, there are also risk factors from a mother's past that can be associated with her current parenting behaviours. In particular, some research has explored the parenting behaviours and resulting mother-child relationships in populations with high levels of aggression and abuse. Both males and females with childhood histories of aggression and/or social withdrawal have parenting difficulties, such as harshly punitive and neglectful parenting styles (Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Hops, Davis, Leve, & Sheeber, 2003; Serbin et al., 1998). Withdrawn women have been shown to have maladaptive interaction patterns (Serbin & Karp, 2004) and poor social skills (Rubin, Burgess, & Coplan, 2002). Over-controlling, coercive and power-assertive styles of parenting are known to occur in parents of socially withdrawn children (Rubin et al., 2002; Rubin, Stewart, & Coplan, 1995). Further, longitudinal studies suggest that aggressive and hostile parenting predict irritable and aggressive behaviours in their own children during childhood, and that later on these children have higher levels of angry and hostile parenting (Caspi & Elder, 1988). Thus, it appears as though the mother's past may be a risk factor for parenting practices in general, but also ones specifically related to their use of guidance.

The present study

The present study was designed to investigate the guidance of mothers who come from at-risk and low socioeconomic status backgrounds, using a unique sample: the Concordia Longitudinal Risk Project (Schwartzman, Ledingham, & Serbin, 1985). Since 1975, the Concordia Project has followed children from low socioeconomic contexts in Montreal, Quebec originally from grades 1, 4 and 7. These children, many now mothers, were originally screened

for aggression and social withdrawal using peer nominations. The present study was designed to explore the interactions between these mothers and their own preschool-aged children, incorporating the at-risk nature of the population. Directive and nondirective guidance have typically been studied in isolation and not in comparison to each other, and are rarely studied across contexts. In the present study, directive and nondirective maternal guidance utterances were coded using observational data in structured (i.e., command and interference task) and non-structured (i.e., free play) tasks. Specifically, the objectives for this study were to: 1) explore the relation between maternal guidance and the mother-child relationship as well as family- and environment-level factors; 2) explore the relation between maternal guidance and mothers' childhood levels of social withdrawal and aggression; and 3) gain an understanding of the practical implication of different forms of maternal guidance by exploring them in relation to the success of the tasks, i.e., whether the child and mother behave in a way that is suitable and appropriate to the task (e.g., child's compliance in command task).

Methods

Participants

The participants in the current study derive from the original larger longitudinal sample of the Concordia Longitudinal Risk Project. In 1976-77, 4,109 elementary school students in grade 1, 4 and 7 were selected from francophone low-income neighbourhoods in Montreal, Canada (Schwartzman et al., 1985; Serbin et al., 1998). From these students, 1,774 were screened and selected on dimensions of aggression and social withdrawal using the Peer Evaluation Inventory, a peer nomination instrument (PEI; Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976). The PEI, which measures aggression, withdrawal and likeability, is explained in detail in the Measures section below. Oversampling at the upper extremes of the sample (i.e., the

upper tails of the aggression and withdrawal dimensions) was done deliberately when arriving at the final sample of 1,774, creating equal groups of children from across the continuum on aggression and withdrawal who were drawn from the same schools and neighbourhoods. In the present study, three sets of objectives will be explored using a sub-sample of the Concordia Project of 135 mothers (88 of whom are original female participants) who took part with their 24-72-month-old children at the time of data collection. In order to explore these three objectives, three separate combinations of participants from the subsample of 135 will be used strategically.

Out of the 135 dyads indicated above, dyads were excluded either due to poor video quality or inability to digitize the video (n = 26), speech issues (e.g., speaking languages other than French for a portion of the time; n = 10) or incomplete video segments (n = 10). Thus, data from 89 dyads were coded, of which 58 of the mothers were original female participants and 31 were female spouses of original participants. The mean age of mothers at the time of data collection was 30.47 years (SD = 3.18); the age at which these mothers had their first child ranged from 18.02 to 36.84, with an average age of 24.77 (SD = 3.49). The maximum family prestige score (Standard International Occupational Prestige Scale; Treiman, 1977) was an average of 38.02, which could include jobs such as manufacturing laborers (e.g., chemical processors, tobacco preparers, sheet metal workers, etc.), and service workers (e.g., guides, tailors, etc.) The average number of years of education of the mothers was 11.75. The ages of the child participants ranged from 2 to 6.12 years and the average age was 3.94 (SD = 1.29) and there were 50 girls and 39 boys.

The representativeness of this mother-child subsample in relation to all women in the Concordia Project sample has been previously assessed (Stack et al., 2012). The current sample (n = 58;

original participants only) is a subsample of Stack and colleague's sample (n = 109) and these two samples do not differ statistically in the participants' demographics (e.g., maternal education, occupational prestige, global ratings on the Emotional Availability scales etc.). Stack et al. (2012) compared the mothers who participated in their study to a sample of 360 women who were contacted to participate in studies during 1993-97, as well as a sub-sample of 373 women (who were part of the original sample of the Concordia Project) and who were also known to be mothers. Specifically, the women were compared on the following: dimensions of aggression and social withdrawal, years of education, occupational prestige ratings, and age at birth of first child (if applicable). There were no differences in these measures between mothers from the representative sample (n = 373) and mothers from Stack and colleagues' (2012) sample (n =109).**Procedure**

Families were visited in their homes by two members of the research team (one part-time researcher and one research assistant or graduate student) who were blind to the risk status of the dyad. Mothers were provided with a description of the procedure and read and signed informed consent forms (see Appendix A). With the help of the researchers, mothers selected a room appropriate for interactions with their child on a floor mat, and in which they were unlikely to be disturbed by other family members. All interactions were videotaped using a Sony Video 8AF camera with a directional microphone that was fixed to a tripod placed in front of the dyad for later coding of the EA scales, joint play, and maternal guidance.

In the first task, mothers and their children engaged in a 15-minute free play task with standardized toys. Toys were selected in order to be age appropriate for children ages 1 through 6 (e.g. books, a doll, building blocks, a tea set). In a separate sequence, usually conducted the following day, mother and child were instructed to remain on the mat, where the same set of

standardized toys was found as described above. The dyad was required to remain on this mat for 14 minutes throughout four different tasks in the following order: free play 1 (4 minutes), command (3 minutes), interference (3 minutes), and free play 2 (4 minutes). These tasks were continuous (i.e., without break), and the termination of each task was signalled by an audible timer held by the experimenter. In the first and last task (i.e., free play 1 and 2; 4 minutes each), mothers were instructed to play with their child as they would normally, making use of the standardized toys. In the command task (3 minutes), the mother was provided with a list of commands for her child (e.g., stand up, point to your nose, turn the pages of the book, etc.); she was asked to have her child perform at least 6 of the commands. In the interference task (3 minutes), the mother was asked to complete a questionnaire on the mat while her child played alongside; although the mother was physically available to her child, she was told to refrain from being emotionally available during this task (see Appendix B for the protocol for these tasks).

Measures

Observational coding

Observational cording for Maternal Guidance and Joint Play (see below) was performed using Mangold Interact 9 software. Mangold Interact 9 is a data logging software for video-based observation studies. It allows for the observation of a video, while enabling coders to develop their own coding scheme and apply codes at specific moments (second by second) when the behaviour is noted. This code is then provided with a timestamp in the digital record. It keeps track of the codes and allows for analyses involving their frequencies, durations, etc.

Maternal guidance. In order to explore maternal guidance across all three tasks, maternal utterances were divided into two categories: directive and nondirective (see Table 1).

Table 1.

Brief Operational Definitions for Maternal Guidance

	Code	Example
Directive	**Command (and command repetition):** Mother commands or requests the child to do something.	"Donne-moi la poupée." "Peux tu/Veux-tu…" "Il faut que tu…" "C'est toi qui…"
Nondirective	**Explanation:** Mother provides an explanation to make something clear. It can be given spontaneously or in response to a child's question or concern. It can be task or activity/toy related, including providing procedural knowledge (instructions) or providing a rationale for certain actions.	"Maman est occupée maintenant, mais on va jouer ensemble après." "On prend la sucre après le lait pour le café." "Ne touche pas ça; ça va briser."
	Inquiry: Mother asks the child to produce some kind of information regarding an object, the activity, the child, or their interest and desires, or general knowledge. This includes asking for clarification.	"À quoi veux-tu jouer?" "Où est ton nez?" "Ça tentes-tu de…?"
	Verbal hint or prompt: Mother provides implicit suggestions or specific statements indicating the child's "next" appropriate response within an activity. It functions to structure the direction of the activity. It may be in question format.	"J'aimerai si …" "J'ai besoin…" "Es-tu capable…?" "Ça serait mieux si…"; Makes "ring ring" sound for the telephone; speaks as the doll "J'ai faim!"

Directive guidance included commands (i.e., mother commands the child to do something specific) or command repetitions. Nondirective guidance included verbal prompts (i.e., mother provides implicit suggestions or specific statements indicating the child's "next" response within an activity), inquiries (i.e., mother asks the child to produce some kind of information about an object, the activity, the child or their interests and desires, or general knowledge), or explanations (i.e., mother provides an explanation to make something clear, either provided spontaneously or in response to the child's question). These categories were partly based on Kermani and Brenner (2000). If an utterance met criteria for a directive or nondirective code, it was coded immediately following the utterance using Mangold Interact 9 software. Reliability coding was conducted with an undergraduate student who was blind to the at-risk nature of the sample and the research questions and hypotheses. For two utterances to be considered a "match" between the author and the reliability coder, they needed to occur within a relatively short time of each other (i.e., 4 seconds or less). The reliability coder was trained on the coding, and an overall kappa of .66 was achieved for maternal guidance with 33% of the sample (n = 30). Fleiss (1981) characterizes a kappa score between .60 and .75 as good.

Joint mother-child play. Joint Play was a measure of the duration of time that mother and child spent playing together with the same object or activity. This was coded only during the free play tasks using Mangold Interact 9 software. In order to meet criteria for Joint Play, the dyad needed to have a combination of joint gaze (i.e., mother and child maintained a visual focus on the object of interest) and one of the following: joint verbalization (i.e., mother and child are talking about the object of interest or activity; includes instructions, descriptions, encouragement, questions, etc.) or joint touch (i.e. mother and child are touching the object of interest). If there was no joint gaze, the dyad had to have a combination of a common goal (e.g., when playing

with blocks, mother and child are focused on the common goal of building a farm as opposed to each having their own separate projects) and joint touch or joint verbalization. Coding of the joint play began as soon as the above-mentioned combination (e.g., joint gaze and joint verbalization) had lasted for at least 5 seconds. Coding ended at the beginning of a five second period in which there was no longer a combination. Coding was performed by an undergraduate student who was blind to the risk status and hypotheses of the study, while the author served as the reliability coder. Two dyads were excluded for the analyses with joint play due to not following procedure, resulting in a sample of 87 dyads. To calculate reliability, the criteria for a match was designated as 90% overlap in duration, and a Cohen's kappa inter-rater reliability of .85 was achieved with a randomly selected 31% of the sample (n = 27).

Mother-child relationship. The mother-child relationship was measured using the Emotional Availability Scales (EA scales). Emotional Availability is a measure of the caregiver-child relationship developed by Biringen, Robinson, and Emde (1993; 1998). There are a total of five scales (1998; 1993 versions): three caregiver (herein "maternal") variables (sensitivity, hostility and structuring) and two child (responsiveness and involvement). Thus, by encompassing both the mother's and child's behaviour (Biringen, 2000), EA is considered a relational construct reflecting the ability of mothers and children to effectively regulate their interactions (Emde, 1980; 2000). The EA scales are scored by conducting home observations of the dyad interacting. Several components within each construct are considered (see below) and then the participant is given a global score, with higher scores indicating better functioning or competence or a stronger mother-child relationship. The exception is maternal hostility (for the version of EA used in the present study), in which lower levels of the variable indicate lower levels of overt and covert hostility and thus a poorer mother-child relationship.

Training for coding of the data was conducted via the Biringen training tapes. Inter-rater reliability of the EA scales in this sample was previously assessed by Stack and colleagues (2012). To assess inter-rater reliability, 30% of the sample was randomly selected and double-coded (by trained coders who were blind to the study's hypotheses and mothers' risk status). Intra-class reliability coefficients revealed highly satisfactory levels for all EA Scales (r = .82 to .99). In other samples, the coding of interactions of 15 minutes or more (Free Play in this study lasted exactly 15 minutes) obtained a Cohen's Kappa inter-rater reliability of .90 (Robinson, Little, & Biringen, 1993).

The mother's sensitivity refers to a number of parental qualities that reflect the mother's ability to be emotionally connected and warm with their child (e.g., responsiveness to the child, ability to resolve conflicts, etc.), ranging from *1= insensitive to 9 = highly sensitive*. Maternal structuring considers the interaction of the dyad instead of the mother's individual behaviours and refers to an age- and relationship appropriate degree of structuring in play (i.e. providing a scaffold or frame for the interaction by providing clues or suggestions) combined with successful attempts (range from *1 = nonoptimal structuring to 5 = optimal structuring*). Maternal hostility refers to the degree to which the mother is either overtly or covertly hostile toward the child, such that the nature of the interaction is threatening and/or frightening, with scores ranging from *1= not hostile to 5= overt hostility*. Given the at-risk nature of this sample, we inverted the scores from the EA scales where non-hostility has a high of 5, and used the name of "hostility," as opposed to the EA dimension of "nonhostility." Child responsiveness refers to the child's responses to the mother's bids and his or her general pleasure in the interaction, with scores ranging from *1 = unresponsive to 7 = optimally responsive*. Finally, child involvement refers to the degree to which the child attends to and engages the mother in play without compromising

autonomous pursuits (e.g., shows or demonstrates materials to the mother, asks questions or calls for suggestions, etc.), with scores ranging from *1 = uninvolving to 7 = optimally involved*.

Demographic Information Questionnaire (DIQ). Socio-demographic information, specifically the child's age and sex and the mother's level of education in the number of years, was collected using the DIQ (see Appendix C). This measure has proven effective in collecting participant demographics, and has been used in past studies of the Concordia Project (e.g., De Genna, Stack, Serbin, Ledingham, & Schwartzman, 2006; Martin, Stack, Serbin, Ledingham, & Schwartzman, 2012).

Home Environment. The Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 1984) is used to assess the level of stimulation and support available to a child in his or her home environment. It is a standardized observational screening tool and the age-appropriate version was administered during home visits for the present study. The Preschool version contains 55 items clustered into eight subscales: (a) toys and learning materials, (b) language stimulation, (c) physical environment, (d) pride and affection, (e) stimulation of academic behavior, (f) encouragement of maturity, (g) variety of stimulation, and (h) punishment. Only the total HOME score was included, in which a higher score is interpreted as a higher quality home environment. The HOME inventory's psychometric properties (i.e. reliability and validity) range from satisfactory to excellent (Caldwell & Bradley, 1984).

Parenting Stress. The Parental Stress Index – Short form (PSI-SF; Abidin, 1995) is designed to assess psychological distress arising from parenting demands (Reitman, Currier, & Stickle, 2002). It is a Likert-type (1 = *strongly disagree* to 5 =*strongly agree)* parent self-report questionnaire comprised of parent-focused and child-focused items. The Short Form contains three subscales of 12 items each: Parental Distress (i.e., perceived competence as a parent, social

support, spousal conflict, etc.), Parent-Child Dysfunctional Interaction (i.e., child is not meeting parent's expectations, interactions with child that are not reinforcing), and Difficult Child (i.e., parent's perception of his/her child's temperament, defiance, noncompliance, and demandingness). High scores on the subscales and PSI-SF Total score indicate greater levels of stress. Only the PSI-SF Total score was included in analyses. Use of this measure with low socioeconomic groups has been supported by previous research (Reitman et al., 2002) and its psychometric properties, including concurrent validity and internal consistency, are excellent (Abidin, 1995).

Mothers' childhood histories of aggression and social withdrawal. Mothers' levels of aggression and social withdrawal in childhood were assessed when they were in grades 1, 4 or 7 in 1978. This information was collected by using the PEI (Pekarik et al., 1976), a peer nomination instrument, which contains 34 items loading onto three factors: Aggression (behaviours that attempt to injure others or property either through physical or verbal means, e.g., those who start a fight over nothing), Social Withdrawal (behaviours that are socially isolating and can be associated with avoidance, shyness and fear, e.g., those who are too shy to make friends easily), and Likeability (not used in the current study). Children nominated up to 4 boys and (separately) 4 girls who best matched each item on the PEI. The number of nominations received by each child was summed for the Aggression and Withdrawal factors. These total scores were then subjected to a square root transformation to decrease skewness. Finally, transformed scores were converted to z scores for each gender within each classroom to control for class size and gender differences in base rates of aggression and withdrawal. This procedure enabled appropriate comparisons of each child against the relevant norms for gender and age (see Serbin et al., 1998 for further detail).

Task success. In order to explore the child's behaviour in the command and interference tasks, two behaviours were coded using the Preschooler Self-Regulatory Scheme (PSRS; August et al., 2013). The behaviours were coded at 10-second intervals, and coded for the presence or absence of specific behaviours. For the command task, noncompliance was measured, i.e., child attempts to not comply with a mother's request, such as by overtly challenging the mother or by ignoring the request. In the interference task, the level of negative attention-seeking was measured, e.g., the child touching the mother, increasing their proximity towards their mother, or making exaggerated movements or vocalizations to get the mother's attention. A Cohen's kappa inter-rater reliability of .71 and .90 was achieved for negative attention-seeking and noncompliance respectively with a randomly selected 30% of the sample.

Results

Hierarchical multiple regressions were conducted using SPSS-16. In all regression analyses, maternal education, child gender, and child age were included as control variables. In general, predictor variables were entered in Step 1 (e.g., EA scales, levels of childhood histories of aggression or social withdrawal, HOME scores, etc.), maternal education at Step 2, and child gender and child age were entered in Step 3. Of note, the interaction between maternal childhood histories of aggression and social withdrawal was entered in the last step when examining these predictors individually in Step 1, so as not to be redundant with the potential main effects resulting from variables entered in the first step.

Data screening

Data screening was performed according to the guidelines described by Kline (2009) and Wilkinson and the Task Force on Statistical Inference (1999). Although there were some outliers, these outliers were not corrected as skew and kurtosis were within acceptable limits. In

addition, given the high-risk nature of the study, outliers may be critical sources of information. Assumptions of multicollinearity and singularity were not violated (see Appendix D).

Objective 1.

The first objective was to explore the maternal guidance observed during mother-child dyadic interactions during three different tasks (i.e., interaction contexts). In addition to relating it to parent- and environment-level variables, maternal guidance was also explored in relation to the "success" of free play 1 and 2 by measuring the duration of joint play.

Maternal guidance and HOME scores. The relation between maternal guidance (i.e., total directive and nondirective utterances across the four tasks) and home environment (as measured by the HOME scales) was examined. Overall, the hierarchical regression with HOME scores predicting directive utterances accounted for 28.7% (25.2% adjusted) of the total variance (Table 2). Mothers' HOME scores were statistically significant at Step 1 (*Beta* = -.35, t = -3.53, p = .001), accounting for 12.7% of the variance. At Step 3, the age of the child at testing was found to predict directive utterances (*Beta* = -.39, t = -4.09, $p < .001$). Mothers with poorer quality home environments and younger children exhibited more total directive utterances. In the examination of nondirective utterances, the overall model accounted for 20.8% (17.0% adjusted) of the total variance (Table 3). Mothers' HOME scores were tending towards significance in Step 1 (*Beta* = .19, t = 1.76, $p < .1$) and significant by Step 3 (*Beta* = .24, t = 2.14, $p < .05$). Child's age at testing also predicted nondirective utterances at Step 3 (*Beta* = -.43, t = -4.22, $p <$ .001). Mothers with higher quality home environments and younger children made more nondirective utterances.

Maternal guidance and Parental Stress Index – Short Form (PSI-SF) scores. The association between maternal guidance across the 4 tasks and parental distress was explored. In

Table 2

Home Observation for Measurement of the Environment (HOME) Scores Predicting Total Maternal Directive Guidance (n=88)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.13	12.46**
HOME scores	-0.35	0.13	-3.53**		
Step 2				0.01	0.80
HOME scores	-0.31	0.08	-2.76**		
Maternal Education	-0.10	0.01	-0.89		
Step 3				0.15	8.85***
HOME scores	-0.26	0.05	-2.49*		
Maternal Education	-0.06	0.00	-0.57		
Child age	-0.39	0.14	-4.09***		
Child sex	-0.10	0.01	-1.04		
			R = 0.54	R^2_{Adj} = 0.25	F = 8.35***

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 3

Home Observation for Measurement of the Environment (HOME) Scores Predicting Total Maternal Nondirective Guidance (n=88)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.04	3.10^t
HOME scores	0.19	0.03	1.76^t		
Step 2				0.00	0.04
HOME scores	0.18	0.02	1.48		
Maternal Education	0.02	0.00	0.19		
Step 3				0.17	9.06***
HOME scores	0.24	0.04	2.14*		
Maternal Education	0.07	0.00	0.64		
Child age	-0.43	0.17	-4.23***		
Child sex	-0.05	0.00	-0.52		
			R = 0.46	R^2_{Adj} =0 .17	F = 5.45**

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

the regression examining directive utterances and total PSI scores, the overall model accounted for 33.1% (29.7% adjusted) of the total variance (Table 4). Mothers with higher total levels of self-reported parental stress were more likely to provide more directive utterances throughout the tasks at Step 1 (*Beta* = .40, *t* = 3.93, *p* < .001) and this accounted for 15.7% of the total variance. In Step 3, the age of the child tested was a predictor of directive utterances (*Beta* = -.36, *t* = -3.85 , *p* < .001), indicating that mothers with younger children used more directive utterances to structure across all 4 tasks. In the regression examining nondirective utterances and total PSI scores, the overall model accounted for 16.6% (12.4% adjusted) of the total variance (Table 5). In Step 3, child's age at testing was found to be a statistically significant predictor (*Beta* = -.40, *t* = - 3.80, *p* < .001), with mothers with younger children using more nondirective utterances to structure all 4 tasks.

Maternal guidance and EA scales

I. Nondirective Utterances In the regression examining nondirective utterances and maternal sensitivity, the overall model accounted for 21.4% (17.6% adjusted) of the total variance (Table 6). At Step 1, maternal sensitivity emerged as a significant predictor, accounting for 5.3% of the total variance; mothers with higher levels of sensitivity used more nondirective utterances to structure all 4 tasks (*Beta* = .23, *t* = 2.18, *p* < .05). At Step 3, age of child tested was a significant predictor (*Beta* = - .39, *t* = - 3.88, *p* < .001) with more nondirective utterances with younger children. Maternal education tended towards significance (*Beta* = .18, *t* = 1.72 , *p* < .1): mothers with more years of education used more nondirective utterances. Maternal structuring was not found to be a significant predictor of nondirective utterances and the overall model accounted for 19.5 % (15.5% adjusted) of the total variance (Table 7). At Step 3, age of child tested was a significant predictor of nondirective utterances (*Beta* = -.41, *t* = -

Table 4

Parental Stress Index (PSI) Scores Predicting Total Maternal Directive Guidance (n=87)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.16	15.43***
PSI scores	0.40	0.16	3.93***		
Step 2				0.04	4.28*
PSI scores	0.38	0.15	3.86***		
Maternal Education	-0.21	0.04	-2.07*		
Step 3				0.13	7.89**
PSI scores	0.34	0.11	3.65***		
Maternal Education	-0.15	0.02	-1.61		
Child age	-0.36	0.12	-3.85***		
Child sex	-0.08	0.01	-0.90		
			R = 0.58	R^2_{Adj} = 0.30	F = 9.90***

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 5

Parental Stress Index (PSI) Scores Predicting Maternal Total Nondirective Guidance (n=87)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.00	0.16
PSI scores	0.04	0.00	0.40		
Step 2				0.01	0.87
PSI scores	0.05	0.00	0.46		
Maternal Education	0.10	0.01	0.93		
Step 3				0.15	7.37**
PSI scores	0.00	0.00	0.01		
Maternal Education	0.17	0.03	1.60		
Child age	-0.40	0.15	-3.80***		
Child sex	-0.05	0.00	-0.49		
			R =0 .41	R^2_{Adj} = 0.12	F = 3.98**

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 6

Maternal Sensitivity Predicting Total Maternal Nondirective Guidance (n=86)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.05	4.75*
Maternal Sensitivity	0.23	0.05	2.18*		
Step 2				0.01	0.86
Maternal Sensitivity	0.22	0.05	2.10*		
Maternal Education	0.10	0.01	0.93		
Step 3				0.15	7.80**
Maternal Sensitivity	0.20	0.04	2.05*		
Maternal Education	0.18	0.03	1.72[t]		
Child age	-0.39	0.15	-3.88***		
Child sex	-0.08	0.01	-0.75		
			R = 0.46	R^2_{Adj} = 0.18	F = 5.53**

[t]p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 7

Maternal Structuring Predicting Total Maternal Nondirective Guidance (n=86)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.01	1.17
Maternal Structuring	0.12	0.01	1.08		
Step 2				0.02	1.27
Maternal Structuring	0.12	0.01	1.13		
Maternal Education	0.12	0.01	1.13		
Step 3				0.17	8.37***
Maternal Structuring	0.15	0.02	1.47		
Maternal Education	0.20	0.04	1.95^t		
Child age	-0.41	0.16	-4.02***		
Child sex	-0.08	0.00	-0.82		
			R = 0.44	R^2_{Adj} = 0.16	F = 4.91**

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

4.02, $p < .001$), with more maternal nondirective utterances with younger children. Maternal education tended towards significance (*Beta* = .20, $t = 1.95$, $p = .054$), with more nondirective utterances expressed by more educated mothers. For the regression examining nondirective utterances and maternal hostility, the hierarchical regression accounted for 23.6% (19.8% adjusted) of the total variance (Table 8). Mothers with lower levels of hostility expressed more nondirective utterances throughout the tasks; as of Step 1, maternal hostility accounted for 6.5% of the total variance (*Beta* = -.26, $t = -2.41$, $p < .05$). At Step 3, age of the child tested emerged as a significant predictor (*Beta* = - .41, $t = -4.11$, $p < .001$); mothers using more nondirective utterances with children who were younger. In the regression examining child responsiveness, the overall model accounted for 24% (20.4% adjusted) of the total variance (Table 9). In Step 1, child responsiveness emerged as a significant predictor, accounting for 4.8% of the total variance (*Beta* = .22, $t = 2.09$, $p < .05$). More maternal nondirective utterances were associated with higher levels of child responsiveness. In Step 3, the age of the child tested was a significant predictor of nondirective utterances (*Beta* = - .42, $t = -4.33$, $p < .001$), indicating that mothers with younger children used more nondirective utterances to structure the tasks. Finally, in the regression exploring the role of child involvement in predicting nondirective utterances, the final model accounted for 21.1% (adjusted 17.2%) of the total variance (Table 10). Child involvement only tended towards significance by Step 3 (*Beta* = .20, $t = 1.95$, $p = .055$), with higher levels of child involvement being associated with more nondirective utterances. Also in Step 3, maternal education tended towards significance (*Beta* = .20, $t = 1.95$, $p = .054$); mothers who used more nondirective utterances had higher levels of education. Finally, the age of child tested was a significant predictor (*Beta* = - .43, $t = -4.25$, $p < .001$): mothers with younger children used more nondirective utterances.

Table 8

Maternal Hostility Predicting Total Maternal Nondirective Guidance (n=86)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.07	5.82*
Maternal Hostility	-0.26	0.07	-2.41*		
Step 2				0.01	0.61
Maternal Hostility	-0.24	0.06	-2.28*		
Maternal Education	0.08	0.01	0.78		
Step 3				0.16	8.71***
Maternal Hostility	-0.25	0.06	-2.57*		
Maternal Education	0.16	0.02	1.58		
Child age	-0.41	0.16	-4.11***		
Child sex	-0.08	0.01	-0.76		
			R = 0.49	R^2_{Adj} = 0.20	F = 6.25***

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 9

Child Responsiveness Predicting Total Maternal Nondirective Guidance (n=86)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.05	4.39*
Child responsiveness	0.22	0.05	2.09*		
Step 2				0.01	0.74
Child responsiveness	0.21	0.05	2.04*		
Maternal Education	0.09	0.01	0.86		
Step 3				0.18	10.17***
Child responsiveness	0.29	0.08	2.91**		
Maternal Education	0.15	0.02	1.56		
Child age	-0.42	0.17	-4.33***		
Child sex	-0.15	0.02	-1.47		
			R = 0.49	R^2_{Adj} = 0.20	F = 6.63***

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 10

Child Involvement Predicting Maternal Total Nondirective Guidance (n=86)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.01	1.16
Child Involvement	0.12	0.01	1.08		
Step 2				0.01	1.18
Child Involvement	0.12	0.01	1.09		
Maternal Education	0.12	0.01	1.09		
Step 3				0.18	9.39***
Child Involvement	0.20	0.04	1.95^t		
Maternal Education	0.20	0.04	1.95^t		
Child age	-0.43	0.18	-4.25***		
Child sex	-0.11	0.01	-1.03		
			R = .46	R^2_{Adj} = .17	F = 5.40**

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

II. Directive utterances. In the regression examining maternal sensitivity and directive utterances, the overall model accounted for 25.3% (adjusted 21.6%) of the variance (Table 11). In Step 2 maternal education emerged as a significant predictor (*Beta* = - .24, *t* = -2.22, *p* < .05); however it ceased to be a significant predictor by Step 3. At Step 3, age of child tested was a significant predictor (*Beta* = - .44, *t* = - 4.50 , *p* < .001), suggesting that mothers with younger children used higher levels of directive utterances to structure the tasks. In the regression examining maternal structuring, the final model accounted for 24.9% (adjusted 21.2%) of the total variance (Table 12). In Step 2, maternal education was a significant predictor (*Beta* = - .24, *t* = -2.28 , *p* < .05), but was no longer significant in Step 3. In Step 3, the age of child tested was a significant predictor (*Beta* = - .44, *t* = -4.44 , *p* < .001), with mothers who used more directive utterances being associated with younger children. In the regression examining maternal hostility, the overall model accounted for 30.1% (adjusted 26.7%) of the total variance (Table 13). Higher levels of maternal hostility were associated with more directive utterances at Step 1 (*Beta* = .27, *t* = 2.58 , *p* < .05). At Step 2, maternal education emerged as a significant predictor (*Beta* = - .21, *t* = -1.99, *p* = .05), but this effect ceased to be statistically significant in Step 3. In Step 3, it was revealed that mothers with younger children expressed more directive utterances (*Beta* = - .44, *t* = -4.59, *p* < .001). In the regression examining child responsiveness, the overall model accounted for 25.9 % (adjusted 22.3%) of the total variance (Table 14). At Step 1, child responsiveness was negatively associated with directive utterances (*Beta* = - .22, *t* = -2.10 , *p* < .05), but it was no longer statistically significant by Step 3. Similarly, maternal education was negatively associated with directive utterances in Step 2 (*Beta* = - .23, *t* = -2.23 , *p* < .05), but not in Step 3. In Step 3, the only statistically significant predictor was the age of the child (*Beta* = - .41, *t* = -4.23 , *p* < .001), indicating that mothers used more directive utterances

Table 11

Maternal Sensitivity Predicting Maternal Directive Guidance (n=86)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.00	0.36
Maternal Sensitivity	-0.07	0.00	-0.60		
Step 2				0.06	4.94*
Maternal Sensitivity	-0.05	0.00	-0.43		
Maternal Education	-0.24	0.06	-2.22*		
Step 3				0.19	10.46***
Maternal Sensitivity	-0.07	0.00	-0.70		
Maternal Education	-0.15	0.02	-1.53		
Child age	-0.44	0.19	-4.50***		
Child sex	-0.08	0.01	-0.85		
			R = 0.50	R^2_{Adj} = 0.22	F = 6.86***

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 12

Maternal Structuring Predicting Maternal Directive Guidance (n=86)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.00	0.08
Maternal Structuring	-0.03	0.00	-0.28		
Step 2				0.06	5.19*
Maternal Structuring	-0.04	0.00	-0.38		
Maternal Education	-0.24	0.06	-2.28*		
Step 3				0.19	10.19***
Maternal Structuring	-0.01	0.00	-0.11		
Maternal Education	-0.16	0.02	-1.61		
Child age	-0.44	0.18	-4.44***		
Child sex	-0.09	0.01	-0.88		
			R = .50	R^2_{Adj} = 0.21	F = 6.70***

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 13

Maternal Hostility Predicting Total Maternal Directive Guidance (n=86)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.07	6.65*
Maternal Hostility	0.27	0.07	2.58*		
Step 2				0.04	3.96^t
Maternal Hostility	0.24	0.06	2.32*		
Maternal Education	-0.21	0.04	-1.99^t		
Step 3				0.19	10.75***
Maternal Hostility	0.23	0.05	2.47*		
Maternal Education	-0.13	0.01	-1.29		
Child age	-0.44	0.18	-4.59***		
Child sex	-0.07	0.00	-0.73		
			R = 0.55	R^2_{Adj} = 0.27	F = 8.73***

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 14

Child Responsiveness Predicting Total Maternal Directive Guidance (n=86)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.05	4.42*
Child responsiveness	-0.22	0.05	-2.10*		
Step 2				0.05	4.99*
Child responsiveness	-0.21	0.04	-2.01*		
Maternal Education	-0.23	0.05	-2.23*		
Step 3				0.16	8.97***
Child responsiveness	-0.16	0.02	-1.64		
Maternal Education	-0.16	0.02	-1.65		
Child age	-0.41	0.16	-4.23***		
Child sex	-0.04	0.00	-0.39		
			R = 0.51	R^2_{Adj} = 0.22	F = 7.33***

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

when interacting with younger children. In the regression examining child involvement, the final model accounted for 27.0% (adjusted 23.4%) of the total variance (Table 15). Child involvement was a significant predictor of directive utterances (*Beta* = - .22, *t* = -2.04 , *p* < .05), with more maternal directive utterances being associated with children who involved their mothers less, but it was no longer statistically significant at Step 3. At Step 2, maternal education emerged as a statistically significant predictor of directive utterances (*Beta* = - .24, *t* = -2.33 , *p* < .05), but it was no longer statistically significant at Step 3. At Step 3, the only statistically significant predictor was age of child (*Beta* = - .42, *t* = -4.25 , *p* < .001), with mothers of younger children exhibiting more directive utterances.

Maternal guidance and joint play. The duration of joint play was measured in two separate 4-minute free play tasks (performed at the beginning and end of the procedure), and its association with maternal guidance was explored. In a regression to examine the relation between maternal directive guidance and the joint play duration of free play 1, the overall model accounted for 13.8% (adjusted 10%), with the child's age being the only statistically significant predictor (Table 16). In the regression examining maternal directive guidance in free play 2, the final model accounted for 18.7% (adjusted 15%) of the total variance (Table 17). In Step 1, directive utterances in free play 2 was a statistically significant predictor of joint play duration (*Beta* = - .22, *t* = -2.11 , *p* < .05) , suggesting that more directive utterances were associated with shorter joint play duration. However, by Step 3, this finding was no longer a statistical significant, while child age was a statistically significant predictor of maternal directive guidance. In the regressions examining maternal nondirective guidance and joint play in free play 1 and 2, only child age was a statistically significant predictor. The overall model for joint play in free play 1 accounted for 16.9% (adjusted 13%) of the total variance (Table 18), while

Table 15

Child Involvement Predicting Total Maternal Directive Guidance (n=86)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.05	4.17*
Child Involvement	-0.22	0.05	-2.04*		
Step 2				0.06	5.45*
Child Involvement	-0.22	0.05	-2.11*		
Maternal Education	-0.24	0.06	-2.33*		
Step 3				0.16	9.08***
Child Involvement	-0.15	0.02	-1.53		
Maternal Education	-0.16	0.02	-1.64		
Child age	-0.42	0.16	-4.25***		
Child sex	-0.05	0.00	-0.50		
			R = .52	R^2_{Adj} = .23	F = 7.48***

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 16

Joint Play in Free Play 1 Predicting Maternal Directive Guidance (n=87)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.01	0.48
Joint Play in Free Play 1	-0.08	0.01	-0.69		
Step 2				0.03	2.82 ^{t}
Joint Play in Free Play 1	-0.10	0.01	-0.94		
Maternal Education	-0.18	0.03	-1.68^t		
Step 3				0.10	4.74*
Joint Play in Free Play 1	-0.09	0.01	-0.89		
Maternal Education	-0.14	0.02	-1.32		
Child age	-0.32	0.08	3.04**		
Child sex	-0.06	0.00	-0.59		
			R = 0.37	R^2_{Adj} = 0.10	F = 3.27*

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 17

Joint Play in Free Play 2 Predicting Maternal Directive Guidance (n=87)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.05	4.46*
Joint Play in Free Play 2	-0.22	0.05	-2.11*		
Step 2				0.01	1.24
Joint Play in Free Play 2	-0.21	0.05	-2.02*		
Maternal Education	-0.12	0.01	-1.11		
Step 3				0.12	6.24**
Joint Play in Free Play 2	-0.17	0.03	-1.64		
Maternal Education	-0.08	0.01	-0.74		
Child age	-0.36	0.12	-3.50**		
Child sex	-0.07	0.00	-0.65		
			R = 0.43	R^2_{Adj} = 0.15	F = 4.72**

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 18

Joint Play in Free Play 1 Predicting Maternal Nondirective Guidance (n=87)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.02	1.96
Joint Play in Free Play 1	0.15	0.02	1.40		
Step 2				0.00	0.05
Joint Play in Free Play 1	0.15	0.02	1.41		
Maternal Education	0.03	0.00	0.23		
Step 3				0.15	7.17**
Joint Play in Free Play 1	0.16	0.03	1.58		
Maternal Education	0.07	0.00	0.69		
Child age	-0.38	0.14	-3.69***		
Child sex	-0.10	0.01	-0.98		
			R = 0.41	R^2_{Adj} = 0.13	F = 4.16**

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

the overall model for joint play in free play 2 accounted for 16.1% (adjusted 12%) of the total variance (Table 19). In all regressions, child age was negatively associated with maternal guidance (directive and nondirective), indicating that mothers with younger children used more directive and nondirective guidance.

Assessing for difference between tasks in terms of maternal guidance. Repeated measures ANOVAs were conducted to examine the differences in maternal guidance across the four tasks. Results revealed that the frequency of utterances differed across interaction contexts, $F (2.95, 259.27) = 91.94$, $p < .001$: fewer nondirective utterances were made in the interference task than in all other tasks. In addition, more directive utterances were made during the command task than any other task, and there were more directive utterances during the final free play (free play 2) compared to the interference task, $F (1.81, 159.54) = 191.87$, $p < .001$.

Objective 2

Objective 2 was designed to explore the childhood histories of aggression and social withdrawal (i.e., maternal risk status) within the sample, using the same sample as Objective 1 ($n = 89$). All those participants who were not original participants in the Concordia Project were excluded (i.e., spouses of original participants; $n = 31$). This criterion was applied and resulted in a sample of 58 dyads. The children in the dyads ranged from 2.00 to 6.12 years of age, with a mean age of 4.00 ($SD = 1.27$), with 35 girls and 23 boys.

Predicting total maternal guidance from maternal childhood histories of aggression and withdrawal. In the regression examining directive utterances, the overall model accounted for 37.9% (adjusted 31.9%) of the total variance (Table 20). In Step 1, mothers' histories of social withdrawal emerged as a significant predictor ($Beta = .34$, $t = 2.71$, $p < 0.01$), indicating that mothers who were more socially withdrawn in childhood exhibited more directive utterances.

Table 19

Joint Play in Free Play 2 Predicting Maternal Nondirective Guidance (n=87)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.02	1.85
Joint Play in Free Play 2	-0.15	0.02	-1.36		
Step 2				0.03	2.28
Joint Play in Free Play 2	-0.16	0.02	-1.49		
Maternal Education	0.16	0.02	1.51		
Step 3				0.11	5.58**
Joint Play in Free Play 2	-0.11	0.01	-1.08		
Maternal Education	0.19	0.03	1.92 ^{t}		
Child age	-0.34	0.11	-3.28**		
Child sex	-0.09	0.01	-0.83		
			R = 0.40	R^2_{Adj} = 0.12	F = 3.95

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 20

Maternal Childhood Histories Of Aggression And Social Withdrawal Predicting Total Directive Guidance (n=58)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.15	4.70*
Childhood history of aggression	0.16	0.03	1.30		
Childhood history of social withdrawal	0.34	0.11	2.71**		
Step 2				0.04	2.34
Childhood history of aggression	0.14	0.02	1.09		
Childhood history of social withdrawal	0.32	0.10	2.55*		
Maternal Education	-0.19	0.04	-1.53		
Step 3				0.20	8.26**
Childhood history of aggression	0.17	0.02	1.37		
Childhood history of social withdrawal	0.25	0.06	2.24*		
Maternal Education	-0.14	0.02	-1.21		
Child age	-0.46	0.20	-4.05***		
Aggression X Social withdrawal	0.08	0.01	0.65		
			R = 0.62	R^2_{Adj} = 0.32	F = 6.34***

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

The age of the child tested was also a significant predictor of directive utterances in Step 3 (*Beta* = - .46, t = -4.05, $p < .001$); mothers with younger children exhibited more directive utterances. In the regression examining nondirective utterances, the overall model accounted for 13.8% (adjusted 5.5%) of the total variance (Table 21). The only predictor to emerge as statistically significant was the age of the child (*Beta* = - .31, t = -2.36 , $p < .05$), indicating that mothers with younger children made more nondirective utterances.

Objective 3

Objective 3 was designed to explore the relation between the "success" of structured tasks (i.e., interference and command) and how maternal guidance may play a role in their success. Of the 89 dyads from Objective 1, there were 56 dyads in common that had compliance and attention seeking coded during the command and interference task respectively (August et al., 2013). The children in the dyads ranged from 2.00 to 5.95 years of age, with a mean age of 3.93 (*SD*=1.22), and were predominantly female (n = 34; 60.7%).

Predicting maternal guidance from measures of success. Hierarchical regressions were performed to examine the relation between "success" in the structured tasks (i.e., lack of noncompliance in command task and negative attention seeking in the interference task) and maternal guidance behavior (i.e., nondirective and directive utterances). In the regression examining the command task and directive utterances, the overall model accounted for 31.9% (adjusted 26.5%) of the total variance (Table 22). In Step 1, directive utterances were positively associated with noncompliance (*Beta* = .29, t = 2.20, $p < .05$), indicating that more directive utterances were related to higher levels of noncompliance. However, this effect was no longer statistically significant by Step 3. The age of the child emerged as a significant predictor in Step 3 (*Beta* = - .49, t = -4.02, $p < .001$), indicating that the mothers with younger children expressed

Table 21

Maternal Childhood Histories Of Aggression And Social Withdrawal Predicting Total Maternal Nondirective Guidance (n=58)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.03	0.90
Childhood history of aggression	0.06	0.00	0.48		
Childhood history of social withdrawal	-0.17	0.03	-1.27		
Step 2				0.01	0.61
Childhood history of aggression	0.08	0.01	0.59		
Childhood history of social withdrawal	-0.16	0.02	-1.17		
Maternal Education	0.11	0.01	0.78		
Step 3				0.10	2.88^t
Childhood history of aggression	0.13	0.01	0.93		
Childhood history of social withdrawal	-0.19	0.03	-1.44		
Maternal Education	0.15	0.02	1.13		
Child age	-0.31	0.09	-2.36*		
Aggression X Social withdrawal	-0.03	0.00	-0.21		
			R = 0.37	R^2_{Adj} = 0.06	F = 1.66

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 22

Child Noncompliance During the Command Task Predicting Maternal Directive Guidance (n=56)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.08	4.82*
Child noncompliance	0.29	0.08	2.20*		
Step 2				0.02	1.13
Child noncompliance	0.27	0.07	2.03*		
Maternal Education	-0.14	0.02	-1.06		
Step 3				0.22	8.14**
Child noncompliance	0.20	0.04	1.65		
Maternal Education	-0.01	0.00	-0.10		
Child age	-0.49	0.22	-4.01***		
Child sex	-0.04	0.00	-0.36		
			R = 0.56	R^2_{Adj} = 0.27	F = 5.96**

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

more directive utterances during the command task. No predictors in the regression examining the relation between maternal nondirective utterances and child noncompliance in the command task were statistically significant (Table 23). Neither regressions concerning maternal guidance (Table 24; Table 25; directive and nondirective, respectively) and negative attention seeking in the interference task reached statistical significance.

Discussion

The present study was designed to investigate three objectives: 1) the relation between maternal guidance and concurrent parenting and contextual variables; 2) the association between mothers' guidance and their levels of aggression and social withdrawal in childhood; and 3) how maternal guidance during structured (i.e., command and interference task) and non-structured (i.e, free play) tasks relates to their success (e.g., longer joint play, less noncompliance, less negative attention-seeking). Maternal guidance was conceptualized as either directive or nondirective. Findings relating maternal guidance to parental- and environmental-level factors are reviewed first, followed by findings concerning maternal guidance and appropriate task-related child behaviour.

Pertaining to the first objective, it was found that directive and nondirective maternal guidance (i.e., utterances) were associated differently with Emotional Availability (i.e., the mother-child relationship). Firstly, findings revealed that mothers with higher levels of sensitivity made more nondirective utterances to their child. Sensitivity involves being warm with one's child, but also being understanding of and flexible to the needs of one's child. Factor analyses have suggested that there is considerable overlap between sensitivity and guidance (e.g., Hopkins, Gouze, & Lavigne, 2013); perhaps, mothers using more nondirective utterances may have been especially conscious of their child's needs and offered gentle guidance to support

Table 23

Child Noncompliance During The Command Task Predicting Maternal Nondirective Guidance (n=56)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.00	0.02
Child noncompliance	-0.02	0.00	-0.13		
Step 2				0.01	0.34
Child noncompliance	-0.01	0.00	-0.05		
Maternal Education	0.08	0.01	0.58		
Step 3				0.04	1.07
Child noncompliance	-0.04	0.00	-0.26		
Maternal Education	0.13	0.02	0.93		
Child age	-0.21	0.04	-1.43		
Child sex	-0.04	0.00	-0.28		
			R = 0.22	R^2_{Adj} =-0.03	F = 0.62

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 24

Child Negative Attention-Seeking During the Interference Task Predicting Maternal Directive Guidance (n=56)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.02	0.94
Child negative attention-seeking	0.13	0.02	0.97		
Step 2				0.03	1.90
Child negative attention-seeking	0.13	0.02	0.97		
Maternal Education	-0.18	0.03	-1.38		
Step 3				0.08	2.19
Child negative attention-seeking	0.07	0.00	0.49		
Maternal Education	-0.10	0.01	-0.71		
Child age	-0.29	0.07	-2.02*		
Child sex	0.07	0.00	0.52		
			R = 0.36	R^2_{Adj} = 0.06	F = 1.84

^{t}p < 0.10, *p < 0.05, **p < 0.01, ***p < .001

Table 25

Child Negative Attention-Seeking During the Interference Task Predicting Maternal Nondirective Guidance (n=56)

Variables	Beta	Sr^2	T	R^2_c	F_{ch}
Step 1				0.03	1.81
Child negative attention-seeking	0.18	0.03	1.35		
Step 2				0.03	1.62
Child negative attention-seeking	0.18	0.03	1.35		
Maternal Education	-0.17	0.03	-1.27		
Step 3				0.00	0.03
Child negative attention-seeking	0.17	0.03	1.22		
Maternal Education	-0.16	0.02	-1.13		
Child age	-0.03	0.00	-0.22		
Child sex	-0.02	0.00	-0.12		
			R = 0.25	R^2_{Adj} =-0.01	F = 0.85

$^{t}p < 0.10$, $*p < 0.05$, $**p < 0.01$, ***p < .001

them appropriately while respecting their autonomy. However, it is interesting that no relation was found between nondirective utterances and the maternal structuring dimension of emotional availability. Structuring encompasses many elements besides guiding utterances, such as limit-setting, allowing the child to explore, and the success of attempts to structure play (i.e., the child's behavior). Thus, it is possible that nondirective utterances simply do not adequately capture the complexity of the EA structuring scale.

Results also revealed that nondirective utterances were negatively associated with hostility, while directive utterances were positively associated with hostility. The EA scale of hostility includes overt hostility (e.g., yelling, threats of abuse, physical harshness, etc.), which is relatively rare to observe, as well as covert hostility, which tends to reflect a low-level negative affect (e.g., displays of boredom, impatience, etc.). In the present study, mothers who showed their boredom or impatience may have been more likely to attempt to control the task to make it more stimulating for themselves, whereas more patient mothers may have followed their child's lead, while supplementing with gentle guidance. Previous research has not explored these parenting variables explicitly in association with each other. However, Ispa and colleagues (2013) found that when maternal negative regard was combined with maternal directive behaviour, the child's engagement was lower than with maternal positive regard. Thus, it may be important to understand nondirective and directive utterances in relation to the level of maternal hostility, or even other variables, as previous research suggests it has important implications for child behaviour.

Furthermore, higher amounts of maternal nondirective utterances and lower amounts of directive utterances were each associated with children being more responsive with their mothers during the interaction. The EA scale of child responsiveness assesses the extent to which a child

responds to their mother's bids for interaction with pleasure and eagerness. This finding complements past research (Vandermaas-Peeler, Way, & Umpleby, 2003) and reflects the fact that a child is more likely to show eagerness when their mother's guidance is suggestive rather than controlling. In addition, more directive utterances were associated with lower levels of child involvement. The EA scale of child involvement evaluates the extent to which the child attends to and engages the parent in play (e.g., requests assistance from mother). Thus, this finding may reflect the fewer opportunities a child has to engage a controlling parent, and that children who involve their mothers more are more likely to elicit nondirective guidance (e.g., suggestions; Rogoff, 1990).

Contextual variables that have been previously associated with negative parenting were also explored (Serbin, Stack, Kingdon, Mantis, & Enns, 2011). Findings revealed that nondirective and directive maternal behaviour had distinct associations with contextual variables. Results indicated that better quality of the home environment was related to more nondirective utterances and less directive utterances. It is important to note that scores on the HOME scale capture cognitive stimulation not only in the physical environment (e.g., toys and books), but also in relation to the parent-child interaction style (e.g., responsive, allows child to explore, etc.). Thus, a higher usage of nondirective utterances may reflect the mother's overall desire to encourage their child to reach their potential, via guidance and scaffolding, as has been found in previous research (e.g., Erickson, Sroufe, & Egeland, 1985). Conversely, mothers using more directive utterances may be more focused on their own goals as opposed to their child's, and may not approach problem solving or other situations from a scaffolding perspective. In addition, maternal education showed a statistical trend towards being positively associated with nondirective utterances and negatively associated with directive utterances. This result

complements past findings indicating that gentle guidance and sensitive parenting in didactic tasks were associated positively with maternal education (Bigelow et al., 2010; Gustafsson, Cox, & Blair, 2012; Laosa, 1980), while less educated mothers tended to express more directives or were more intrusive (Borduin & Henggeler, 1981; Gustafsson et al., 2012; Laosa, 1980). Importantly, Coleman and Karraker (1997) hypothesized that formal education may be a mechanism for developing self-efficacy, i.e., the measure of one's own ability to complete tasks. This hypothesis could also be applied to the parenting stress findings, with higher parenting stress scores (PSI) being associated with more directive utterances. A high PSI score can reflect lower perceived competence as a parent. Consequently, using directive utterances may reflect attempts to better control their child's behaviour, as opposed to allowing the child the freedom to explore or be guided in a task. Previous research supports this finding: parenting stress is associated with many indices of negative parenting (e.g., less nurturing, harsher parenting; Abidin, 1990; Conger & Donnellan, 2007; Crnic, Gaze, & Hoffman, 2005; Deater-Deckard, 1998).

Taken together, results suggest that contextual and parent-level variables tend to relate distinctly to maternal guidance, with higher amounts of *nondirective* utterances associated with higher HOME scores, better mother-child relationship and higher maternal education, and higher amounts of *directive* utterances associated with lower HOME scores, higher parenting stress, poorer mother-child relationship and lower maternal education. Given that nondirective and directive guidance appears to distinguish between healthy and maladaptive sets of variables respectively, this suggests that a person-centered or profiling conceptualization may be more helpful and comprehensive, rather than understanding parenting practices or contextual factors in isolation. Similar to the results above with nondirective guidance, Cook, Roggman, and D'zatko

(2012) used statistical analyses to formulate a "developmental" class of low-income mothers; mothers in this class or grouping portrayed higher levels of supportiveness, sensitivity, stimulation in the home environment, and were less intrusive than the other two classes in the study. Cook and colleagues (2012) assert that exploring clusters of parenting patterns to develop consistent profiles helps to conceptualize the parent as an "organized whole."

In order to gain an understanding of how mothers' histories may also play a role in their guidance, risk factors from the mothers' childhood were also examined. Specifically, for the second objective, mothers' guidance was explored in relation to their own childhood histories of aggression and social withdrawal. Results revealed that mothers with higher levels of childhood social withdrawal showed higher amounts of directive utterances. Previous research with the Concordia Project sample has found that childhood histories of social withdrawal are associated with an intrusive maternal request pattern with preschoolers (e.g., repeated commands; Grunzeweig, Stack, Serbin, Ledingham, & Schwartzman, 2009) and less maternal structure and guidance during decision making in a problem-solving task with a sample of older children (Martin et al., 2012). No other studies have explored maternal childhood levels of social withdrawal in relation to later maternal guidance. However, the literature suggests that mothers may transfer their social inhibition to their children via their directive and controlling mothering by aggravating the child's sense of insecurity and incompetence (Burgess, Rubin, Cheah, & Nelson, 2001; Degnan, Henderson, Fox, & Rubin, 2008; Hane, Cheah, Rubin, & Fox, 2008; Mills et al., 2012; Rubin, Coplan, Bowker, & Menzer, 2011). Fortunately, parents may be able to protect against internalizing problems in their own children by demonstrating their respect for their child's autonomy, as this contributes to the child's sense of competence and self-efficacy (Mills et al., 2012). More research (including measures of children's social behavior or skills

and development at multiple time points) would be necessary to establish this phenomenon within this sample.

Although long-term child outcomes were not explored in the present study, the immediate effectiveness of nondirective and directive guidance in structured and unstructured tasks was examined. Much of the existing literature has focused on how maternal guidance relates to a child's later learning (e.g., Martin, Ryan, & Brooks-Gunn, 2007; Vandermaas-Peeler, Nelson, Bumpass, & Sassine, 2009; etc.) whereas fewer studies have related it to immediate child behaviour. Although maternal directiveness may be appropriate for more structured or goal-oriented tasks (e.g., Kuczynski & Kochanska, 1995), controlling behaviour is unnecessary during free play, when the child should be exploring their environment freely (Rubin, Cheah, & Fox, 2001). Results revealed that in free play 2, there was a statistical trend suggesting that more maternal directive utterances were associated with less joint play. It is possible that assessing the quality (in conjunction with the duration) of the joint play would shed further light on the impact of the use of commands. There was also a statistical trend for directive behaviour in relation to noncompliance in the command task; specifically, higher amounts of directive utterances were associated with more noncompliance. Previous research has shown that the use of repetitive requests is ineffective, as it leaves little opportunity for the child to comply, thus leading to more fruitless requests and ultimately parental escalation or aggression or hostility (Barkley, 1981; Grunzeweig et al., 2009; Patterson, 2002).

Finally, it is important to consider the findings of maternal guidance across children's age and across contexts. Mothers expressed more directive and more nondirective guidance with younger children. This could suggest that the mothers were working within the child's Zone of Proximal Development and offering guidance that was appropriate to their child's age needs

(Vygotsky, 1978; Wood, 1999). Other research has found that mothers of younger children used more guidance in both structured and goal-oriented tasks (e.g., cooking task; Vandermaas-Peeler et al., 2003), as well as less structured tasks (e.g., free play; Belsky, Goode, & Most, 1980; Fiese, 1990). In addition, results from the present study demonstrated that mothers expressed different amounts of both directive and nondirective guidance depending on the task. As expected, the command task elicited the highest number of directive utterances, since this task requires parents to provide commands to their children.

Future studies should consider the transactional nature of these mother-child interactions. This would allow for the evaluation of the "balance of power", i.e., the extent to which mother *and* child are attempting to control each other's behaviour (Damast, Tamis-LeMonda, & Bornstein, 1996). Furthermore, future studies should also aim to explore the contingency (i.e., the temporal and sequential relation) and the appropriateness (i.e., the content, sophistication, or topic) of the mother's behaviour (Dumas, LaFreniere, & Serketich, 1995). Relatedly, it would be helpful to test out hypotheses concerning the transfer and maintenance of childhood social withdrawal via maternal directive behaviour (Mills et al., 2012). This could be accomplished by assessing the type and frequency of the mother's guidance longitudinally while incorporating the child's reactions to these attempts at control and relating them to the child's social outcomes throughout their childhood. This may provide further knowledge concerning the types of maternal guidance that may be protective and foster the child's wellbeing versus those that are more detrimental to the child's wellbeing or exacerbate maladaptive behaviour patterns.

Notwithstanding the fact that the present study contributed in a number of ways, there were some limitations. It is possible that the operationalization of directive behaviour was not sensitive enough; for example, some measures of directive behaviour include physical control,

which may be more representative of intrusive mothers (e.g., Kermani & Brenner, 2000). Additionally, the present study focused only on the mothers' utterances, and very little on the children's behaviour. Relatedly, considering that many of these families are two-parent ones, the incorporation of paternal guidance would have been helpful. Some research has highlighted the common differences in parenting practices between mothers and fathers, and Martin and colleagues (2007) conjecture that the effects of maternal and paternal guidance or supportiveness are additive, or perhaps even multiplicative due to a causal "synergistic dynamic." Future studies should endeavour to design tasks and coding schemes that incorporate the guidance behaviour of both parents in relation to their child.

Taken together, results from this study contribute to knowledge about maternal guidance, specifically exploring its relation to parent-level characteristics. In the past, much of the focus on maternal guidance has been on children's educational outcomes, in part due to the restricted contexts in which it was explored (i.e., learning tasks). Importantly in the present study, child outcomes were explored in both structured and unstructured tasks, and conceptualized as the expected or desired behaviour based on the task. In addition, results from this study contributed to the paucity of research on maternal guidance in the context of low-income and at-risk families. Inclusion of maternal histories of childhood aggression and social withdrawal shed light on the potential transfer of risk, suggesting that mothers may pass on their risk for social withdrawal by being overly directive. Moreover, findings contribute to the understanding of nondirective guidance in its relation to positive features of the mother child relationship as well as stimulation at home, while directive guidance was associated with negative contextual and parental features, potentially due to its intrusive nature. These distinct groupings of variables based on maternal guidance provide support for the conceptualization of parenting at the class or profile level

(Cook et al., 2012). Importantly, examining parenting patterns rather than specific behaviours could ease the design and implementation of parenting intervention programs, not only by making treatment applicable to clusters of people, but also by understanding people as a whole and not defining them by single parenting practices (Cook et al., 2012).

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Appendix A

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 B

Full Protocol

PARENT-CHILD/HEALTH CANADA:

Full Protocol

May 15, 1996

DAY 1 PROTOCOL:

1- Examiner: - takes care of introductions,
- builds rapport with child,
- explains general Day 1 procedures to Ss,
- makes sure mother has read and signed consent form,
- administers HOME interview items as part of the warm-up conversation,
- explains **saliva sampling** and obtains a sample from both of them **immediately before standard testing** (record the time that all samples are taken on the appropriate form).

Interviewer: - chooses the most appropriate room for interaction series,
- sets up camera and materials for Series 1 in the standard order (see toy lay-out sheet),
- removes all other unnecessary materials,
- unplugs that room's telephone if present,
- and attempts to remain as invisible to the child as possible until Series 2.

(±20 min.).

2- Examiner: - begins administering Bayley II or SB4.

Interviewer: - **a)** if mother does not need to stay with child (for SB4): Interviewer begins administering the demographic, obstetric, temperament and health questionnaires to her;

- **or b)** if mother needs to stay with her child, the Interviewer can supervise siblings, do HOME observation items, score/enter data, or read a good book!!!

(30-60 min. or whatever the child can handle)

BREAK - **The 2nd saliva sample** is taken from both mother and child immediately (±10 min.) following standard testing. Examiner asks mother to come, if she's with Interviewer.

- Make sure you ask Ss if they need to go to the bathroom or get a change of diaper.

- If needed, Interviewer informs Examiner of interaction setup location.)

3- Before bringing Ss to the interaction room, the Examiner gives mother the following Series 1 instructions.

Série 1

"Maintenant, on aimerait vous voir jouer ensemble. Comme tu sais, on va enregistrer ça sur vidéo. Donc, pour être sûr que vous restiez tous(tes) les deux bien en vue pendant qu'on filme, c'est très important que vous restiez assis(es) tous(tes) les deux sur le tapis qu'on a mis par terre. Moi, je vais rester silencieuse derrière la caméra pour être bien sûr qu'elle fonctionne bien. Donc, essayez d'être le plus naturels possible et faites comme si je n'étais pas là. Alors, la première chose qu'on aimerait que tu fasses est simplement de jouer avec (ENFANT) comme vous le faites d'habitude pendant environ 15 minutes. Vous pouvez prendre n'importe quel des jouets sur le tapis. Puis, quand tu entendras l'alarme sonner, tu pourras arrêter de jouer. As-tu des questions? C'est très important aussi que tu attendes mon signal avant de commencer à jouer, OK?"

Examiner then gets Ss settled on the carpet and instructs child (if s/he can understand such instructions) to remain within its limits; e.g.:

"Maintenant, (CHILD), tu vas jouer avec maman, mais j'aimerais que tu restes sur le tapis. Fais comme si le tapis était ton carré de sable et que c'est défendu de sortir du carré de sable..." etc.

Examiner goes behind the camera and tells mother they can begin. Examiner is responsible for timing Series 1,2, and 3. The beeper should be started and stopped over the microphone so the coders are clear about when to begin and end coding that episode. [If there is an interruption of filming during the **first** half of the series (e.g., bathroom), reset the timer to 15 min. and start over. If the interruption occurs in the **second** half of the series **and** lasts less than 2 min., just pause and restart timer when the interaction resumes; but if the trip takes **more** than 2 min., Series 1 will have to be repeated at the end of Day 2.]

At the end of Series 1, Examiner administers "Maternal perceptions" questionnaire. If mother reports a score of 1 or 2, thus indicating that either her or her child's behavior was not natural, Series 1 should be repeated on Day 2.

(±20 min.)

BREAK - Everybody leaves interaction room during break so that the
(±10 min.) Interviewer can reposition materials for Series 2, and position a barrier (e.g., Fisher Price gate, a playpen) that will safely prevent 12-36 mo. child from leaving interaction room during separation episode.

- Bathroom check

4- While the Examiner supervises the child away from the interaction room, she asks mother to join the Interviewer there. The Interviewer will then give mother the following Series 2 instructions so as not to be heard by child. (If child becomes upset about his/her mother's departure, Examiner will give her the instructions in the child's presence.)

Série 2

FREE PLAY (4 MIN)

"La prochaine période de jeux va aussi être filmé mais va avoir 4 parties: En premier, tu va recommencer à jouer avec (ENFANT) comme tantôt, mais juste pour une couple de minutes jusqu'à ce que tu entendes l'alarme sonner, comme tantôt."

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).

SEPARATION AND REUNION (2+4=6 MIN)

"A ce moment-là, tu sortiras de la pièce pour laisser (ENFANT) jouer tout seul avec les jouets. Et pour être sûr qu'il/elle ne te suivra pas quand tu va sortir, je vais placer une barrière en travers la porte/arche. Bien sûr, si (ENFANT) devient trop dérangé par ton absence, ou si tu te sens mal à l'aise, on arrêtera puis tu pourras le/la rejoindre. Sinon, après une couple de minutes, je vais sortir pour te dire que c'est le temps d'aller rejoindre (ENFANT) sur le tapis. Puis, tu passera 3-4 minutes de plus avec lui/elle et on te laissera savoir quand tout est fini."

Examiner programs beeper for 6 min. and presses "start" when mother exits the room. Then, after 2 minutes, she signals Interviewer to go get mother by pressing "pause" and presses "start" again when mother comes in. Examiner should keep child in view during separation and reunion episodes.

"Donc, pour résumer, commencez par jouer ensemble comme vous le faites d'habitude; puis, quand tu entendras l'alarme, pousse les jouets de côté et choisis un casse-tête. Quand tu me verras entrer, sors de la pièce jusqu'à ce que je te dise te rejoindre (ENFANT). J'ai une petite liste qui pourra t'aider à te souvenir des étapes, et je vais la placer juste ici. As-tu des questions? J'aimerais juste te rappeler encore de rester sur la couverture pour que vous puissiez rester bien en vue. J'aimerais aussi quand tu sortiras que tu restes invisible pour (ENFANT), mais assez près pour entendre l'alarme. N'oublie pas d'attendre le signal avant de commencer, OK?"

At the end of Series 2, Interviewer takes cortisol sampling and **then** administers "Maternal perceptions" questionnaire If mother reports a score of 1 or 2, Series 2 should be repeated on Day 2. The interviewer then takes the final saliva sample from both the parent and her child.

(±25 min.)

5- At the end of Day 1, Interviewer administers Day 1 Touch Questionnaire, gives instructions for mother and father questionnaire packages, and summarizes Day 2 procedures.

N.B. If child needs to nap during Day 1, Interviewer can take that opportunity to begin interviews with mother.

Total time, 2-3 hours

Fill out the VideoTape log sheet. Clean Bayley II and toys between each visit

DAY 2 PROTOCOL:

1- Examiner reconnects with child. Rapport building between Interviewer and mother, this includes Day 2 general instructions.
(±15 min)

2- Examiner finishes Bayley II or SB4. If mother does not need to stay with child, Interviewer answers any questions she might have about the questionnaires and finishes interviewing her. But if mother still needs to stay with child, Interviewer can set up Series 3 materials.

BREAK - Series 3 setup, if not done already
(±10 min.) - Bathroom check

3- While Examiner supervises child away from interaction room, she tells mother to go to the interaction room to meet Interviewer who gives her the following Series 3 instructions so as not to be heard by child. If child becomes upset about mother's departure, the Examiner gives her the instructions in the child's presence.

Série 3

FREE PLAY (4 MIN)

"C'est la dernière fois qu'on va vous filmer, et il y a 4 choses qu'on aimerait que vous fassiez ensemble. D'abord, comme l'autre jour, 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. Le pad sera placé tout près du tapis. (PRESS BEEPER WHEN MOTHER BEGINS INTRODUCING TASK)

INTERFERENCE TASK (3 MIN)

Quand tu entendras l'alarme sonner, vous arrêterez pour faire autre chose encore. On aimerais voir comment (ENFANT) réagit quand tu es très occupée. Tu sais comment c'est des fois quand tu es au téléphone ou bien en train de faire à manger et que c'est pas possible de lui donner toutes l'attention qu'il/elle demande. Pour observer ça, on aimerais que tu tournes la page sur ton pad pour remplir les questionnaires qui sont juste en-dessous (SHOW HER). Et pendant que tu les remplis, on aimerait que tu te retournes un peu pour lui faire comprendre que ce que tu fais est trés important. (ENFANT) pourra continuer à jouer avec les jouets pendant ce temps-là; mais assure-toi encore qu'il/elle reste assis(e) sur le tapis. Tu continueras de travailler sur les questionnaires jusqu'à ce que tu entendes une autre alarme. (PRESS BEEPER WHEN MOTHER BEGINS QUESTIONNAIRE)

FREE PLAY (4 MIN)

A ce moment-là, mets le pad de côté et recommence à jouer avec (ENFANT) comme vous le faites d'habitude jusqu'à ce l'alarme te dise que c'est fini. N'oublie pas de rester à l'intérieur des limites du tapis pour que la caméra puisse vous garder tous les deux bien en vue.

Donc, en résumé, commencez par jouer avec (ENFANT) comme vous le faites d'habitude; ensuite, quand tu entends la 1ère alarme, prends le pad et fais-lui faire des tâches; puis, à la 2e alarme, commence à travailler sur le questionnaire jusqu'à ce que tu entendes la 3e alarme. A ce moment-là, tu recommences simplement à jouer avec (ENFANT). Comme la dernière fois, on a une petite liste qui va t'aider à te rappeler des étapes. As-tu des questions? N'oublie pas d'attendre le signal avant de commencer, OK?"

At the end of Series 3, Interviewer administers "Maternal perceptions" and "Touch" questionnaires.

(±25 min.)

BREAK
±10 min.

4- Examiner administers the "Parenting Practices Interview", investigate any clinical concers that might have arisen through other questionnaires, administers the remaining HOME interview items and the SCID modules (if required). Meanwhile, the Interviewer administers the Peabody to the child. When Examiner is done with her interviews, the Interviewer joins her for the wrap-up.

(±60 min. or more, as needed)

Total time, 2-3 hours.
Fill out the VideoTape log sheet. Clean Bayley II and toys between each visit.

Appendix C

Demographic Information Questionnaire (DIQ)

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 _____ $

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

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

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 B quel nom dans l'annuaire téléphonique: Nom complet et lien avec toi: _____

Adresse électronique: _____

Adresse des parents: _____

_____

_____

Appendix D

Intercorrelation Tables

Table 1
Intercorrelation Matrix Between Predictors

		Maternal education	Sex of Child	Age of child tested	Joint play (Free Play 1)	Joint play (Free Play 2)	HOME scores	PDI scores	Maternal sensitivity (EA)	Maternal structuring (EA)	Maternal hostility (EA)	Child responsiveness (EA)	Child involvement (EA)	Maternal childhood history of aggression	Maternal childhood history of social withdrawal	Aggression X Social withdrawal	Non compliance during the Command task	Negative attention-seeking during Interference task
Maternal education	Pearson Correlation	1	-.084	.187	-.150	.079	.445**	-.065	.081	-.040	-.139	.060	-.006	-.164	-.136	-.049	-.140	-.005
	Sig. (2-tailed)		.434	.080	.165	.467	.000	.554	.461	.712	.203	.579	.959	.124	.205	.647	.304	.972
Sex of Child	Pearson Correlation	-.084	1	-.038	-.089	.120	-.121	-.022	.100	.214*	-.074	.273**	.261*	.133	.056	-.012	.011	-.055
	Sig. (2-tailed)	.434		.724	.414	.270	.262	.840	.361	.047	.501	.010	.015	.213	.604	.915	.938	.689
Age of child tested	Pearson Correlation	.187	-.038	1	.026	.120	.207	-.132	-.052	.016	-.037	.095	.128	.142	-.085	.017	-.183	-.235
	Sig. (2-tailed)	.080	.724		.814	.268	.054	.229	.637	.882	.735	.375	.239	.183	.430	.873	.177	.081
Joint play (Free Play 1)	Pearson Correlation	-.150	-.089	.026	1	.322**	.293**	-.209	.143	.176	.072	.150	.227*	-.009	-.016	-.215*	-.191	.061
	Sig. (2-tailed)	.165	.414	.814		.002	.006	.057	.194	.110	.514	.165	.038	.933	.882	.045	.166	.663
Joint play (Free Play 2)	Pearson Correlation	.079	.120	.120	.322**	1	.139	-.217*	.208	.215*	-.145	.338**	.306**	.037	-.161	.002	.061	.168
	Sig. (2-tailed)	.467	.270	.268	.002		.200	.048	.057	.049	.189	.001	.005	.731	.136	.987	.660	.225
HOME scores	Pearson Correlation	.445**	-.121	.207	.293**	.139	1	-.367**	.230*	.199	-.276*	.098	.130	-.305**	-.306**	-.301**	-.448**	-.126
	Sig. (2-tailed)	.000	.262	.054	.006	.200		.001	.034	.068	.011	.366	.235	.004	.004	.004	.001	.361
PDI scores	Pearson Correlation	-.065	-.022	-.132	-.209	-.217*	-.367**	1	-.215	-.056	.228*	-.167	-.200	.215*	.154	.343**	.394**	.112
	Sig. (2-tailed)	.554	.840	.229	.057	.048	.001		.052	.617	.039	.127	.072	.048	.160	.001	.003	.417
Maternal sensitivity (EA)	Pearson Correlation	.081	.100	-.052	.143	.208	.230*	-.215	1	.739**	-.625**	.536**	.526**	.066	-.157	-.172	-.176	.085
	Sig. (2-tailed)	.461	.361	.637	.194	.057	.034	.052		.000	.000	.000	.000	.547	.149	.113	.202	.543
Maternal structuring (EA)	Pearson Correlation	-.040	.214*	.016	.176	.215*	.199	-.056	.739**	1	-.468**	.523**	.545**	.250*	-.032	-.130	-.006	.034
	Sig. (2-tailed)	.712	.047	.882	.110	.049	.068	.617	.000		.000	.000	.000	.020	.768	.231	.963	.809
Maternal hostility (EA)	Pearson Correlation	-.139	-.074	-.037	.072	-.145	-.276*	.228*	-.625**	-.468**	1	-.301**	-.198	.132	.227*	.347**	.207	-.124
	Sig. (2-tailed)	.203	.501	.735	.514	.189	.011	.039	.000	.000		.005	.067	.227	.036	.001	.133	.371
Child responsiveness (EA)	Pearson Correlation	.060	.273**	.095	.150	.338**	.098	-.167	.536**	.523**	-.301**	1	.753**	.052	-.168	-.004	-.225	.032
	Sig. (2-tailed)	.579	.010	.375	.165	.001	.366	.127	.000	.000	.005		.000	.628	.116	.968	.096	.813
Child involvement (EA)	Pearson Correlation	-.006	.261*	.128	.227*	.306**	.130	-.200	.526**	.545**	-.198	.753**	1	.234*	-.208	-.080	-.232	.113
	Sig. (2-tailed)	.959	.015	.239	.038	.005	.235	.072	.000	.000	.067	.000		.030	.055	.464	.091	.415
Maternal childhood history of aggression	Pearson Correlation	-.164	.133	.142	-.009	.037	-.305**	.215*	.066	.250*	.132	.052	.234*	1	-.023	.155	.216	-.121
	Sig. (2-tailed)	.124	.213	.183	.933	.731	.004	.048	.547	.020	.227	.628	.030		.830	.148	.110	.376
Maternal childhood history of social withdrawal	Pearson Correlation	-.136	.056	-.085	-.016	-.161	-.306**	.154	-.157	-.032	.227*	-.168	-.208	-.023	1	.094	.356**	-.023
	Sig. (2-tailed)	.205	.604	.430	.882	.136	.004	.160	.149	.768	.036	.116	.055	.830		.381	.007	.868
Aggression X Social withdrawal	Pearson Correlation	-.049	-.012	.017	-.215*	.002	-.301**	.343**	-.172	-.130	.347**	-.004	-.080	.155	.094	1	.313*	-.123
	Sig. (2-tailed)	.647	.915	.873	.045	.987	.004	.001	.113	.231	.001	.968	.464	.148	.381		.019	.366
Non compliance during the Command task	Pearson Correlation	-.140	.011	-.183	-.191	.061	-.448**	.394**	-.176	-.006	.207	-.225	-.232	.216	.356**	.313*	1	.210
	Sig. (2-tailed)	.304	.938	.177	.166	.660	.001	.003	.202	.963	.133	.096	.091	.110	.007	.019		.120
Negative attention-seeking during Interference task	Pearson Correlation	-.005	-.055	-.235	.061	.168	-.126	.112	.085	.034	-.124	.032	.113	-.121	-.023	-.123	.210	1
	Sig. (2-tailed)	.972	.689	.081	.663	.225	.361	.417	.543	.809	.371	.813	.415	.376	.868	.366	.120	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 2.

Correlations between Maternal Directive Guidance and Maternal Nondirective Guidance Across Four Tasks

		Free play 1: Maternal directive	Command: Maternal directive	Interference : Maternal directive	Free play 2: Maternal directive	Free play 1: Maternal nondirective	Command: Maternal nondirective	Interference : Maternal nondirective	Free play 2: Maternal nondirective
Free play 1: Maternal directive	Pearson Correlation	1	.384**	.463**	.703**	.138	.197	.071	.038
	Sig. (2-tailed)		.000	.000	.000	.197	.064	.511	.721
Command: Maternal directive	Pearson Correlation	.384**	1	.143	.241*	.086	-.257*	-.077	-.003
	Sig. (2-tailed)	.000		.182	.023	.421	.015	.475	.981
Interference: Maternal directive	Pearson Correlation	.463**	.143	1	.424**	.117	.250*	.404**	.036
	Sig. (2-tailed)	.000	.182		.000	.276	.018	.000	.738
Free play 2: Maternal directive	Pearson Correlation	.703**	.241*	.424**	1	.129	.161	-.046	.014
	Sig. (2-tailed)	.000	.023	.000		.228	.132	.669	.897
Free play 1: Maternal nondirective	Pearson Correlation	.138	.086	.117	.129	1	.478**	.206	.462**
	Sig. (2-tailed)	.197	.421	.276	.228		.000	.053	.000
Command: Maternal nondirective	Pearson Correlation	.197	-.257*	.250*	.161	.478**	1	.271*	.393**
	Sig. (2-tailed)	.064	.015	.018	.132	.000		.010	.000
Interference: Maternal nondirective	Pearson Correlation	.071	-.077	.404**	-.046	.206	.271*	1	.182
	Sig. (2-tailed)	.511	.475	.000	.669	.053	.010		.088
Free play 2: Maternal nondirective	Pearson Correlation	.038	-.003	.036	.014	.462**	.393**	.182	1
	Sig. (2-tailed)	.721	.981	.738	.897	.000	.000	.088	

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).