Influences of Context and Age on Maternal Request Strategies and Child Compliance and Noncompliance in a High-Risk Intergenerational Sample

Naomi Grunzeweig

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ABSTRACT

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Compliance and noncompliance with maternal requests represent key milestones in children's social development. The objectives of the present study were to: (1) investigate whether maternal requests, and child compliance and noncompliance vary according to play context, maternal request strategy, child noncompliance strategy, and child age, and (2) examine the contribution of maternal childhood histories of aggression and withdrawal to the prediction of maternal request strategies and child compliance and noncompliance.

Participants were recruited from the Concordia Longitudinal Risk Project, which began in 1977 when children in Grades 1, 4, or 7 from disadvantaged neighbourhoods were classified along dimensions of aggression and social withdrawal. Seventy-four mothers were videotaped in their homes while they interacted with their children (aged 2 to 6 years) during three play contexts: a puzzle task, a free play, and a command task. Maternal request strategies and child compliance and noncompliance were coded using the Request/Compliance Coding Scheme.

In general, the results supported the hypotheses that (1) child compliance and noncompliance are related to maternal request strategies, which vary according to child age and play context, and that (2) maternal childhood histories of social withdrawal

contribute to the prediction of request strategies, which serve to predict child compliance and noncompliance. Taken together, these results elucidate the role of play context in the development of compliance with maternal requests, and broaden the current understanding of the pathways towards maladaptive and healthy social development. Furthermore, these results have implications for early interventions and parent training programs.

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Table of Contents

List of Figures

List of Tables

List of Appendixes

Introduction

The ability to comply with maternal demands is a key milestone in a child's social and cognitive development (Kopp, 1982). During the preschool years, compliance to maternal requests serves as an important index of a child's ability to regulate his or her own behaviour, and to observe general standards of conduct (Kochanska & Aksan, 1995; Kopp, 1982). Generally, young children comply immediately with 60 to 80% of parental requests (Kuczynski, 2003). Although excessive noncompliance can be indicative of childhood dysfunction, noncompliant behaviour can also provide children with a context in which they can learn to assert their autonomy in a socially acceptable manner (Kuczynski & Kochanska, 1990). From this perspective, noncompliance can be viewed as a means for children to employ active strategies to influence their parents (Kuczynski, Kochanska, Radke-Yarrow, & Girnius-Brown, 1987).

Compliance has been operationally defined in several ways; for example, it can refer to the acknowledgment of maternal suggestions in a teaching context, cooperation with maternal suggestions and requests, and obedience to maternal directives (Schneider-Rosen & Wenz-Gross, 1990). The research on child compliance tends to focus on the mother-child relationship, primarily because children spend a large part of their early years with their mothers. Furthermore, play is a predominant activity during early childhood, and interactions between mothers and their children primarily occur within a play setting (Bornstein, 1989). The focus of the present study was on child compliance and noncompliance with maternal requests during the preschool years. Compliance with maternal requests was measured within the context of various play situations.

In a developmental framework, the notion of compliance is couched within the larger, more complex construct of self-regulation, which can be (simply) defined as the emerging ability to comply with parental commands and to monitor and exert voluntary control over one's own behaviour accordingly (Kopp, 1982). Self-regulation, thus, represents a crucial step in the socialization of children. Kopp (1982) describes the emergence of early self-regulation during the toddler years. Between 12 to 18 months, infants become capable of "control", which involves the awareness of social demands, the ability to initiate, maintain, and terminate behaviour, and the capacity to comply with caregivers' requests. At 24 months, toddlers attain "self-control", which comprises the ability to delay on request and to begin to regulate behaviour, even in the absence of external requests. By 36 months, children start becoming capable of "self-regulation"; in other words, they begin to flexibly control themselves in accordance with changing contextual demands. Age and context are thus crucial determinants in the development of compliance during the preschool years. The main goal of the present study was to examine the effects of age and context on maternal request strategies and child compliance and noncompliance in a high-risk, intergenerational sample. Research on compliance and noncompliance with maternal requests during the preschool years is vital to the understanding of the development of early social competence. Given that extreme noncompliance is associated with later behaviour problems, it is especially crucial to examine these early indicators of social competence in a disadvantaged sample, where the likelihood of psychosocial problems is high (Boyle & Lipman, 2002; Patterson, DeBaryshe, & Ramsey, 1989).

Development of Compliance and Noncompliance

Normative trends in the development of compliance have been noted in the literature. Compliance to maternal requests is first observed between the ages of 9 and 12 months (Grunzeweig, DeGenna, Girouard, & Stack, 2003; Kaler & Kopp, 1990; Kopp, 1982). Provided that they comprehend what is being asked of them, between 12 and 18 months, infants show age-related increases in the frequency of compliance (Kaler & Kopp, 1990; Kochanska, Coy, & Murray, 2001; Kochanska, Tjebkes, & Forman, 1998). For example, Grunzeweig et al. (2003) longitudinally assessed compliance with maternal requests in a sample of high-risk mothers and their infants. The mothers were observed interacting with their children at 12 and 18 months, and compliance was measured during a puzzle task and a free play. Results showed that infants complied with 36% of mothers' requests at 12 months, relative to 47% at 18 months. After 18 months, as demonstrated by Vaughn, Kopp, and Krakow (1984), children's responses to maternal requests begin to change. In their study examining the emergence of self-control in 18- to 30-month olds, the authors observed toddlers' behaviour during a number of delay tasks, as well as a clean-up task. They found, as one might suspect, age-related increases in the frequency with which toddlers complied with maternal requests relating to specific tasks. However, results also revealed that as compliance behaviours increased, so did noncompliance behaviours (Vaughn et al., 1984).

Commonly referred to as the "terrible twos", toddlers' developing autonomy begins to surface during the second and third years of life (Crockenberg & Litman, 1990; Donovan, Leavitt, & Walsh, 2000). Armed with relatively sophisticated cognitive and language skills, children at this age are as likely to use these abilities to comply with

maternal requests, as they are not to comply (Vaughn et al., 1984). In moderation, noncompliant behaviour can be regarded as children's means of persuading their parents to drop or modify their requests. In light of this view, children's noncompliance behaviours are assumed to vary in their quality and skill (Kuczynski et al., 1987). This social skills interpretation of noncompliance suggests that the degree to which mothers experience noncompliance strategies as aversive determines their skilfulness or sophistication (Kuczynski & Kochanska, 1990). Noncompliant responses that are experienced as overtly offensive are identified as the least skilful, whereas noncompliant responses that express children's desires without explicitly provoking mothers are deemed most skilful.

Noncompliance first emerges in primitive forms, such as direct defiance and passive noncompliance. The former strategy can include yelling, crying, and generally angry affect, whereas the latter describes when a child simply ignores a maternal directive (Donovan et al., 2000; Kuczynski & Kochanska, 1990). Over time, as children learn to assert their autonomy, they acquire more sophisticated and skilful ways of doing so. Self-assertive strategies, which include simple refusal (both verbal and non-verbal), requesting explanations, and bargaining, reflect greater social competence (Donovan et al., 2000; Kuczynski & Kochanska, 1990). During the preschool years, the frequency with which children employ primitive noncompliance strategies decreases, while the occurrence of self-assertive strategies increases (Kuczynski & Kochanska, 1990; Power, McGrath, Hughes, & Manire, 1994).

Kuczynski et al. (1987) examined developmental changes in children's responses to maternal directives in children aged 15 to 44 months. Observations of the children

interacting with their mothers in a naturalistic apartment setting indicated that passive noncompliance and defiance decreased with the age of the child, while the more self-assertive strategies increased with age. More specifically, direct defiance, the most blatant form of resistance, decreased with age, and negotiation, the most sophisticated strategy, increased with age. A follow-up study showed that children's noncompliance strategies were relatively stable during the preschool years (Kuczynski & Kochanska, 1990). More specifically, toddlers who used simple refusal and negotiation (i.e. skilful forms of noncompliance) were more likely to use bargaining strategies at age five, relative to less sophisticated strategies such as passive noncompliance or defiance.

Compliance with Maternal Requests

While it is clear that child compliance and noncompliance behaviours change with development, the social-interactional context in which compliance and noncompliance typically occur must also be considered. As previously alluded, during the preschool years, the majority of the interactions in which children partake involve their mothers. Compliance and noncompliance are thus observed, by and large, in response to maternal requests. Maternal requests can be conceptualized as a subset of maternal control, and it is well documented in the literature that the quality and style of maternal control influences children's compliant and noncompliant behaviour (Dishion, Patterson, & Griesler, 1994; Williams & Forehand, 1984).

Based on a number of investigations of families with preschool-aged children, Baumrind (1989) identified three prototypical patterns of parental control, Authoritative, Authoritarian, and Permissive, which are associated with varying child characteristics. Authoritative parenting suggests a combination of high control along with positive

encouragement of children's autonomous and independent endeavours. Such parents tend to be controlling, demanding, warm, rational, and attuned to their children's communication. The children of Authoritative parents are commonly self-reliant, self-controlled, and explorative. These children are consistently more competent than children whose parents demonstrated different patterns of authority. Authoritarian parenting, the second pattern of authority, refers to a detached, controlling, and relatively less warm style of authority. Authoritarian parents often have children who are discontented, withdrawn, and distrustful. Finally, parents who exhibit a permissive pattern of authority are non-controlling, non-demanding, and relatively warm. Their children are the least self-reliant, explorative, and controlled, when compared to children reared with other parenting styles (Baumrind, 1989).

Similar to these patterns of parental authority, maternal request strategies vary in the degree to which they reflect the mother's wish to assert her power over her child (e.g., Crockenberg & Litman, 1990; Donovan et al., 2000; Kuczynski et al., 1987). Crockenberg and Litman (1990) postulated three categories of request strategies along a continuum of power-assertion. Low power-assertion strategies, sometimes referred to as "guidance" strategies, can include suggestions, explanations, and indirect requests. Moderate power-assertion, commonly called "control" strategies, denote clear directives about what the mother wants. These requests are typically in the imperative tense, e.g. "Brush your teeth!". High power-assertion strategies, sometimes called "negative control", can include criticism and physical intervention, and are often coupled with evidence of negative mood. Crockenberg and Litman (1990) assessed these strategies by observing mothers and their 2-year old children during two "clean-up" situations; one

took place in the laboratory and the other took place in the participants' homes. The authors found that maternal request strategies were associated with child compliance and noncompliance behaviours. In other words, their results revealed that negative control was associated with more defiance in laboratory and home settings, and was less likely to result in compliance than other strategies. Furthermore, (non-negative) control strategies predicted child compliance in the laboratory and at home, and guidance strategies predicted compliance only at home (Crockenberg & Litman, 1990).

Other researchers have attempted to demonstrate that control strategies are associated with varying degrees of autonomous behaviours in pre-schoolers. A study looking at 18- to 42-month old children found that direct defiance was positively related to direct control strategies (e.g. direct commands, enforcement). In contrast, negotiation (on the part of the child) was positively correlated with indirect control strategies and was negatively correlated with direct commands and reprimands (Kuczynski et al., 1987). Another study looking at 2-year-olds interacting with their mothers found that compliance was positively related to the lower power assertion strategies of guidance and control, and that self-assertion was associated with maternal guidance (Donovan et al., 2000).

Taken together, research suggests that maternal request strategies lower in power assertion are related to child compliance and more skilful noncompliance behaviours. However, as much as maternal directives influence child compliance and noncompliance, child behaviours also have the power to influence maternal requests. In the context of mother-child interactions, children are not passive recipients of external (i.e. maternal) forces (Kuczynski, 2003). Events that take place within these interactions must take into

account the bidirectional relationship between mothers and their children. Therefore, factors such as child age do not affect maternal or child behaviours separately, but rather they impact the interaction as a whole.

Returning to the developmental trajectories of child compliance and noncompliance with maternal requests (Kuczynski & Kochanska, 1990; Kuczynski et al., 1987), the strategies that mothers use to elicit compliance from their children are also thought to be associated with the developmental stage of the child. The relationship between maternal request strategies and child age are presumed to reflect maternal adaptations to developmental changes in children. For example, in Kuczynski et al.'s study (1987) examining at 18- to 42-month old children, they described a shift from physical to verbal modalities of maternal interventions, signifying parental adaptation to children's increasing capacity to understand verbal messages and subsequently regulate their own behaviour in response to maternal requests.

In addition to child age, another important factor affecting request-compliance exchanges involves the context in which the interaction takes place. Contexts vary in the demands that they place on mothers and children, which could in turn lead to different patterns of maternal request strategies and child compliance and noncompliance. A study examining compliance/noncompliance patterns in a sample of 18- to 30-month-olds showed that different situations elicited different behavioural responses (Schneider-Rosen & Wenz-Gross, 1990). Children participated with a parent in several activities, such as a clean-up task or interactive reading task. The results revealed that child responses to maternal requests varied as a function of situation. The authors interpreted this finding to mean that when demands for compliance are made, children's behavioural responses are

dependent on the situations in which the demands are made. Furthermore, the authors noted that the observed differences in compliance across situations were apparent across all age groups.

Other studies examining contextual effects on child compliance and noncompliance have shown that toddlers have greater difficulty complying with maternal directives in "do" contexts (i.e. "clean up the toys") rather than "don't" contexts (i.e. "don't touch the attractive stimulus") (e.g., Braungart-Rieker, Garwood, & Stifter, 1997; Kochanska & Aksan, 1995; Kochanska et al., 2001). Moreover, a study that observed 30 month-olds' compliance with maternal directives found that associations between maternal control strategies and child compliance and noncompliance did not generalize across "do" versus "don't" situations (Braungart-Rieker et al., 1997). Although mothers' control strategies were generally stable across situations, children's responses were differentially affected.

Context and child age are not the only factors known to influence request-compliance interactions. Various maternal characteristics, such as maternal education, mental illness, and other risk factors, have been shown to impact on maternal request strategies and child compliance and noncompliance. Crockenberg and Litman (1990) found that more educated mothers used more guidance in home and laboratory settings than less educated mothers. In the laboratory, educated mothers used less control and less negative control. A recent study explored compliance to maternal directives in a sample of 24- to 33-month-olds and their mothers (Houser, Schuetze, & Das-Eiden, 2003). A path analysis based on observations of maternal control strategies and child compliance during a "clean-up task" and a "prohibited shelf task" indicated that maternal depression

predicted maternal control strategies, which subsequently predicted child compliance. Child age was also found to predict child compliance (Houser et al., 2003). Finally, Oldershaw, Walters, and Hall (1986) found that children of abusive mothers were more compliant than the non-abused comparison group, and abusive mothers more often employed power-assertive strategies, while control mothers used more positively oriented (guidance) strategies.

Taken together, research has shown that child age, context, and maternal characteristics are three important variables affecting maternal request strategies and child compliance and noncompliance. While there exists an abundance of literature on the effects of age, there is a paucity of research investigating the influence of context on request-compliance exchanges. In particular, no studies have yet to explore the effects of naturalistic play contexts on these interactions. Given the importance of mother-child play during the preschool years, studying the impact of play context on maternal request strategies and child compliance and noncompliance marks an essential contribution to this body of literature. Furthermore, whereas the development of child compliance and noncompliance with maternal requests in typically-developing children is very well-documented, only a minority of studies have examined this development in specific at-risk populations, and no studies have yet to look at compliance and noncompliance in low socioeconomic neighbourhoods. This oversight is particularly noteworthy given the high rates of behaviour problems found in disadvantaged families.

Compliance, Noncompliance, and Trajectories of Aberrant Development

To recapitulate, there is substantial evidence to support the notion that maternal request strategies and child compliance and noncompliance with maternal requests are

central components of children's normal social development. However, in some children, development can go awry, causing normative autonomous behaviour to become excessive noncompliance. Extreme noncompliance during the preschool period has been associated with poor peer relationships, inferior academic performance, delinquency, and problems later in life (Patterson et al., 1989). An important research question involves determining the factors that predict the development of excessive noncompliance in early childhood. Qualities of the parent-child relationship, such as parents' socialization strategies, have been shown to contribute to, or intensify, the emergence of behaviour problems evidenced in preschoolers (Campbell, 1997). Individual differences in parenting may help to determine whether a child demonstrates normative noncompliance during the preschool years, or whether a child, unable to master this developmental transition between dependency and autonomy, exhibits problems that can be deemed pathological. For example, parents could respond to children's noncompliance by modeling socially appropriate responses, or they could exacerbate conflict and fuel noncompliance by responding in a coercive fashion (Campbell, 1997).

One means by which parenting could hinder a child's successful movement through this transitional period is by participating in coercive interactions, in which a parent (inadvertently) negatively reinforces a child's socially unacceptable behaviour (Dishion et al., 1994). More specifically, this process involves three steps. First, the parent makes a request that the child experiences as hostile. Next, the child's defiant response (e.g., yelling, whining) is experienced by the parent as hostile. If the parent subsequently withdraws the request, the child then learns that defiance is a successful method of escaping parental demands. In addition, the parent will likely give up their

demands more easily in the future. Coercive interactions are characterized by escalating patterns of responses. Both parents and children react to each other's responses with an increasing display of hostility and aggression. As a result, what begins as a minor disagreement may evolve into a major altercation. Coercive patterns such as this are thought to train the child to respond in an adverse manner in the future, both within parent-child interactions, as well as in other contexts (Dishion et al., 1994). Consequently, such children are likely to exhibit levels of noncompliance that are greater than those seen in typically developing preschoolers. Coercive interactions also train parents to use aversive and hostile techniques in the future. With experience, the parent may discover that rapidly increasing the intensity of negative control strategies may be a successful way of eliciting compliance. In the future, the parent will likely employ such intense techniques at an increasingly earlier phase of the interaction, and simple requests will have the potential to quickly escalate into intense, emotional, and possible aggressive interactions (Barkley, 1987).

Aggressive behaviour is considered to be a subset of coercive techniques used by family members to influence the behaviour of one another, and highly aggressive children are likely to employ these techniques (Patterson, 1982). Research supports the view that aggression is a stable trait; in other words, a propensity to react aversively across time and settings (e.g., Cairns, Cairns, Xie, Leung, & Hearne, 1998; Patterson, 1982; Patterson et al., 1989; Serbin et al., 1998) When highly aggressive girls grow up and raise families of their own, they are likely to continue to react aversively with their own children, thus perpetuating the coercive cycles. In so doing, their children are likely to be trained to respond in a similarly aversive manner in contexts outside the family

environment. As well, by partaking in risky behaviours, such as cigarette, drug, and alcohol use, these women may act in a manner that is physically and/or emotionally damaging to their children. Particularly for girls, aggressive behaviour may be a central ingredient in a complex, inter-generational social pattern, placing themselves as well as their children, at risk for maladaptive psychosocial outcomes (Serbin et al., in press; Serbin et al., 1998; Serbin, Stack, & Schwartzman, 2000).

Social withdrawal is another important factor that puts women, and their children, at risk for poor psychosocial outcomes. Although social withdrawal may be harder to detect than aggression, research has shown that social withdrawal is a similarly stable trait (Cooperman, 1996; Moskowitz, 1985). In contrast to how aggressive women put themselves and their children at risk by engaging in aggressive behaviours, the processes by which withdrawn women place themselves and their families at risk are somewhat different. Withdrawn women may remove themselves from social interactions, thus hindering the development of competent social skills and leading to dissatisfaction. This combination is likely to impinge on the quality of the mother-child relationship.

Finally, studies have shown that women who are identified as both highly aggressive and highly withdrawn, as well as their children, are at increased risk for maladaptive outcomes. These women have been found to be at elevated risk for teen parenthood, obstetric and delivery complications, and chronic disease, among other things (Serbin et al., in press; Serbin et al., 1998).

Taken together, the results suggest that women who are at psychosocial risk, because they are highly aggressive, highly withdrawn, or both, have a greater likelihood of arriving at maladaptive outcomes. The notion of an intergenerational transmission of

risk suggests that by examining the impact of mothers' developmental history on the prenatal and child-rearing environments provided to their children, the probability that these children will experience psychosocial, developmental, or health problems during their lives can be assessed (Chapman & Scott, 2001). In other words, the qualities and experiences of a parent can serve to explain how behavioural continuities arise across generations (Cairns et al., 1998). Studies on the intergenerational transfer of risk have tested processes that underlie intergenerational continuities in order to better understand the factors that increase the likelihood of problematic outcomes (Serbin & Stack, 1998). For example, a path analysis conducted by Serbin and colleagues (in press) examining the childhood and adolescent histories of 450 parents from a high-risk sample revealed that histories of aggression and social withdrawal were predictive of poverty, and that poverty, in addition to school failure/drop-out and early and/or single parenthood, served as significant threats to parenting. In a sample of aggressive and withdrawn women, the study of maternal request strategies and child compliance and noncompliance would provide another opportunity to examine the intergenerational transfer of risk. It would be advantageous to examine the impact of risk factors such as aggression and withdrawal on maternal request strategies, and on subsequent child compliance and noncompliance, in order to delineate possible pathways toward future risk (i.e. extreme noncompliance and behaviour problems) or, towards resilience (i.e. healthy social development).

Concordia Longitudinal Risk Project

The Concordia Longitudinal Risk Project (CLRP) offers the unique opportunity to study the intergenerational transmission of risk in a prospective, longitudinal design. The CLRP is a large, community-based sample of disadvantaged families. This ongoing study

began in 1976-78 (Ledingham, 1981; Schwartzman, Ledingham, & Serbin, 1985), when a sample of children from inner-city schools was identified as highly aggressive, socially withdrawn, or high on both dimensions. These original participants have now become parents, making it possible to study the transfer of risk or resilience to their offspring. Studies of mother-infant interactions based on these families have revealed that maternal childhood risk status can lead to problematic parenting and subsequent deviant behaviour patterns in offspring (e.g., Serbin et al., 1998). More specifically, in one study, the participants were observed interacting with their preschool offspring during a 15-minute free play session. Findings indicated that mothers who were identified in childhood as being both aggressive and socially withdrawn demonstrated higher levels of hostility when interacting with their children (Bentley, 1997, 2002). In another observational study during which mothers interacted with their school-aged children, maternal childhood aggression was predictive of child restlessness, and a trend was observed for the prediction of child aggression (Cooperman, 1996). In addition, in a study of 175 families of high-risk participants (Serbin et al., 2000), 30% of the offspring obtained IQ scores below 85, suggesting the presence of ongoing cognitive delays and future academic problems, and 11% ranked in the 95th percentile on the Child Behaviour Checklist, a measure of socio-emotional problems (Achenbach, 1991).

The Present Study

In summary, there is a lack of research examining the influences of play context and child age on mother-child interactions involving compliance and noncompliance with maternal requests. In particular, there is a strong need for research that explores these relationships in the context of a disadvantaged, high-risk sample. Studying maternal

request strategies and child compliance and noncompliance within the context of the Concordia Longitudinal Risk Project offers the unique opportunity to examine the intergenerational transfer of risk by exploring the effects of maternal childhood aggression and social withdrawal on maternal request strategies and subsequent child compliance and noncompliance. It is especially crucial to investigate these behaviours in preschool-aged children as those are the years during which social competence begins to take shape. The results of a study that would assess the relationships between all of the aforementioned factors have the potential to elucidate the pathways that might lead to maladaptive behaviour or healthy development. Furthermore, these results could have important implications for the planning of early interventions and parent training programs.

The current study was designed to address two main objectives. The first objective was to investigate the relationships among maternal requests, child compliance and noncompliance, play context, and child age. More specifically, the following research questions were addressed: (a) Do maternal requests vary according to request strategy, child age, and play context?; (b) Does child compliance vary according to maternal request strategy, child age, and play context?; and (c) Does child noncompliance vary according to maternal request strategy, child noncompliance strategy, child age, and play context? The second objective was to investigate the relationships among maternal childhood levels of aggression and withdrawal, maternal request strategies, and child compliance and noncompliance. The specific research questions that were addressed were: (a) Do maternal childhood levels of aggression and withdrawal contribute to the prediction of maternal requests?; (b) Do maternal childhood levels of aggression and

withdrawal and maternal request strategies contribute to the prediction of child compliance?; and (c) Do maternal childhood levels of aggression and withdrawal and maternal request strategies contribute to the prediction of child noncompliance strategies? These two objectives were explored in a sample of high-risk mothers and their preschool-aged children. Six main hypotheses were made with respect to the aforementioned objectives. The first three hypotheses pertain to the first objective, and hypotheses 4 through 6 pertain to the second objective.

Hypothesis 1. It was predicted that the rate and frequency of maternal requests would vary according to request strategy, play context, and child age. Specifically, mothers would make the most requests in the command task, followed by the puzzle task, and then the free play. In addition, mothers would use guidance and control requests more than physical intervention requests.

Hypothesis 2. It was expected that the frequency of child compliance with maternal requests would vary according to request strategy, play context, and child age. Specifically, it was predicted that older children would comply with maternal requests more frequently than younger children.

Hypothesis 3. It was anticipated that the frequency of noncompliant responses to maternal requests would vary according to request strategy, noncompliance strategy, play context, and child age. Specifically, it was expected that children would display passive noncompliance most, followed by self-assertion, and then defiance. In addition, it was predicted that older children would use more self-assertion and less passive noncompliance than younger children.

Hypothesis 4. It was expected that maternal childhood levels of aggression and withdrawal would contribute to the prediction of maternal requests. Specifically, mothers high on aggression and withdrawal would employ more negative requests, i.e. physical interventions and no opportunity requests.

Hypothesis 5. It was anticipated that maternal childhood levels of aggression and withdrawal and maternal request strategies would contribute to the prediction of child compliance with maternal requests. More specifically, low levels of aggression and withdrawal would predict high levels of compliance with maternal requests.

Hypothesis 6. It was expected that maternal childhood levels of aggression and withdrawal and maternal request strategies would contribute to the prediction of non-compliant responses to maternal requests. More specifically, high levels of aggression and high levels of negative request strategies would predict high levels of defiance.

These hypotheses are summarized in Figure 1. As illustrated, the effects of maternal childhood risk status, child age, and play context act together to influence maternal request strategies and child compliance and compliance. In addition, these latter maternal and child behaviours serve to affect each other.

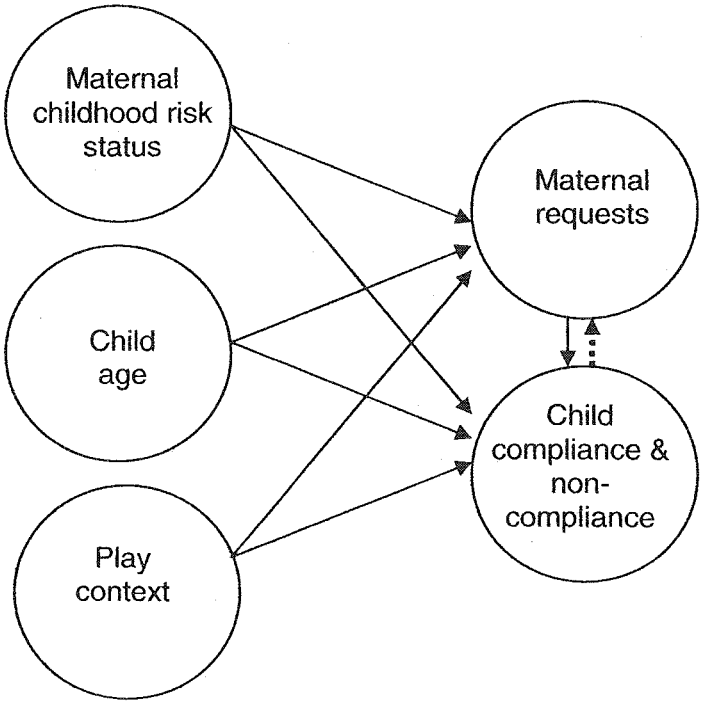

Figure 1. Hypothesized relationships among play context, child age, maternal childhood characteristics, maternal request strategies, and child compliance and noncompliance.

Note: While the author acknowledges the influence of child compliance and noncompliance on maternal requests, this relationship is not a focus of the current study.

Method

Participants

The mothers who participated in this study were selected from a pool of 1774 individuals (864 males, 910 females) who comprised the Concordia Longitudinal Risk Project. This project originated in 1977, when 4109 students in grades 1, 4, and 7 were recruited from a community sample attending French language public schools in inner-city, low socio-economic neighbourhoods in Montreal (Ledingham, 1981; Schwartzman et al., 1985). These children were screened for aggression and social withdrawal by means of a French translation of the Pupil Evaluation Inventory (Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976), a peer-nomination technique that compares children to their classmates. Appendix A presents sample items from this instrument. Based on their PEI scores, the children were assigned to one of three risk groups (aggressive, withdrawn, and aggressive-withdrawn); a normative comparison group of children from the same schools and neighbourhoods was also identified. Appendix B summarizes the screening method employed.

Seventy-four mothers from the Concordia Longitudinal Risk Project participated with their children in the current study. This group was selected from a sample of 114 mother-child dyads who were recruited to participate in a larger study on parent-child relationships. The 74 mothers included in the present study all had children between the ages of 2 and 6 years at the time of data collection. It was important to obtain a wide age range because it is during these years that the developmental trajectories of compliance and noncompliance with maternal requests can be observed.

Based on the women's original risk classifications, the sample was drawn from the four groups as follows: aggressive (n = 12), withdrawn (n = 15), aggressive-withdrawn (n = 13), and control (n = 34). For purposes of the present study, mothers' childhood aggression and withdrawal scores were treated as dimensions. This approach has been the preferred choice in past research on the CLRP (e.g., Bentley, 2002; Cooperman, 1996; De Genna, 2001), and it has provided informative results. A test of skewness revealed that the aggression and withdrawal z-scores in the current sample followed a normal distribution.

The children in the current sample (34 boys, 40 girls) ranged in age from 2.00 to 6.06 years (M = 4.03, SD = 1.21). The age of the mothers at the birth of their first child ranged from 17.43 to 32.38 years (M = 24.58, SD = 3.36). At the time of testing, mothers' ages ranged from 25.71 to 34.52 years (M = 30.65, SD = 2.57). Fifty-five women were married or living with a common-law partner, and 19 were single mothers, including those who were separated, divorced, or widowed. With respect to their education, the mothers had between 6 and 17 years of schooling (M = 11.26, SD = 2.22). Mothers' occupational prestige ratings ranged from 184.00 to 656.00 (M = 314.76, SD = 97.26), assessed by the Prestige measure (Rossi, Sampson, Bose, Jasso, & Passel, 1974). The mean prestige rating corresponds to the following types of jobs: filing clerk, cashier, and repairman (Nock & Rossi, 1979).

In order to ensure that mothers and children from the risk groups were similar to mothers and children from the comparison group, the following important socio-demographic variables were compared: mothers' education, occupational prestige rating, and age at the birth of their first child, as well as mothers' and children's age at the time

of testing. The means and *t* values can be found in Table 1. The results indicated no significant differences between the groups on any of these variables, except for mothers' education. More specifically, mothers in the comparison group ($M = 11.88$, $SD = 2.38$) acquired on average 1.16 more years of education than mothers in the risk group ($M = 10.73$, $SD = 1.95$), $t(72) = -2.30$, $p = .02$ (two-tailed).

As mentioned, the 74 mothers in the current study form a subsample of a larger study on parent-child relationships, which includes 114 mother-child dyads. These 114 mothers are among 304 women in the Concordia Longitudinal Risk Project who, at the time of testing, had given birth to children since the onset of the study in 1976. A comparison of the 74 mothers in the current study with the 114 mothers in the larger project was conducted in order to establish their representativeness. Using *z*-tests, the women were compared along the dimensions of aggression and withdrawal, in addition to years of education, occupational prestige ratings, and age at the birth of their first child and at testing. The results of these comparisons, which are displayed in Table 2, indicate that there were no significant differences between the samples on any of these variables. It is important to note that, with respect to these variables, the 114 women are comparable to the 304 mothers in the Concordia Longitudinal Risk Project (Serbin et al., 2000).

Procedure

Participants were contacted by telephone in order to arrange appointments for two home visits. Mothers were given a general description of the study and its procedures. At this time, the Demographic Information Questionnaire was completed (DIQ; see

Table 1

Comparison of Demographic Variables between Mothers from the Risk Groups and Mothers from the Comparison Group: Means, Standard Deviations, and t-values

	Risk mothers (N = 40)		Comparison mothers (N = 34)		
Demographic variable	*M*	*SD*	*M*	*SD*	*t*-value
Child age	4.06	1.28	3.99	1.13	0.27
Maternal age at testing	30.59	2.50	30.73	2.69	-0.24
Maternal age at birth of first child	24.17	3.71	25.06	2.85	-1.15
Maternal education (years)	10.73	1.95	11.88	2.38	-2.30*
Prestige rating	301.25	77.08	330.65	115.86	-1.26

* $p < .05$

Table 2

Comparison of Demographic Variables between Mothers from the Current Study and Mothers from the Larger CLRP Sample: Means, Standard Deviations, and z-scores

	Current sample (N = 74)		Larger sample (N = 114)		
Demographic variable	*M*	*SD*	*M*	*SD*	*z*-score
Maternal age at testing	30.65	2.57	30.41	2.58	0.80
Maternal age at birth of first child	24.58	3.35	24.60	3.23	-0.05
Maternal childhood aggression	0.39	1.13	0.38	1.06	0.08
Maternal chidhood withdrawal	0.54	1.00	0.45	0.98	0.79
Maternal education (years)	11.26	2.22	11.65	2.33	-1.44
Prestige rating	314.76	97.26	328.00	110.00	-1.04

Appendix C), and mothers were informed that they would be paid $80 upon completion of all of the visits and questionnaires.

This study was part of a larger research project consisting of several interviews and naturalistic observations taking place over two home visits. In addition, mothers were asked to complete several questionnaires during, and between, the two home visits. (For a complete protocol, please see Appendix D.) Each visit lasted approximately 3 hours, and was carried out by one experimenter (M.A. level mental heath professional) and one research assistant/graduate student, both of whom were blind to the mothers' childhood risk status. At the beginning of each appointment, the experimenter explained the overall procedure to the mother, who was then asked to read and sign an informed consent form (Appendix E).

During each visit, mothers and their children were asked to play on a mat, which was placed on the floor of a room in their home. Toys (a tea-set, a telephone, a doll, three books, and some blocks) were laid out on the mat according to a standardized arrangement. Mother-child interactions were videotaped using a Sony Video 8AF camera that was fixed on a tripod, and had a directional microphone attached to it. A stopwatch was used to time all interactions.

Although several naturalistic mother-child interactions took place over the course of the two home visits, the current study focused on three sessions: a 4- or 7-minute puzzle task (for children aged 24 to 42 months and 43 to 72 months, respectively), a 4-minute free play, and a 3-minute command task. These sessions were selected in order to be able to examine maternal request strategies and child compliance and noncompliance across a variety of contexts, each representing different underlying task demands. For the

puzzle task, mothers were instructed to choose one of the age-appropriate puzzles provided to work on with their children, and if they finished one puzzle, they should choose another to work on. With respect to the free play, mothers were instructed to play with their children as they normally would until they heard a timer sound. At this point, they were told to stop what they were doing in order to carry out the command interaction. For this interaction, mothers were instructed to ask their children to complete several tasks. Mothers were given a list of commands as examples (please see Appendix F), and were asked to use at least four of the suggested tasks during the span of the 3-minute interaction. Mothers were asked to remain with their child on the mat throughout the interactions. All instructions and all interactions took place in French.

After each play interaction, mothers were asked to rate, on a scale from 1 to 4, how natural they believed their interaction with their child had been (1 = not at all natural, 4 = very natural). If an interaction was rated as less than or equal to 2, the play session was videotaped again. Upon completion of the protocol, a feedback session took place to discuss the participants' experiences of the testing procedure, and to answer any questions that the mothers may have had.

Measures

Demographics. The Demographic Information Questionnaire was used to gather socio-demographic information about the participating families, such as mother's current age, age at birth of first child, marital status, number of years of education, occupational status, etc. Typically, this measure was completed over the telephone at the time that the first home visit was being scheduled. The Demographic Information Questionnaire has

been used in past studies based on the Concordia Longitudinal Risk Project, and has been shown to be an effective measure of participant demographics (e.g., Cooperman, 1996).

Request/Compliance Coding Scheme. The Request/Compliance Coding Scheme (RCCS) was used to code the behaviours of the mothers and their children during the puzzle task, the free play, and the command task. This observational measure of maternal request strategies and child compliance and noncompliance behaviours was developed by the author for the purposes of this study, based in part on the existing literature (e.g., Crockenberg & Litman, 1990; Donovan et al., 2000; Kuczynski & Kochanska, 1990). Since the association between maternal requests and child compliance and noncompliance is bi-directional, the objective of this relational coding system was to capture the sequential quality of the mother-child interaction. The RCCS attempts to describe the essential features of an exchange in which a mother solicits her child's compliance with a given request.

The first step in the development of the RCCS involved a process whereby categories of maternal request strategies and child compliance and noncompliance behaviours were identified. This process, which took place over several months, consisted of repeatedly viewing mother-child interactions across a variety of ages, and in all three play contexts. During these, and subsequent observations, the coder was blind to group membership. Existing categories of request strategies and compliance and noncompliance behaviours acknowledged in the literature served as guidelines in identifying the classifications (e.g., Donovan et al., 2000).

A preliminary coding sheet was drafted and underwent numerous revisions as the scheme was developed. The coding scheme was developed systematically until the

number of request, compliance, and noncompliance categories required to comprehensively describe the exchanges was determined, and the definitions of the categories were operationalized.

The RCCS requires that the coder examine each utterance spoken by the mother and decide whether or not it is a request. If the utterance is a request, it must be coded for its status (i.e. initial or repeated request) and for its strategy (i.e. negotiation, guidance, control, physical intervention). Following each request, the child's behaviour must be coded as compliance or noncompliance. If the behaviour is noncompliant, the type of noncompliance strategy employed must be coded (i.e. self-assertion, passive noncompliance, defiance). If the child's behaviour does not fall into one of these categories, it may be coded as "no opportunity", "in progress", or "no code". All of the maternal and child codes are mutually exclusive. The complete coding scheme manual can be found in Appendix G.

Observational Coding

Each set of interactions had a time line (which indicated hours, minutes, seconds, and frames per second) edited onto the 8 mm videotape. The start and stop times for each interaction were recorded in order to calculate the exact duration of the session in minutes, rounded to the nearest hundredth. The behaviours of the mothers and their children during each of the three play contexts in which they interacted were then coded using the RCCS.

Reliability. An undergraduate research assistant, who was blind to the study's hypotheses as well as group membership, acted as a secondary coder. In order to assess inter-rater reliability, 22% of the sample (i.e. 16 participants with 3 interactions each, for

a total of 48 interactions) was randomly selected and double-coded. Reliability was calculated on five measures, which will be described in turn: (1) presence of request, (2) time of request, (3) request status, (4) request strategy, and (5) child behaviour. The first measure indicated that 90% of the requests that were coded by the first coder were also coded by the secondary coder. The second measure ensured that 95% of the time, the coders agreed on the times of the requests within a 0.5-second interval. Cohen's kappa coefficients were calculated to assess the reliability of the final three measures. This procedure tabulates the actual inter-rater agreement as a proportion of potential agreement following a correction for chance agreement (Kaplan & Saccuzzo, 2001). The values obtained were as follows: $r_k = 0.76$ (request status), $r_k = 0.87$ (request strategy), and $r_k = 0.65$ (child behaviour). These kappa coefficients can be described as ranging from satisfactory to excellent, according to Cohen (1960). Percentage agreement reliability (agreements divided by total agreements plus disagreements) was also calculated for these three measures, and the values obtained were 90%, 94%, and 75%, for request status, request strategy, and child behaviour, respectively. These results are consistent with the reliability coefficients cited in the literature on maternal request strategies and child compliance and noncompliance. For example, Kuczynski and Kochanska (1990) reported kappas ranging from .67 to .91, and Crockenberg and Litman (1990) and Donovan et al. (2000) reported percentage agreement values ranging from 75% to 98%, and 67% to 100%, respectively.

Data Reduction. After the RCCS was employed to code the mother-child dyads interacting in the three play contexts, three of the measures were altered in that within that particular class of behaviour, two types of behaviour were combined. More

specifically, request status was reduced from three to two components (i.e. "contingent repetition" and "non-contingent repetition" were combined to form "repetition"). In addition, request strategy was reduced from four to three components (i.e. "negotiation" and "guidance" were combined to form "guidance"). Lastly, child behaviour was reduced from seven elements to six (i.e. "compliance" and "in progress" were collapsed into one type of behaviour: "compliance").

Next, the coding sheets were reviewed, and the request-compliance sequences that took place were recorded. In order to do this, a list was made of all possible combinations of request status, request strategy, and child behaviour (e.g., initial-guidance-compliance, or repeat-control-defiance). A total of 36 sequence combinations were obtained, i.e. request status x request strategy x child behaviour (2 x 3 x 6). Next, for each dyad, during each context, the frequency of each sequence was recorded. Afterwards, some of the frequencies were summed to obtain aggregate frequencies, such as the frequency of guidance requests. All of the frequencies were then converted to proportions. For example, the rate of maternal requests per minute was obtained by dividing the number of requests made during one play context by the duration of that play context in minutes. The percentage of repeated requests was calculated by dividing the number of requests labelled as "repeats" by the total number of maternal requests. The percentage of maternal requests using each of the strategies was determined by dividing the number of requests using a given strategy by the total number of maternal requests. The child's rate of compliance was attained by dividing the number of requests with which the child complied by the total number of "compliable" requests. The number of "compliable" requests was found by subtracting the number of requests with which the child could

feasibly not comply (i.e. "no opportunity" or "no code") from the total number of maternal requests. The rate at which the child used the various noncompliance strategies was calculated in a manner similar to that of the rate of compliance.

Table 3 includes the means and standard deviations for the maternal and child behaviours in each of the three play contexts: rate of maternal requesting, frequencies of guidance, control, and physical request strategies, frequency of child compliance with maternal requests, and frequencies of child noncompliant responses to maternal requests (i.e. self-assertion, passive noncompliance, and defiance). Notably, the mean rate of maternal requesting was found to be 5.21 (SD = 3.17), 2.80 (SD = 2.06), and 9.00 (SD = 3.4) requests per minute for the puzzle task, free play, and command tasks, respectively. Children's mean frequencies of compliance with maternal requests (as defined as the proportion of requests with which compliance was feasible) during these three contexts were 78.6% (SD = 14.9%), 61.7% (SD = 29.8%), and 55.9% (SD = 21.8%), respectively.

Table 3

Means and Standard Deviations of Maternal Request Strategies and Child Compliance and Noncompliance

	Puzzle task		Free play		Command task	
Behaviour	*M*	*SD*	*M*	*SD*	*M*	*SD*
Maternal						
Requests per minute	5.21	3.17	2.80	2.06	9.00	3.41
Guidance requests	0.31	0.19	0.34	0.26	0.31	0.18
Control requests	0.67	0.19	0.60	0.27	0.65	0.18
Physical interventions	0.03	0.05	0.04	0.11	0.04	0.06
Child						
Compliance	0.79	0.15	0.62	0.30	0.56	0.22
Self-assertion	0.28	0.32	0.38	0.36	0.39	0.26
Passive noncompliance	0.59	0.38	0.38	0.36	0.58	0.25
Defiance	0.02	0.08	0.02	0.09	0.03	0.08

Results

Prior to the commencement of data analysis, descriptive statistics were conducted on each variable that was to be analyzed in order to identify missing values and assess the normality of the distribution. There were no missing values, however, several scores were significantly skewed. Because these variables, which represent behaviours that tend to be infrequent in the natural environment, were skewed in the anticipated direction, it was elected not to transform them.

Statistical analyses were conducted using the Statistical Package for the Social Sciences for Windows (SPSS, version 11.0). The critical alpha level of $p < .05$ was used as the criterion for all analyses, however, results significant at $p < .10$ were also reported for some analyses, if they were deemed relevant to the hypotheses of the study and were consistent with the literature. It is important to note that these trends were interpreted with caution.

In order to address the research questions pertaining to the effects of play context and child age on maternal request strategies and child compliance and noncompliance, split-plot analyses of variance (ANOVA) were used to analyze the data. Hierarchical multiple regression was employed in order to investigate the relationships between maternal childhood risk status, maternal request strategies, and child compliance and noncompliance. Only significant effects are reported in the text; non-significant results can be found in appendixes. The results of the ANOVAs are presented first, followed by the regression analyses.

Effects of Child Age and Play Context on Maternal Request Strategies and Child Compliance and Noncompliance

For the purposes of the following analyses, the children in the sample were divided into two age groups: young preschoolers (less than 4.00 years of age, $N = 39$) and old preschoolers (greater than or equal to 4.00 years of age, $N = 35$). The groups were divided as such so as to capture the developmental changes in compliance and noncompliance with maternal requests. Prior to age four, children are expected to demonstrate changes in their capacity for compliance; however, after age four, compliance is expected to remain relatively stable (Kopp, 1982; Kuczynski & Kochanska, 1990; Vaughn et al., 1984). In contrast, after the age of four, children are expected to exhibit marked changes in their noncompliant responses; specifically, as the use of passive noncompliance decreases, self-assertive responses are expected to increase (Kuczynski & Kochanska, 1990).

In general, the design was a split-plot factorial ANOVA with Play Context (puzzle task, free play, command task) as a within-subjects variable and Child Age and Gender as between-groups variables. Depending on the particular analysis, in addition to these variables, other within-subjects variables were added; namely Request Strategy (guidance, control, physical intervention) and Noncompliance Strategy (self-assertion, passive noncompliance, defiance). The dependent variables analyzed included the rate of maternal requests (measured in requests per minute, RPM); the frequency of maternal requests; the frequency of maternal repeated requests; the frequency of child compliance with maternal requests; and the frequency of noncompliant responses to maternal requests.

In each of the following ANOVAs, due to the fact that the assumption of sphericity was violated, the more conservative Greenhouse-Geisser Epsilon Adjusted *F* was employed. Bonferroni corrections were performed to adjust for multiple comparisons. When ANOVAs revealed significant main effects or interactions, pairwise comparisons were used to follow up the main effects and simple effects analyses were used to isolate the source of the interactions. When main effects *and* significant interactions were found, only the interactions were reported in the text. All of the ANOVA tables are summarized in Appendix H.

Maternal Requests

The first set of ANOVAs were conducted in order to examine the effects of maternal request strategy, play context, and child age and gender on maternal requests. Three separate ANOVAs were conducted where the dependent variables under investigation were the rate and frequency of maternal requests, and the frequency of maternal repeated requests.

Rate of maternal requests. In order to determine whether the rate of maternal requesting, as measured by the number of maternal requests made per minute (RPM), varied according to play context, child age, or child gender, a 3 x (2 x 2) split-plot ANOVA was conducted with Play context (puzzle task, free play, command task) as the within-participants factor, and Age group (young vs. old preschoolers) and Gender as the between-participants factors.

Main effects of Play Context ($F(1.82, 127.23) = 121.39$, $p < .0001$) and Age ($F(1, 70) = 9.34$, $p < .003$) were revealed. Pairwise comparisons showed that the rate of maternal requesting was different during each of the play contexts. More specifically,

mothers made the most requests during the command task (M = 8.98 RPM), followed by the puzzle task (M = 5.19 RPM), and then by the free play (M = 2.77 RPM). In addition, mothers made significantly more requests of younger children (M = 6.37 RPM) than older children (M = 4.92 RPM).

Frequency of maternal requests. In order to determine whether the frequency of requests issued by mothers varied according to child age, child gender, play context, or request strategy, the frequency of maternal requests was analyzed using a (3 x 3) x (2 x 2) split-plot ANOVA with Play context (puzzle task, free play, command task) and maternal Request Strategies (guidance, control, physical intervention) as the within-participants factors, and Age group (young vs. old preschoolers) and Gender as the between-participants factors.

A main effect of Request Strategy ($F(1.21, 84.52) = 353.96$, $p < .0001$) was found. Pairwise comparisons were conducted and they revealed significant differences between all three types of maternal request strategies employed ($p < .0001$). More specifically, mothers employed control strategies most (M = .64), followed by guidance strategies (M = .32), and then by physical intervention strategies (M = .04).

Frequency of maternal repeated requests. In order to determine whether the repeated requests issued by mothers varied according to child age, child gender, play context, or request strategy, the frequency of repeated requests was analyzed using a (3 x 3) x (2 x 2) split-plot ANOVA with play context (puzzle task, free play, command task) and maternal request strategies (guidance, control, physical intervention) as the within-participants factors, and age group (young vs. old preschoolers) and gender as the between-participants factors.

A Play Context by Request Strategy interaction was revealed ($F(2.86, 199.92) = 8.25, p < .0001$). As illustrated in Figure 2, during the puzzle and command tasks, the frequency of repetitions was different across all of the strategies ($p < .0001$). Mothers were most likely to use control strategies ($M = .15$ for the puzzle task, .23 for the command task), followed by guidance strategies ($M = .06$ for the puzzle task, .11 for the command task), and then physical interventions ($M = .007$ for the puzzle task, .02 for the command task) during the puzzle and command tasks. During the free play, there were significantly less repeated physical requests ($M = .01$) than repeated guidance ($M = .07, p < .002$) or control requests ($M = .11, p < .0001$). The frequency of repeated guidance requests did not differ from that of repeated control requests.

Child Compliance with Maternal Requests

In order to determine whether the frequency of child compliance with maternal requests varied according to maternal request strategies, play context, child age, or child gender, a (2 x 3) x (2 x 2) split-plot ANOVA was conducted. Maternal request strategies (guidance, control) and play context (puzzle task, free play, command task) were the within-participants factors, and child age (young vs. old preschoolers) and gender were the between-participants factors. Since the rules of the coding scheme prohibited coding a compliant response following a physical intervention request, these requests were omitted from this analysis.

A significant main effect of Request Strategy was revealed ($F(1, 70) = 58.14, p < .0001$), indicating that children complied with control requests ($M = .42$) more frequently than with guidance requests ($M = .23$).

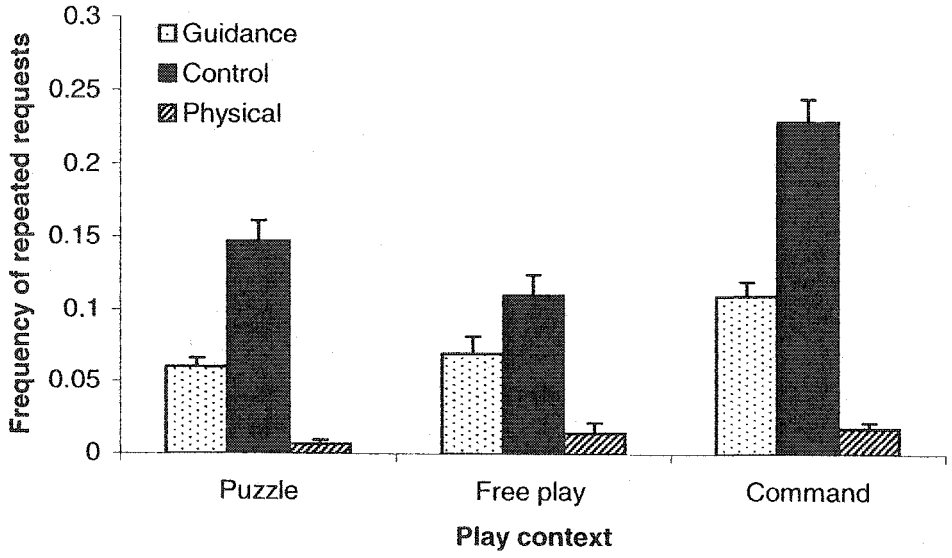

Figure 2. Frequency of Repeated Maternal Requests as a Function of Request Strategy and Play Context

A main effect of Play Context was also revealed ($F(1.58, 110.79) = 19.82$, $p <$ .0001). Pairwise comparisons showed that the frequency of compliance during the puzzle task differed from those of the free play and command task ($p < .0001$), but that the frequencies of compliance during the free play and command task did not differ ($p <$ .503). Children's frequencies of compliance were highest during the puzzle task ($M =$ .39), when compared to the free play ($M = .31$) or command task ($M = .28$).

Finally, trends for Age ($F(1, 70) = 2.80$, $p < .099$) and Gender ($F(1, 70) = 2.79$, p < .10) were found. Older preschoolers ($M = .34$) complied with maternal requests more often than did younger preschoolers ($M = .31$), and girls ($M = .34$) complied more often than did boys ($M = .31$).

Child Noncompliant Responses to Maternal Requests

In order to examine the effects of request strategy, noncompliance strategy, play context, and child age and gender on noncompliant responses to maternal requests, the frequency of noncompliant responses to maternal requests was analyzed using a (3 x 3 x 3) x (2 x 2) split-plot ANOVA. Maternal request strategy (guidance, control, physical intervention), child noncompliance strategy (self-assertion, passive noncompliance, or defiance), and play context (puzzle task, free play, command task) were the within-participants factors, and child age (young vs. old preschoolers) and gender were the between-participants factors.

The interaction of Request Strategy and Play Context ($F(2.31, 161.62) = 9.48$, $p <$ .0001) revealed that the frequencies of noncompliance following various request strategies varied according to context. As illustrated in Figure 3, during the puzzle task and the free play, the frequencies of noncompliant responses to guidance requests ($M =$

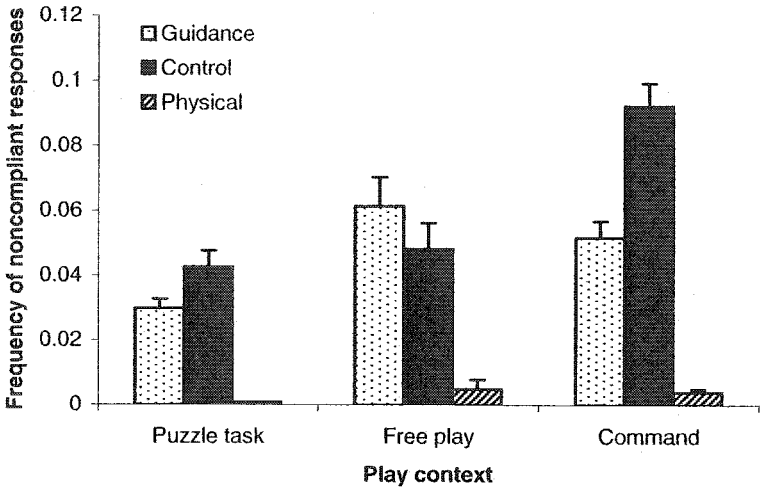

Figure 3. Frequency of Noncompliant Responses to Maternal Requests as a Function of Maternal Request Strategy and Play Context

.03 for the puzzle task; .06 for the free play) and control requests (M = .04 for the puzzle task; .05 for the free play) differed from that of physical requests (M = .0008 for the puzzle task; .005 for the free play; $p < .0001$). There were no significant differences between the frequencies of noncompliant responses to guidance requests compared to that of control requests. During the command task, significant differences were observed between the frequencies of noncompliant responses to all three types of requests ($p <$ .0001). Children displayed noncompliant responses to control requests most (M = .09), followed by guidance requests (M = .05), and then by physical requests (M = .004).

The interaction of Noncompliance Strategy and Age ($F(1.64, 2.31) = 6.14$, $p <$ .005) revealed that the frequency with which children employed the various noncompliance strategies varied according to age. As illustrated in Figure 4, young and old preschoolers differed significantly with respect to the frequency of passive noncompliance ($p < .008$), but not with respect to the frequencies of self-assertion or defiance. Younger preschoolers showed passive noncompliance (M = .07) more than self-assertion (M = .04), which they showed more than defiance (M = .005). In contrast, older preschoolers displayed passive noncompliance (M = .05) as often as self-assertion (M = .05), both of which they displayed more often than defiance (M = .003). Moreover, younger children exhibited passive noncompliance (M = .07) more often than did older children (M = .05).

The interaction of Noncompliance Strategy and Play Context ($F(2.79, 195.03) =$ 8.9, $p < .0001$) showed that the frequency with which children employed noncompliance strategies varied according to play context. As depicted in Figure 5, during the puzzle and command tasks, the frequency of self-assertion differed significantly from that of passive

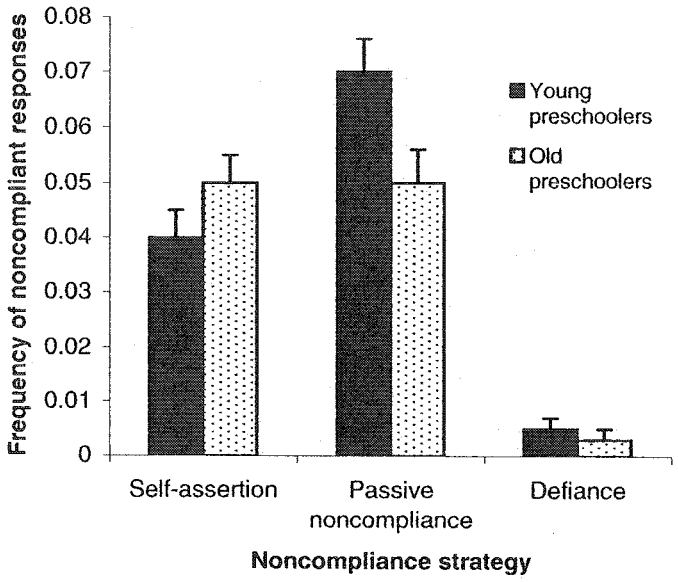

Figure 4. Frequency of Noncompliant Responses to Maternal Requests as a Function of Child Age and Noncompliance Strategy

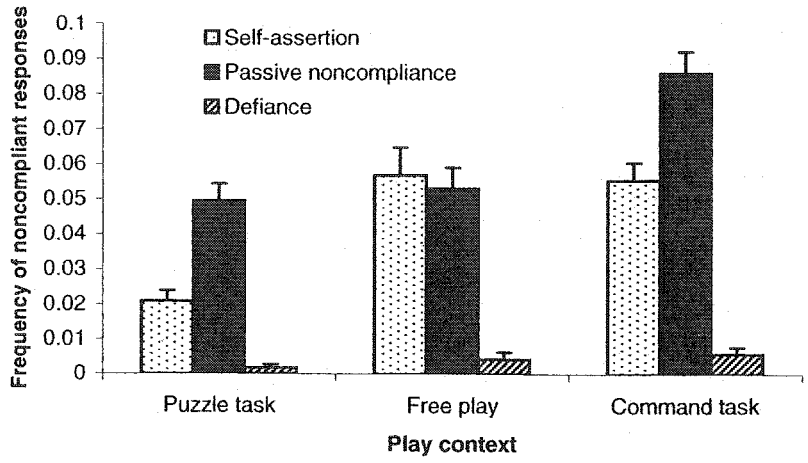

Figure 5. Frequency of Noncompliant Responses to Maternal Requests as a Function of Noncompliance Strategy and Play Context

noncompliance ($p < .0001$ during the puzzle task; $p < .002$ during the command task), and the frequency of defiance differed from those of self-assertion and passive noncompliance ($p < .0001$). The children demonstrated passive noncompliance most frequently ($M = .05$ for the puzzle task; .09 for the command task), followed by self-assertion ($M = .02$ for the puzzle task; .06 for the command task), and then by defiance ($M = .002$ for the puzzle task; .006 for the command task). In contrast, during the free play, the frequencies of self-assertion ($M = .06$) and passive noncompliance ($M = .05$) did not differ, however they were significantly greater than that of defiance ($M = .004$; $p < .0001$).

The interaction of Request Strategy and Noncompliance Strategy ($F(2.99, 209.57) = 9.48$, $p < .0001$) indicated that the frequency with which children employed the various noncompliance strategies varied according to mothers' request strategies. As illustrated in Figure 6, in response to guidance requests, there were significant differences between the frequencies of defiance ($M = .002$) and self-assertion ($M = .07$; $p < .0001$), and defiance and passive noncompliance ($M = .07$; $p < .0001$). In response to control requests, significant differences were observed between all of the noncompliance strategies ($p < .0001$). Control requests most often elicited passive noncompliance ($M = .12$), followed by self-assertion ($M = .06$), and then by defiance ($M = .004$). There were no observed differences in noncompliance strategy in response to physical requests ($M = .003$ for self-assertion, .002 for passive noncompliance, .005 for defiance).

The interaction of Request Strategy and Noncompliance Strategy and Age ($F(2.99, 209.57) = 3.66$, $p < .013$) revealed that the frequency with which children exhibited various noncompliance strategies differed according to the request strategy employed by

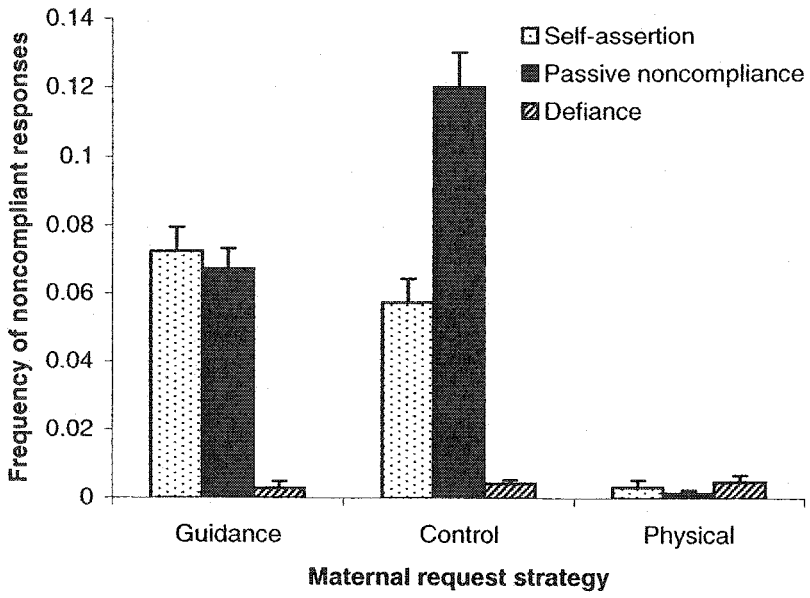

Figure 6. Frequency of Noncompliant Responses to Maternal Requests as a Function of Noncompliance Strategy and Maternal Request Strategy

the mothers, and also according to the age of the child. As depicted in Figure 7a, young and old children did not differ in their responses to guidance requests. For children of all ages, there were no observed differences between self-assertion (M = .06 for young children; .08 for old children) and passive noncompliance (M = .08 for young children; .06 for old children), and the frequency of defiance was observed to be significantly different from the other two noncompliance strategies ($p < .0001$; M = .002 for young children; .004 for old children). In response to control requests (Figure 7b), for young children, the three noncompliance strategies all differed from each other in frequency ($p < .0001$). Younger children were most likely to react to control requests with passive noncompliance (M = .14), followed by self-assertion (M = .05), and then by defiance (M = .005). For older children, there were no observed differences between passive noncompliance and self-assertion, while the frequency of defiance was observed to be significantly different from the other two noncompliance strategies (M = .10 for passive noncompliance; .07 for self-assertion; .003 for defiance; $p < .0001$). In response to physical requests (Figure 7c), for young children, the frequency of passive noncompliance differed from that of defiance ($p < .042$), but the other strategies did not differ from each other. For young preschoolers, physical interventions are most likely to elicit defiance (M = .009), followed by self-assertion (M = .006), and then by passive noncompliance (M = .001). For older children, in response to physical requests, there were no observed differences at all in the frequency of the noncompliance strategies (M = .002 for passive noncompliance; .0002 for self-assertion; .0009 for defiance).

Finally, the interaction of Request Strategy and Noncompliance Strategy and Play Context ($F(3.95, 276.14) = 3.82$, $p < .005$) demonstrated that the frequency with which

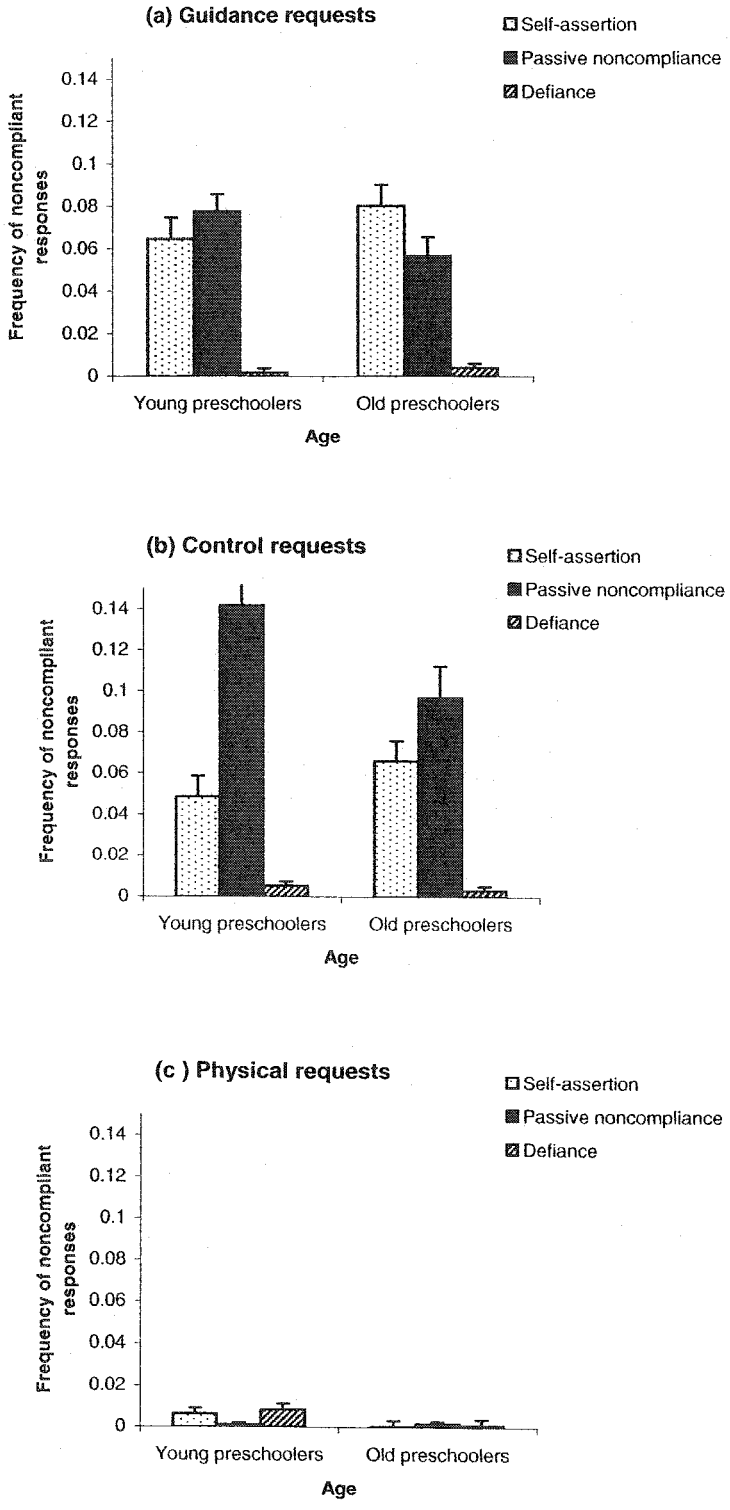

Figure 7. Frequency of Noncompliant Responses to Maternal (a) Guidance, (b) Control, and (c) Physical Requests, as a Function of Noncompliance Strategy and Child Age

children exhibited various noncompliance strategies differed according to the request strategy employed by the mothers, and according to context. As illustrated in Figures 8a and 8c, during the puzzle task as well as the command task, there were no observed differences in the likelihood of guidance requests eliciting passive noncompliance (M = .05 for puzzle; .08 for command) or self-assertion (M = .04 for puzzle; .07 for command. Guidance requests were least likely to elicit defiance (M = .002 for puzzle; .003 for command; p <.0001). In response to control requests, the frequencies of the three noncompliance strategies significantly differed from one another (p < .0001). Control requests were most likely to elicit passive noncompliance (M = .10 for puzzle; .18 for command), followed by self-assertion (M = .02 for puzzle; .09 for command), and then by defiance (M = .003 for puzzle; .009 for command). There were no observed differences in the likelihood of physical intervention requests eliciting either self-assertion (M = .001 for puzzle; .001 for command), passive noncompliance (M = .0003 for puzzle; .004 for command), or defiance (M = .0009 for puzzle; .006 for command). During the free play, as depicted in Figure 8b, in response to guidance and control requests, the frequency of defiance (M = .004 for guidance; .001 for control) was observed to be significantly different from self-assertion (p < .003) and from passive noncompliance (p < .0001). There were no differences in the likelihood of guidance or control requests eliciting passive noncompliance (M = .08 for guidance; .08 for control) or self-assertion (M = .10 for guidance; .06 for control). Physical intervention requests were equally as likely to elicit either self-assertion (M = .007), passive noncompliance (M = 0), or defiance (M = .007).

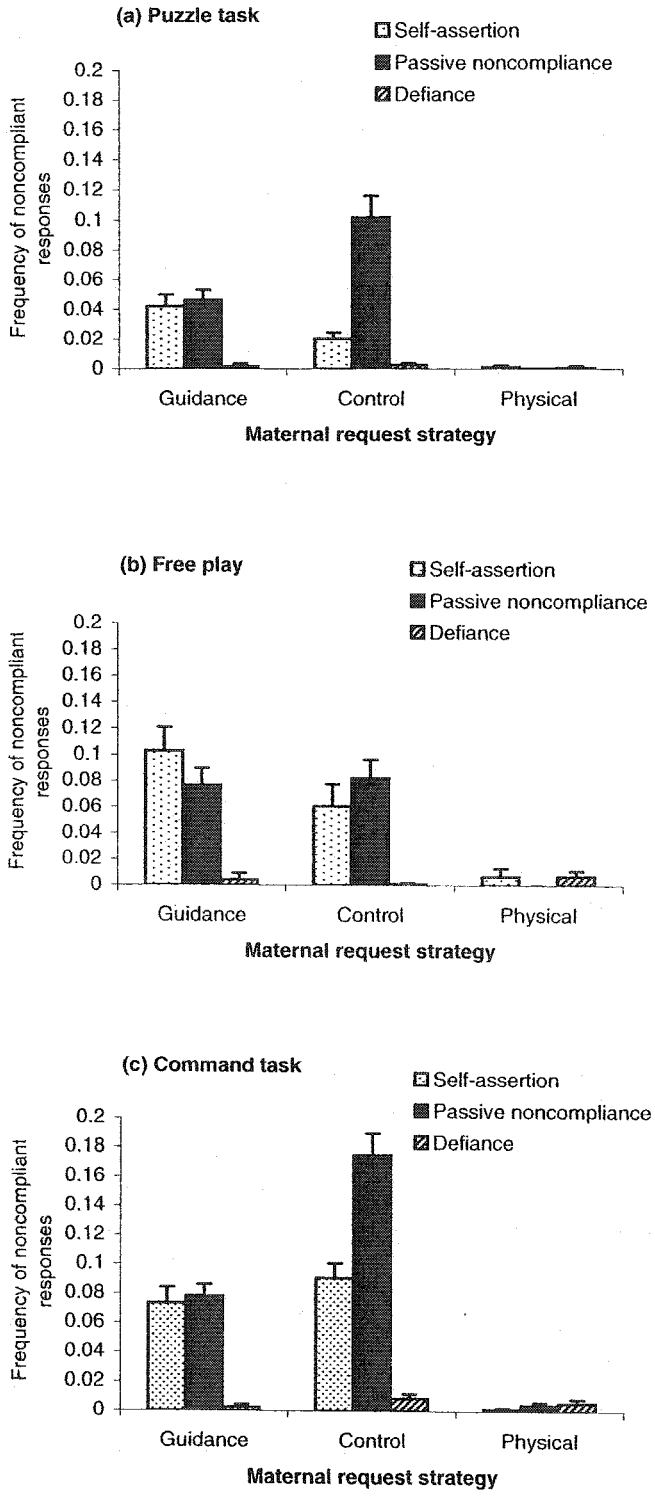

Figure 8. Frequency of Noncompliant Responses to Maternal Requests during the (a) Puzzle Task, (b) Free Play, and (c) Command Task, as a Function of Noncompliance Strategy and Maternal Request Strategy

Relationships among Maternal Childhood Risk Status, Maternal Request Strategies, and Child Compliance and Noncompliance

Given the number of analyses that were planned, it was deemed necessary to reduce the number of variables to be included in the regression analyses. The recommended minimum number of participants per predictor variable is ten, therefore the following regression analyses were limited to seven variables each. Tabachnick and Fidell (2001) recommend using factor analysis to reduce the number of variables when the predictors are significantly correlated. As such, a principal components factor analysis with a Varimax rotation was conducted on the following maternal request variables: average guidance score, average control score, average physical score, average repeat score, and average no opportunity score. Two factors were retained, which explained a total of 77.2% of the variance. The first factor had an eigenvalue of 2.36 and explained 47.2% of the variance. This factor included the average guidance and average control variables, and was labeled Positive Request Strategies. The second factor had an eigenvalue of 1.5 and explained 30% of the variance. This factor included the average physical, average repeat, and average no opportunity variables, and was labeled Negative Request Strategies. The factor loadings are presented in Table 4.

Hierarchical multiple regression analyses were selected to analyze the data because they allow for the examination of the specific contribution of a given predictor, while partialling out the effects of other independent variables known to be correlated with the dependent measure. Within the following analyses, a series of predictors were entered sequentially based on a chronological sequence. In general, maternal childhood risk factors were entered first, followed by maternal and child demographic variables.

Table 4

Factor Loadings for Positive and Negative Maternal Request Strategies (N = 74)

Variables	Factor Loadings
Factor 1: Positive Request Strategies	
Average guidance requests	-0.922
Average control requests	0.98
Factor 2: Negative Request Strategies	
Average physical interventions	0.741
Average repeated requests	0.876
Average no opportunity requests	0.737

Maternal request factor scores were generally entered in the final steps. Since previous research from the Concordia Longitudinal Risk Project has indicated that the presence of both childhood aggression and social withdrawal together may be more strongly predictive of negative outcomes than aggression or withdrawal alone, the interaction term between levels of aggression and social withdrawal was entered in the last step.

Intercorrelations between the variables examined in the regression analyses were conducted in order to assess for multicollinearity or singularity, which can inflate the error term and thus weaken the quality of the analyses (Tabachnick, 2001). The correlation matrix is presented in Appendix I.

For each of the regression analyses that was found to be significant, a table is provided in the text. When the results of the analysis were not significant, a summary table of the regression analysis is provided in Appendix J.

Prediction of Maternal Requests

The first set of regression analyses were run in order to examine the relationship between mothers' childhood levels of aggression and withdrawal and five measures of maternal requesting; five separate hierarchical regressions were conducted. For each analysis, mothers' Aggression and Social Withdrawal were entered as a first step, and Maternal Education (measured in years) was entered as a second step. Child Age and Gender were entered in the third step. Finally, the Aggression x Withdrawal interaction term was entered in the final step.

In the regression examining mothers' childhood aggression and withdrawal as predictors of average levels of guidance requests, the hierarchical regression accounted

for 4.6% (-3.9% adjusted) of the total variance. After all the independent variables were entered at Step 4, the multiple R did not reach significance. Neither mothers' childhood Aggression or Withdrawal emerged as significant predictors, nor did the maternal or child demographic variables (Appendix K, Table 1).

In the regression examining mothers' childhood aggression and withdrawal as predictors of average levels of control requests, the hierarchical regression accounted for 8.4% (0.2% adjusted) of the total variance. After all the independent variables were entered at Step 4, the multiple R did not reach significance. Neither mothers' childhood Aggression or Withdrawal scores emerged as significant predictors, nor did the maternal or child demographic variables (Appendix K, Table 2).

In the regression examining mothers' childhood aggression and withdrawal as predictors of average levels of physical intervention requests, the hierarchical regression accounted for 24.2% (17.4% adjusted) of the total variance (Table 5). At Step 1, maternal childhood Withdrawal significantly predicted levels of physical intervention requests and accounted for 9.5% of the variance. Mothers with higher levels of Withdrawal were likely to make more physical intervention requests (*Beta* = .31, $p < .008$). Maternal Aggression did not significantly predict levels of physical requests. At step 2, Education did not significantly predict levels of physical requests. Child Age (*Beta* = -.27, $p < .013$) and Gender (*Beta* = -.30, $p < .008$), both entered in Step 3, predicted physical requests and together accounted for 14.4% of the variance. Mothers make more physical intervention requests with younger children, and with boys. The Aggression x Withdrawal interaction term did not emerge as a significant predictor.

Table 5

Maternal Childhood Levels of Agression and Withdrawal and Average Levels of Physical Requests (N=74)

Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				0.10	3.72*
Childhood Aggression	0.05	0.05	0.46		
Childhood Withdrawal	0.31	0.31	2.72**		
Step 2				0.001	0.05
Childhood Aggression	0.05	0.04	0.39		
Childhood Withdrawal	0.01	0.30	2.62*		
Maternal Education	-0.03	-0.03	-0.23		
Step 3				0.14	6.43**
Childhood Aggression	0.12	.11	1.06		
Childhood Withdrawal	0.28	.28	2.61*		
Maternal Education	0.02	.02	0.21		
Child Age	-0.27	-.27	-2.54*		
Child Gender	-.30	-.29	-2.74**		
Step 4				0.002	0.19
Childhood Aggression	.09	.08	.71		
Childhood Withdrawal	.27	.25	2.39*		
Maternal Education	.02	.02	.19		
Child Age	-.28	-.27	-2.55*		
Child Gender	-.3	-.29	-2.75**		
Childhood Aggression x Withdrawal	.06	.05	.43		
	R = .49		R^2_{Adj} = .17		F = 3.56**

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

In the regression examining mothers' childhood aggression and withdrawal as predictors of average levels of repeated requests, the hierarchical regression accounted for 33.7% (27.8% adjusted) of the total variance (Table 6). Entered in Step 1, both childhood Aggression (*Beta* = .23, $p < .033$) and Withdrawal (*Beta* = .43, $p < .0001$) significantly predicted levels of physical requests and accounted for 22.4% of the variance. Mothers with higher levels of childhood aggression and withdrawal made more repeated requests. When maternal Education was added in Step 2, only Withdrawal remained a significant predictor. Age, entered in Step 3, emerged as a significant predictor, accounting for 10.7% of the variance. Mothers of younger children made more repeated requests (*Beta* = -.31, $p < .003$). Neither child gender nor the Aggression x Withdrawal interaction term emerged as significant predictors.

In the regression examining mothers' childhood aggression and withdrawal as predictors of average levels of no opportunity requests, the hierarchical regression accounted for 12.7% (4.8% adjusted) of the total variance (Table 7). Only the first step, in which childhood Aggression and Withdrawal were entered, appeared to be significant. Childhood Withdrawal significantly predicted levels of no opportunity requests and accounted for 8.2% of the variance. Mothers with higher levels of withdrawal had higher levels of no opportunity requests (*Beta* = .27, $p < .02$). Neither maternal Aggression or Education, nor child Age or Gender emerged as significant predictors of levels of no opportunity requests.

Prediction of Child Compliance with Maternal Requests

A regression analysis was run in order to examine the relationship between mothers' childhood levels of Aggression and Withdrawal, maternal Request Strategies,

Table 6

Maternal Childhood Levels of Agression and Withdrawal and Average Levels of Repeated Requests (N=74)

Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				.22	10.27***
Childhood Aggression	.23	.23	2.18*		
Childhood Withdrawal	.43	.43	4.12***		
Step 2				.004	.319
Childhood Aggression	.21	.21	1.98		
Childhood Withdrawal	.42	.41	3.94***		
Maternal Education	-.06	-.06	-0.57		
Step 3				.11	5.49**
Childhood Aggression	.27	.26	2.58*		
Childhood Withdrawal	.41	.40	4.06***		
Maternal Education	-.03	-.03	-.28		
Child Age	-.31	-.31	-3.12**		
Child Gender	-.14	-.14	-1.38		
Step 4				.002	.23
Childhood Aggression	.30	.25	2.47*		
Childhood Withdrawal	.42	.40	4.02***		
Maternal Education	-.03	-.03	-.25		
Child Age	-.31	-.30	-3.05**		
Child Gender	-.14	-.13	-1.32		
Childhood Aggression x Withdrawal	-.06	-.05	-.06		
	R = .58		R^2_{Adj} = .28		F = 5.69***

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

Table 7

Maternal Childhood Levels of Agression and Withdrawal and Average Levels of No Opportunity Requests (N=74)

Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				.08	3.18*
Childhood Aggression	.11	.11	.10		
Childhood Withdrawal	.27	.27	2.39*		
Step 2				.006	.46
Childhood Aggression	.10	.09	.81		
Childhood Withdrawal	.26	.25	2.22*		
Maternal Education	-.08	-.08	-0.68		
Step 3				.01	.49
Childhood Aggression	.12	.11	.97		
Childhood Withdrawal	.25	.25	2.14*		
Maternal Education	-.07	-.06	-.54		
Child Age	-.08	-.08	-.70		
Child Gender	-.09	-.09	-.76		
Step 4				.03	1.93
Childhood Aggression	.21	.18	1.53		
Childhood Withdrawal	.30	.28	2.45*		
Maternal Education	-.06	-.05	-.47		
Child Age	-.07	-.07	-.59		
Child Gender	-0.08	-.07	-.65		
Childhood Aggression x Withdrawal	-.19	-.16	-1.39		
	R = .36		R^2_{Adj} = .05		F = 1.62

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

and average levels of child compliance with maternal requests. A hierarchical regression was conducted in which mothers' Aggression and social Withdrawal were entered as a first step, and maternal Education (measured in years) was entered as a second step. Child Age and Gender were entered in the third step. Finally, the Positive and Negative Request Strategies factor scores were entered in the last step.

This hierarchical regression accounted for 34.8% (27.9% adjusted) of the total variance (Table 8). Maternal childhood Withdrawal, entered in Step 1, significantly predicted average levels of child compliance with maternal requests, accounting for 11% of the variance. Mothers with higher levels of withdrawal had children who complied less with maternal requests (*Beta* = -.33, $p < .005$). Negative request strategies, entered in Step 4, also emerged as a significant predictor, accounting for 18.3% of the variance. Mothers who displayed higher levels of negative request strategies had children who complied less with maternal requests (*Beta* = -.54, $p < .0001$). At this point, Withdrawal was no longer significant. Neither maternal or child demographic variables, nor maternal Aggression or Positive request strategies emerged as significant predictors.

Prediction of Noncompliant Responses to Maternal Requests

The next set of regression analyses was run in order to examine the relationship between mothers' childhood levels of Aggression and Withdrawal, maternal Request Strategies, and average noncompliant responses to maternal requests. Three separate hierarchical regressions were conducted. In each analysis, mothers' Aggression and social Withdrawal were entered as a first step, and maternal Education (measured in years) was entered as a second step. Child Age and Gender were entered in the third step. Finally, the Positive and Negative Request Strategies factor scores were entered in the

Table 8

Maternal Childhood Levels of Agression and Withdrawal, Maternal Request Strategies, and Average Levels of Child Compliance with Maternal Requests (N=74)

Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				.11	4.41*
Childhood Aggression	.04	.04	.38		
Childhood Withdrawal	-.33	-.33	-2.91**		
Step 2				.01	.83
Childhood Aggression	.07	.07	.58		
Childhood Withdrawal	-.31	-.30	-2.7**		
Maternal Education	.11	.10	.91		
Step 3				.04	1.79
Childhood Aggression	.03	.03	.235		
Childhood Withdrawal	-.30	-.29	-2.62*		
Maternal Education	.08	.07	.67		
Child Age	.15	.15	1.33		
Child Gender	.17	.16	1.46		
Step 4				.18	9.29***
Childhood Aggression	.14	.13	1.32		
Childhood Withdrawal	-.07	-.06	-.64		
Maternal Education	.09	.08	.81		
Child Age	-.04	-.03	-.32		
Child Gender	.03	.02	.23		
Positive Request Strategies	.07	.06	.65		
Negative Request Strategies	-.54	-.43	-4.31***		
	R = .59		R^2_{Adj} = .28		F = 5.04***

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

last step.

In the regression examining mothers' childhood Aggression and Withdrawal and maternal request strategies as predictors of average levels of self-assertion, the hierarchical regression accounted for 21.6% (13.3% adjusted) of the total variance (Table 9). Maternal Aggression, Withdrawal, and Education did not significantly predict levels of self-assertion. Only child Age, entered in Step 3, emerged as a significant predictor, accounting for 12.1% of the variance. Older children exhibited higher levels of self-assertion (*Beta* = .34, $p < .003$). Neither child Gender, nor Positive or Negative Request Strategies, significantly predicted levels of self-assertion.

In the regression examining mothers' childhood Aggression and Withdrawal and maternal request strategies as predictors of average levels of passive noncompliance, the hierarchical regression accounted for 28.2% (20.6% adjusted) of the total variance (Table 10). Maternal Aggression, Withdrawal, and Education did not significantly predict levels of passive noncompliance. Only child Age, entered in Step 3, emerged as a significant predictor, accounting for 20.1% of the variance. Younger children exhibited higher levels of passive noncompliance (*Beta* = -.44, $p < .0001$). Neither Positive nor Negative Request Strategies significantly predicted levels of passive noncompliance.

In the regression examining mothers' childhood Aggression and Withdrawal and maternal request strategies as predictors of average levels of defiance, the hierarchical regression accounted for 21.2% (12.7% adjusted) of the total variance (Table 11). Maternal Aggression, Withdrawal, and Education did not significantly predict levels of defiance. Neither child Age or Gender, nor Positive Request Strategies significantly

Table 9

Maternal Childhood Levels of Agression and Withdrawal, Maternal Request Strategies, and Average Levels of Self-Assertion in Response to Maternal Requests (N=74)

Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				.06	2.25
Childhood Aggression	.15	.15	1.28		
Childhood Withdrawal	-.18	-.18	-1.59		
Step 2				.02	1.23
Childhood Aggression	.12	.11	.99		
Childhood Withdrawal	-.21	-.20	-1.76		
Maternal Education	-.13	-.13	-1.11		
Step 3				.12	5.14**
Childhood Aggression	.06	.06	.56		
Childhood Withdrawal	-.20	-.19	-1.77		
Maternal Education	-.16	-.16	-1.42		
Child Age	.34	.34	3.13**		
Child Gender	.11	.11	.97		
Step 4				.02	.80
Childhood Aggression	.10	.09	.86		
Childhood Withdrawal	-.12	-.11	-.99		
Maternal Education	-.16	-.15	-1.39		
Child Age	.29	.26	2.34*		
Child Gender	.06	.06	.53		
Positive Request Strategies	.02	.02	.17		
Negative Request Strategies	-.17	-.14	-1.26		
	R = .47		R^2_{Adj} = .13		F = 2.6*

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

Table 10

Maternal Childhood Levels of Agression and Withdrawal, Maternal Request Strategies, and Average Levels of Passive Noncompliance in Response to Maternal Requests (N=74)

Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				.06	2.29
Childhood Aggression	-.12	-.11	-.99		
Childhood Withdrawal	.21	.21	1.82		
Step 2				.00	.02
Childhood Aggression	-.12	-.12	-.99		
Childhood Withdrawal	.21	.20	1.75		
Maternal Education	-.02	-.02	-.16		
Step 3				.20	9.27***
Childhood Aggression	-.05	-.05	-.48		
Childhood Withdrawal	.19	.19	1.82		
Maternal Education	.02	.02	.17		
Child Age	-.44	-.44	-4.22***		
Child Gender	-.13	-.12	-1.19		
Step 4				.02	.90
Childhood Aggression	-.09	-.08	-.79		
Childhood Withdrawal	.12	.11	1.01		
Maternal Education	.01	.01	.12		
Child Age	-.38	-.34	-3.28**		
Child Gender	-.08	-.07	-.70		
Positive Request Strategies	-.04	-.04	-.35		
Negative Request Strategies	.17	.14	1.33		
	R = .53		R^2_{Adj} = .28		F = 3.7**

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

Table 11

Maternal Childhood Levels of Agression and Withdrawal, Maternal Request Strategies, and Average Levels of Defiance in Response to Maternal Requests (N=74)

Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				.04	1.46
Childhood Aggression	-.06	-.06	-.50		
Childhood Withdrawal	.19	.19	1.59		
Step 2				.001	.06
Childhood Aggression	-.05	-.05	-.43		
Childhood Withdrawal	.19	.19	1.6		
Maternal Education	.03	.03	.25		
Step 3				.06	2.42
Childhood Aggression	-.01	-.01	-.04		
Childhood Withdrawal	.18	.17	1.52		
Maternal Education	.06	.06	.52		
Child Age	-.21	-.20	-1.77		
Child Gender	-.17	-.17	-1.45		
Step 4				.11	4.46*
Childhood Aggression	-.09	-.08	-.74		
Childhood Withdrawal	.01	.01	.10		
Maternal Education	.04	.04	.37		
Child Age	-.05	-.05	-.44		
Child Gender	-.06	-.05	-.47		
Positive Request Strategies	-.14	-.13	-1.21		
Negative Request Strategies	.39	.31	2.84**		
	R = .46		R^2_{Adj} = .13		F = 2.52*

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

predicted levels of passive noncompliance. Only Negative Request Strategies, entered in Step 4, emerged as a significant predictor, accounting for 10.7% of the variance. Mothers who demonstrated higher levels of negative request strategies had children who displayed higher levels of defiance (*Beta* = .39, $p < .006$).

Discussion

The current study was designed to assess two main objectives. The first objective was to investigate whether maternal requests, and child compliance and noncompliance vary according to play context, maternal request strategy, child noncompliance strategy, and child age. The second objective was to investigate the contribution of maternal childhood risk status and maternal request strategies to the prediction of maternal requests and child compliance and noncompliance. These objectives were explored in a sample of high-risk mothers and their preschool-aged children. In general, the results from this investigation support the hypotheses that (1) mothers' requests differ according to child age, maternal request strategy, and play context, (2) child compliance and noncompliance with maternal requests differ according to child age, maternal request strategy, child noncompliance strategy, and play context, (3) mothers' childhood levels of social withdrawal predict maternal requests, and (4) mothers' childhood levels of social withdrawal and maternal request strategies predict child compliance and noncompliance with maternal requests. What follows is a discussion of these results, their implications for future research and practical applications, and concluding remarks.

Effects of Child Age and Play Context on Maternal Request Strategies and Child Compliance and Noncompliance

With respect to the first objective, the hypotheses that were confirmed are illustrated in Figure 9. More specifically, as expected, mothers made more requests during the command task, followed by the puzzle task, and then the free play. These results suggest that the rate at which mothers make requests differs according to the underlying demands of the situation. Each of the three play contexts was designed

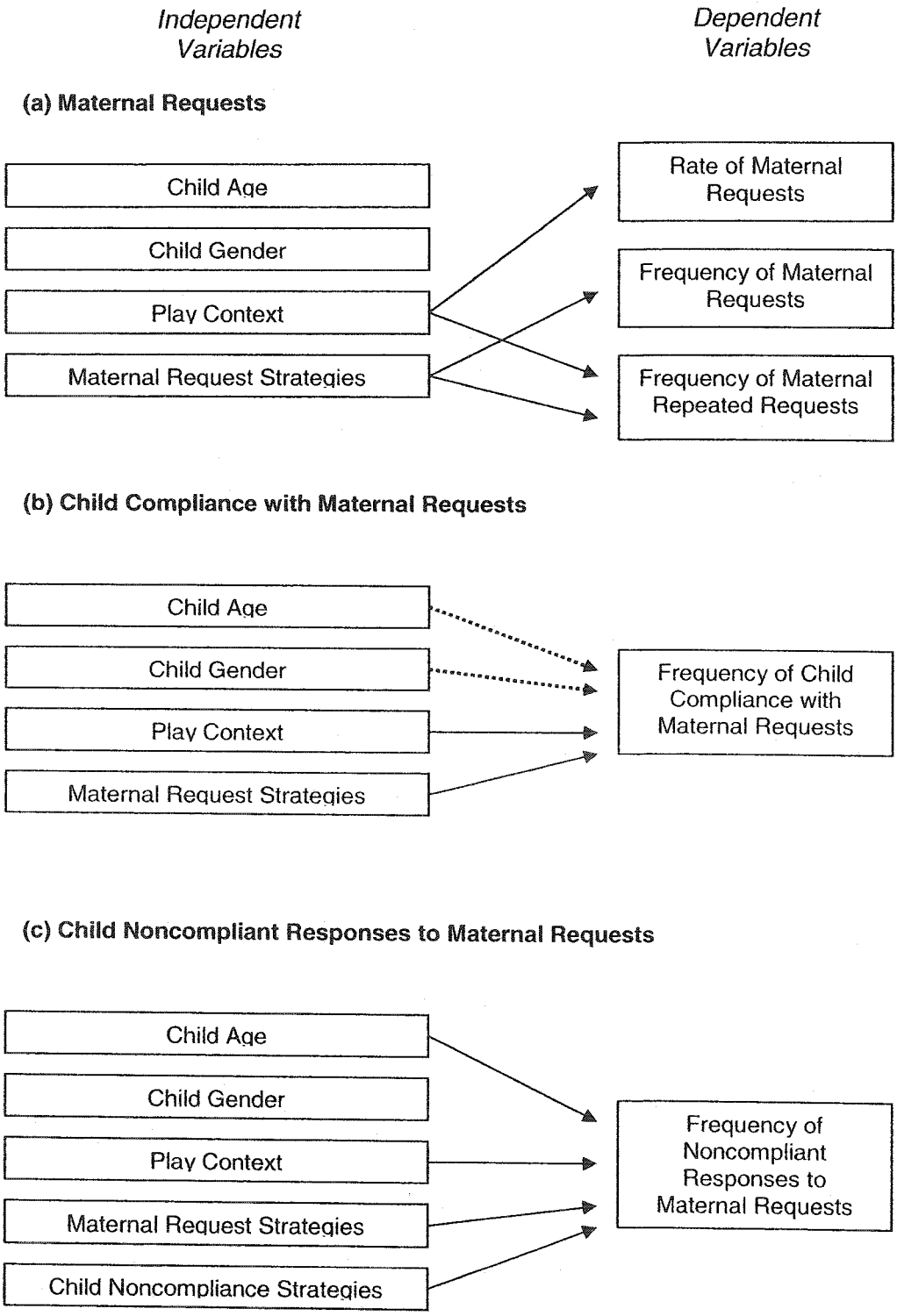

Figure 9. Effects of Child Age and Gender, Play Context, Maternal Request Strategies, and Child Noncompliance Strategies on (a) Maternal Requests, (b) Child Compliance with Maternal Requests, and (c) Child Noncompliant Responses to Maternal Requests. Solid arrows represent main effects and dashed arrows represent trends. Interaction effects are not shown.

with a unique goal. The command task was designed to obtain an index of maternal requesting and of child compliance and noncompliance. The puzzle task was designed to obtain an index of maternal teaching. Finally, the free play was designed to obtain a baseline measure of mother-child play. The fact that mothers' rates of requesting differed according to play context suggests that mothers were adjusting their rates of requesting according to the unique goals associated with each of the tasks (regardless of whether they recognized having done so).

The finding that the rate of requests varied according to play context confirmed the results of an earlier study by Grunzeweig et al. (2003), in which the same coding scheme was used to code a sample of high-risk mothers interacting with their infants at 12- and 18-months during two play contexts: a puzzle task and a free play. That study found that mothers made more requests during the didactic puzzle task than the unstructured free play. The current study extended these results by demonstrating that mothers make more requests in a context designed to elicit maternal requesting than in one designed to elicit maternal teaching. Most literature examining maternal requests across contexts have found at least modest cross-situational stability (e.g., Braungart-Rieker et al., 1997; Calkins, Smith, Gill, & Johnson, 1998); however, these studies only explored mothers' request strategies, and not mothers' rates of requesting, per se.

During the command task, some mothers attempted to engage their children by framing the task as a game, similar to "Simon Says", whereas others tried to integrate the commands into the play already in progress, and still others treated it like a test, in which children had to demonstrate their proficiency at various skills. As a result, the underlying demands of the command task differed across the dyads. It would be interesting to

determine whether the results would have held true if the command task had been more structured; for example, if mothers were instructed to request that their children clean up the play area. This sort of a clean-up task has been used in previous research on maternal request strategies and child compliance and has yielded informative results (e.g., Braungart-Rieker et al., 1997; Calkins et al., 1998; Crockenberg & Litman, 1990). However, it is important to recognize that, unlike these clean-up tasks, the command task in the current study was intended to be unstructured, in order to find out how the mothers would handle the task requirements; i.e. Which commands would they choose from the list? How many would they choose? Would they create their own requests? How would they choose to make their requests? This open-ended procedure facilitated the acquisition of much valuable information on the requesting habits of the mothers in the sample that a more structured measure of maternal requests and child compliance and noncompliance would not have provided.

As anticipated, the results indicated that mothers made more requests of younger preschoolers than of older preschoolers. It seems reasonable that this would be the case as younger children may necessitate more requests in order for them to fully understand what is being asked of them. Kaler and Kopp (1990) investigated comprehension of requests in an observational study of toddlers ranging in age from 12 to 18 months. Results indicated that overall, children complied when they understood maternal requests, and conversely did not comply when they did not understand. Children rarely complied when they did not understand, and likewise, they seldom displayed noncompliance when they understood what was being requested (Kaler & Kopp, 1990).

In addition to examining the rate of mothers' requests, the request strategies that mothers employed were also assessed. The results revealed that mothers employed control strategies most, followed by guidance requests, and then by physical interventions. This pattern is consistent with those reported in other studies on maternal request strategies (e.g., Kuczynski et al., 1987; Rothbaum & Crockenberg, 1995). Mothers employed physical interventions much less frequently than guidance or control requests. This large discrepancy may be attributed to the fact that the dyads were being videotaped and, consequently, the mothers might have been "censoring" their behaviour. An alternative explanation is that physical intervention strategies were generally not used because they were not age-appropriate, and that a ceiling effect for the frequency of these requests was observed. Perhaps if the children in the sample ranged in age from 12 months, for example, to 72 months, a wider variance in physical requests might have been observed.

When mothers repeated their requests, the frequency with which they employed each of the three request strategies varied according to play context. During the more structured puzzle and command tasks, mothers used control requests most often, followed by guidance and physical strategies, whereas during the unstructured free play, mothers repeated guidance and control requests equally as often. This finding is not surprising, given that when mothers have a specific goal to accomplish, such as during the puzzle and command tasks, direct requests have been shown to be more effective at obtaining compliance than indirect requests (Barkley, 1987). In contrast, during the free play, mothers tended to let their children direct the activity; they did not have specific objectives with which compliance was required.

Overall, results showed that children complied with control requests more often than with guidance requests. The literature has shown that request strategies that are lower in power-assertion are related to child compliance (e.g., Crockenberg & Litman, 1990; Donovan et al., 2000); however, the findings are mixed as to whether direct strategies, such as control requests, or indirect strategies, such as guidance requests, are more effective at eliciting compliance. Some literature suggests that indirect strategies are less likely to elicit compliance because they imply that the child can *choose* whether or not to comply (Barkley, 1987). For example, if a mother were to ask her child, "would you like to bring me the book?", the child has the opportunity to refuse. However, if the same request were phrased more directly, "bring me the book", the option to refuse is no longer implied. Alternatively, other research suggests that indirect strategies are more likely to elicit compliance because their low degree of power-assertion conveys to the child a sense of power-sharing and respect for the child's developing autonomy (Crockenberg & Litman, 1990). Parpal and Maccoby (1985) showed that children seem to have an "I'll scratch your back if you scratch mine" philosophy, in that they are more likely to comply if they believe that they are involved in a reciprocal relationship. Since the present study found that children were more likely to comply with control requests, it is reasonable to believe that requests that are direct and specific, as opposed to those that imply power-sharing and choice, are more likely to elicit compliance in this high-risk, preschool-aged sample. Perhaps the structure and limit-setting provided by control requests better enable these children to regulate their behaviour. Control studies with older and/or low-risk children would be required to determine if the fact that the results

favoured control requests could be attributed to either the age or risk status of the participants, or to some other factors.

It was hypothesized that not only would compliance vary according to maternal request strategy, as was shown, but that compliance would also differ according to play context. The results supported this hypothesis as well; children complied with their mothers' requests most often during the puzzle task when compared to the free play or the command task. This finding is consistent with Schneider-Rosen and Wenz-Gross (1990), who postulated that compliance in a single situation should not be generalized across situations without first considering the variations in the demands created by the situation or the ways children respond to task demands. In the current study, the demands inherent in the play context, as well as those placed by the mothers, differed considerably across the tasks. During the free play, mothers often encouraged their children to take the lead. From the perspective that noncompliance is a means for children to express their autonomy (Crockenberg & Litman, 1990; Kuczynski, 2003; Kuczynski & Kochanska, 1990), noncompliance during the free play may be the children's way of maintaining a leadership position. During the command task, the children may have been confused by the apparently sudden and arbitrary nature of their mothers' requests; many children may not have complied with their mothers' requests because the situation (or their mothers) did not provide any reasons as to why they should comply. As mentioned earlier, some mothers tried to incorporate the commands into the play that was already in progress; making the requests seem more relevant and justifiable. These children may have had an easier time complying with the requests. During the puzzle task, however, the children

may have been more likely to comply with their mothers' didactic requests because they were motivated to complete the puzzles.

The older children in the current study complied with maternal requests more frequently than did the younger children. This finding is consistent with the developmental interpretation of compliance; namely, that as children age, they display more competent social behaviour in the face of maternal requests (Houser et al., 2003; Kochanska et al., 2001).

In addition, the girls in the present study demonstrated a higher frequency of compliance than did the boys. Although some studies have shown that girls are typically more compliant than boys, the findings are mixed. Kuczynski and Kochanska (1990) demonstrated that five year-old girls are generally more compliant than boys of the same age; however, in their studies of compliance, both Kaler and Kopp (1990) and Koenig, Cicchetti, and Rogosch (2000) found no evidence of gender differences.

When children did not comply with their mothers' requests, the particular noncompliance strategies that were employed were assessed. The results showed that the frequency with which children exhibited the three noncompliance strategies varied according to play context. During the puzzle and command tasks, children displayed passive noncompliance significantly more often than self-assertion, whereas during the free play, children displayed self-assertion as often as passive noncompliance. This difference may be attributed to the fact that during the free play, mothers tended to encourage their children to lead the activity, which may have increased the likelihood that children would assert their desires relative to during the puzzle and command tasks, which were predominantly mother-directed.

The results showed that the frequency with which children exhibited the noncompliance strategies also varied according to maternal request strategy. The most interesting difference was that in response to control requests, children responded with passive noncompliance significantly more often than with self-assertion, whereas in response to guidance requests, children employed passive noncompliance and self-assertion equally as often. The finding that control requests seemed to elicit more passive noncompliance than did guidance requests could be explained by the fact that relative to guidance requests, control requests do not invite the child to share the power in the relationship. If children do not feel that their input is wanted, then they may be less likely to assert their desires; instead, they might choose to simply ignore their mothers' requests. This finding is consistent with the results of Braungart-Rieker et al. (1997), who also reported an association between maternal control requests and child passive noncompliance.

Finally, the frequency with which children exhibited the different noncompliance strategies varied according to their mothers' request strategies, and according to the age of the children. This finding can be interpreted from a developmental perspective; as children age they use increasingly more skilful noncompliance strategies that make use of their expanding language capacity (Donovan et al., 2000; Kuczynski & Kochanska, 1990). It is reasonable to assume, therefore, that the way in which children express noncompliant responses to the different request strategies also reflects a developmental progression. The present study found that, in general, young and old preschoolers did not differ in their response to guidance requests. In response to control requests, young children tended to respond using passive noncompliance more often than did older

children. Nowhere is the age gap better illustrated than in the case of physical intervention, where younger children were most likely to respond using defiance, and older children were no more likely to display any of the three noncompliance strategies. It seems that young children immediately and overtly express their frustration with their mothers' use of such a dominating strategy, whereas older preschoolers, who are better able to regulate their emotions, find alternate ways of coping with their mothers' behaviours. It would be important for future research to investigate how mothers reacted to young children's defiance in response to their physical interventions. If the children's aversive response is met with a similar aversive reaction, then the potential exists for a coercive cycle of interaction to take place. If the mother-child dyads develop a pattern of coercive cycles early on in their relationships, then the probability of future maladaptive outcomes is increased. This implication is of particular importance given that the participants stem from a population of mothers with childhood histories of aggression and withdrawal, who are already at risk for such coercive cycles (Patterson, 1982; Serbin et al., 1998).

Taken together, the results discussed thus far lend support to the hypotheses that the rate of maternal requests and the strategies that mothers employ are indeed affected by child age and play context. Furthermore, evidence was found to support the hypotheses that child compliance, as well as noncompliance strategies, are influenced by child age and play context, and by mothers' request strategies. These effects are generally consistent with those reported in previous literature on maternal request strategies and child compliance and noncompliance; however, the current study raises awareness of the impact of play context on these maternal and child behaviours, a relationship that has

been minimally explored in previous research. Given that early noncompliance is related to later behaviour problems, the effects of context on maternal request strategies and child compliance and noncompliance results shed light on the early underpinnings of deviant behaviour. The implications of these results are particularly relevant in a high-risk sample, where behaviour problems are more common than in the normative population (Boyle & Lipman, 2002; Patterson et al., 1989; Shaw et al., 1998).

Relationships among Maternal Childhood Risk Status, Maternal Request Strategies, and Child Compliance and Noncompliance

In order to better understand maternal request strategies and child compliance and noncompliance in the context of a high-risk sample, the relationships between maternal childhood risk status, maternal request strategies, and child compliance and noncompliance were investigated. Results pertaining to the second objective are illustrated in Figure 10. More specifically, the findings revealed that mothers with histories of childhood social withdrawal were more likely to use physical intervention strategies. This finding seems logical when one considers that women with high levels of childhood withdrawal may exhibit social skills deficits. During childhood, these women were rated by their peers as being, for example, too shy to make friends, having few friends, and often not wanting to play (Pekarik et al., 1976). These women likely had very limited experience with social interaction, which may have hindered their ability to maximally develop their verbal skills. It is not surprising then, that in a parenting context, these women are likely to use physical strategies. Previous research on the Concordia sample has also shown that maternal childhood withdrawal predicts mothers' behaviour when interacting with their children. One study that examined 84 women with their

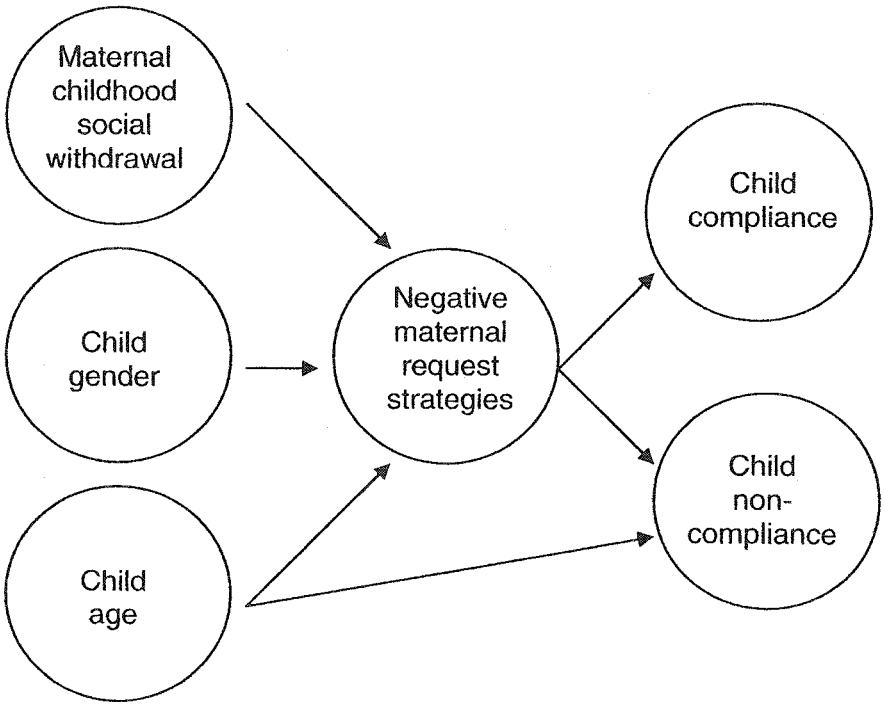

Figure 10. Relationships among Child Age and Gender, Maternal Childhood Risk Status, Maternal Request Strategies, and Child Compliance and Noncompliance. Variables at arrow tails represent predictors and variables at arrow heads represent criterion variables.

school-aged children found that childhood withdrawal predicted maternal unresponsivity during a laboratory interaction task (Cooperman, 1996). Taken together, these findings underscore the implications of childhood social withdrawal on parenting.

Mothers were more likely to use physical intervention strategies with boys, and with younger children. This finding is consistent with the study by Crockenberg and Litman (1990), which found a trend towards mothers using more negative control strategies (i.e. criticism, physical enforcement) with boys than with girls. It is unclear as to why mothers in the current study tended to use physical intervention more often with boys than with girls. One possibility is that mothers' use of physical intervention was related to the trend that boys complied less often than girls. However, since the data were not analyzed sequentially, it is not possible to infer causality. Another possibility is that boys tried to leave the play area more often than did girls; mothers may have resorted to using physical means to keep them on the mat, which might explain some of the variance in the frequency of physical interventions. However, the frequency of leaving the mat was not an independent part of the coding scheme, thus it is not possible to know with certainty. In the current study, younger children also tended to move away from the play area more often than did older children, thus it is not surprising that mothers felt the need to physically restrict their movement. However, again, since the frequency of leaving the mat was not coded, it is impossible to comment with certainty. In addition, mothers may have perceived younger children to have lower levels of comprehension, and they may have felt the need to use physical intervention in order to compensate for this difficulty. Kuczynski et al. (1987) reported that over time, mothers of preschool-aged children demonstrate a shift from the physical to the verbal modalities of maternal interventions.

This shift represents mothers' adaptations to the increasing ability of children to understand verbal communication and to regulate their own behaviour in accordance with maternal requests (Kuczynski et al., 1987). Related to these findings, mothers of young preschoolers were more likely to make repetitions. This finding may also be related to younger preschoolers' ability to comprehend maternal requests in comparison to older preschoolers.

A particularly interesting finding was that mothers with histories of childhood withdrawal were more likely to repeat their requests. This finding has implications for the history of the mother-child relationship, and for future child behaviour. A relationship between any two people is formed when the participants accumulate a history of interactions and they apply expectancies based on past interactions to subsequent interactions (Kuczynski, 2003). During mother-child interactions, both members of the dyad interact on the basis of immediately present objective stimuli, and also on the basis of relationship expectancies. If a child develops the expectancy that his/her mother will always repeat her requests, the child will likely not comply with the first request. This response has the potential to aggravate the mother, leading to more repetitions as well as other negative, or provoking behaviours, to which the child will likely respond with noncompliance. This escalating pattern is reminiscent of the coercive cycles described by Patterson (1982).

Moreover, mothers with histories of childhood withdrawal were more likely to make no opportunity requests; in other words, they were more likely to repeat their requests within one second following the initial request. This behaviour is particularly coercive in that it implies that, perhaps based on past interactions, the mother has

developed the expectancy that her child will not comply with the initial request. Also, the repetitive, nagging quality of no opportunity requests makes them exceptionally irritating; for example, "Regarde ici! Regarde ici! Regarde ici!". Again, this behaviour may signify a potential social skills deficit, possibly resulting from withdrawn mothers' limited experience with social interactions. This finding with respect to no opportunity requests, taken together with previous findings on childhood social withdrawal, provides further evidence for the stability of withdrawal over time and its deleterious effects. It appears that girls who exhibited withdrawal during childhood continue to display limited social competence when they interact with their children, creating the potential for negative mother-child interactions. Furthermore, given that negative request strategies such as no opportunity requests were negatively associated with child compliance, this finding has important implications for the intergenerational transmission of risk, as will soon be discussed.

Contrary to expectations, maternal childhood aggression was not found to significantly predict any of the dependent variables. This lack of significance was surprising given that aggression has figured prominently as a predictor of maternal and child behaviours in many of the studies on the Concordia Longitudinal Risk Project (e.g., Serbin et al, in press). In the study by Cooperman et al. (1996), childhood aggression was found to predict unresponsive maternal behaviour, as well as child restlessness, aggressivity, and unresponsiveness, during mother-child interactions observed in the laboratory. Another CLRP study on mother-child interactions found that mothers with histories of aggression were less likely to provide cognitive stimulation to their preschool-aged children, as measured by maternal scaffolding during a puzzle task and

by the quality of the environment (Saltaris et al., 2003). Furthermore, results showed that maternal cognitive stimulation mediated the relationship between maternal childhood aggression and children's cognitive competence, suggesting that mothers' histories of aggression affected their children's cognitive development by way of an under-stimulating home environment and suboptimal teaching styles.

There are several possible explanations as to why aggression was not found to be a significant predictor in the current study. Firstly, relative to the aforementioned studies by Cooperman and Saltaris et al., the present research asked different conceptual questions and examined different maternal and child behaviours, in different contexts. Secondly, with respect to maternal request strategies, the situations observed may not have been conducive to eliciting aggressive behaviours. Anecdotally, little variability in mother's emotional style was observed across the sample. For example, mothers were neither overly positive or enthusiastic when making requests, nor were they overly negative or hostile. Regarding child noncompliance, the situations may not have been sufficiently arousing to elicit severely aggressive responses. As the results showed, defiance in general was a relatively infrequent response. Perhaps if noncompliance was coded during bedtime or bathtime, as opposed to during playtime, defiance may have been more frequent, and maternal childhood aggression might have served to predict noncompliance. Finally, the distinction between noncompliant children versus noncompliance with maternal requests must be recognized. Given the implications of context on noncompliance (as shown by the present study), children who are generally described as "compliant" may, depending on the context, not comply with many of their mothers' requests. Likewise, children who are described as "noncompliant" may comply

with many requests, if they are in a situation that is likely to promote compliance. Therefore, although one might expect children of aggressive mothers to be "noncompliant children", maternal histories of aggression may not in fact be related to compliance with maternal requests.

In order to examine the ability of maternal request strategies to predict child compliance and noncompliance, positive request strategy (guidance and control requests) and negative request strategy (physical, repeated, and no opportunity requests) factor scores were created. The results indicated that mothers who employed negative request strategies were less likely to have children who complied with their requests and more likely to have children who displayed defiant behaviour. This finding is consistent with previous research that has found an association between negative control strategies and defiant responses (Crockenberg & Litman, 1990; Kuczynski et al., 1987). From a social learning perspective, this finding can be attributed to the fact that mothers who model aversive strategies are likely to have children who display aversive behaviour as well. It is reasonable to assume that mothers will respond in an aversive fashion to their children's defiant behaviour, leading to an escalating coercive cycle, or that mothers will abandon their requests in an attempt to stop their children's aversive behaviour. Patterson et al. (1989) explain that patterns of behaviour such as these teach the child that using coercive methods is a successful means of obtaining what one desires. The child will likely apply this technique in future family interactions, as well as in the outside world, putting the child at risk for antisocial behaviour, and its sequelae, including school failure and delinquency.

It is important to note that although negative strategies predicted defiant behaviour, childhood levels of aggression and withdrawal did not predict defiance; however, as stated, maternal levels of childhood withdrawal did predict negative strategies, such as repeated and no opportunity requests. Taken together, these results suggest an indirect transmission of risk from mother to child. More specifically, maternal histories of withdrawal were associated with negative request strategies, which were associated with child defiant behaviour.

As anticipated, older children were more likely to exhibit self-assertion and less likely to exhibit passive noncompliance in response to maternal requests. From a social skills perspective, this finding is in line with the developmental interpretation of noncompliance (e.g., Kuczynski & Kochanska, 1990; Kuczynski et al., 1987). As explained by Kuczynski and Kochanska (1990), during the preschool years, what changes is not children's rates of noncompliance, but rather the skills with which they assert their autonomy. As children age, they make use of their developing language skills to express their desires verbally. Children's increasing use of the verbal modality over time may also mirror mothers' rising use of verbal request strategies because, as previously alluded, mothers flexibly adjust their parenting strategies to the increasing capacity of children to understand verbal commands (Kuczynski et al., 1987).

In summary, the results of this investigation revealed four key findings. Firstly, maternal childhood withdrawal predicted increased use of physical intervention, repeated, and no opportunity maternal requests. Negative request strategies predicted decreased child compliance and increased defiance. Child age was negatively associated with physical intervention, repeated requests, and passive noncompliance, and was positively

associated with self-assertion. Lastly, child gender predicted physical intervention, such that mothers used physical strategies more often with boys than with girls.

Taken together, the findings of the present study underscore the importance of identifying the factors that influence the early development of child compliance and noncompliance; namely, play context, age, and maternal request strategies. This undertaking is exceptionally crucial in a high-risk environment given the evidence that mothers who were identified as children as being at high psychosocial risk were more likely to employ negative request strategies, which in turn predicted child noncompliance, and in particular, defiant behaviour. With this new information, this study makes a significant contribution to the current understanding of the pathways that lead children towards resilient or maladaptive outcomes in the face of risk and adversity.

Future Research And Practical Applications

Our current conceptions of maternal request strategies and child compliance and noncompliance, and their relations to high-risk populations, are far from complete. The results of the current study suggest a relationship among play context, age, maternal request strategies, and child compliance and noncompliance. However, the results primarily reflected the mothers' influences on their children. Given the myriad of evidence that demonstrates the influence of children on their mothers (e.g., Crockenberg & Litman, 1990; Kuczynski, 2003), future research should attempt to explore the bi-directional nature of maternal request strategies and child compliance and noncompliance. Sequential analyses could tease out the ways in which maternal request strategies influence child compliance and noncompliance, and vice versa. For example,

how do children's noncompliance strategies influence mothers' selection of subsequent request strategies?

Another interesting research question involves the ability of maternal request strategies and child compliance and noncompliance to predict other concurrent and future child measures. For example, a valuable investigation could involve exploring the relationships between maternal request strategies and child socio-emotional measures such as anxiety or depression (internalizing problems), as well as aggression or hyperactivity (externalizing problems). A study examining the link between maternal control and child depressive symptoms found evidence for an indirect relationship between maternal negative control strategies and depressive symptoms in children, mediated by child perfectionism (Kenney-Benson & Pomerantz, 2003). Another study investigated the association between maternal control and child anxiety symptoms and found evidence to support this relationship (Cho & Pomerantz, 2003). Furthermore, it would be interesting to explore the relationships between child noncompliance strategies and child socio-emotional functioning. A study by Kuczynski and Kochanska (1990) observed the noncompliance strategies employed by toddlers, and again when the children were five years old. They found that the skill level of noncompliance strategies during toddlerhood and at age five was negatively related to the presence of behaviour problems at age five, as measured by the Child Behaviour Checklist (Achenbach, 1991). In addition to measuring child socio-emotional functioning, since request strategies and noncompliance strategies reflect a continuum of skill, it would be a worthwhile endeavour to examine the relationships between these maternal and child strategies and child measures of cognitive ability.

Finally, the results of the current study present the opportunity for an interesting follow-up study, when the children reach school-age. During the preschool years, children are only beginning to learn how to competently assert themselves. As the current study has confirmed, preschoolers' use of self-assertion increases with age. By the time children reach school age, their ability to assert themselves in a socially acceptable manner should have fully developed. It would be interesting to ascertain whether the preschoolers' ability to assert their autonomy in the face of maternal requests serves to predict their ability to negotiate problems with their mothers during the elementary school years. The results of such a study could underscore the skills underlying the development of socially competent behaviour. This research could also elucidate the factors in a high-risk sample that cause this developmental process to go awry.

Evidently there are a number of directions that future research could take. Similarly, the practical applications of the results of the current study are numerous; two important implications will be discussed here. Firstly, the findings of this study have clear implications for family management training. The results suggest that children were most likely to comply with control requests, and that repeated requests and physical interventions were associated with lower rates of compliance. Family management training could teach parents techniques that are consistent with these findings. Furthermore, it is important for parents to be aware of the developmental progression of compliant and noncompliant responses so that they can maintain age-appropriate expectations regarding the abilities of their children to comply with requests. When parents hold expectations that are too high, they will inevitably be disappointed, even when their children behave in an age-appropriate fashion. When parents' expectations fail

to be met, they are likely to respond in an aversive way that reflects their frustration, which will likely not elicit future compliance (Meichenbaum, 2003; Robin & Foster, 1989).

This study also has implications for early intervention parenting programs. It was shown that maternal histories of social withdrawal were associated with negative request strategies, which were associated with child defiant behaviour. If withdrawn girls are identified during childhood, then the opportunity arises for their progress to be monitored. During childhood, these girls could receive intervention to target their social difficulties. Later in life, when they decide to become mothers, these women could receive parenting training, which could focus on verbal and non-verbal strategies that are likely to result in increased positive mother-child interactions. Given that these women may be reacting maladaptively when faced with child noncompliance (i.e. physical interventions, no opportunity requests), these training programs could emphasize appropriate and constructive consequences for noncompliance, such as consistent consequences and positive reinforcement. Early intervention such as this could potentially halt the possible cycle of coercive mother-child interactions.

Conclusions

The results from the present study underscore two important contributions to the research on maternal request strategies and child compliance and noncompliance. The first is that child compliance and noncompliance are related to maternal request strategies, which are all influenced by child age and play context. The effects of play context, as well as its interaction with the other variables, offers a new and unique perspective on this body of literature. Understanding how child behaviour varies across

contexts is especially important with respect to noncompliance, and behaviour problems in general, given that children tend not to behave consistently across all of the contexts in which they find themselves. The current study, and future studies examining the effects of context on maternal and child behaviour, will continue to shed light on the complex processes underlying maternal and child behaviour, as well as the relationship between them.

The second contribution made by the present study concerns the findings that maternal childhood levels of social withdrawal are associated with maternal request strategies, which are associated with child compliance and noncompliance. Taken together with the results on context and age, these findings outline several pathways by which mothers' socialization strategies and/or children's social development could go awry. Conversely, these results also clarify the pathways by which parents and children, in the face of risk and adversity, could prove to be resilient. Longitudinal prospective research, such as the Concordia Longitudinal Risk Project, has shown that in populations identified as at risk for maladaptive development, problematic outcomes are not necessarily inevitable (Serbin et al., 2000; Werner, 1990). By understanding the early underpinnings of both adaptive and maladaptive development, intervention programs can be designed to target parents and children at the critical points along the path that contribute to determining whether they will end up in a lifestyle of risk or resilience.

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Appendix A

Sample Items from the Pupil Evaluation Inventory

Aggression Items

3. Those who can't sit still.

4. Those who try to get other people into trouble.

8. Those who play the clown and get others to laugh.

9. Those who start a fight over nothing.

20. Those who bother people when they're trying to work.

23. Those who are rude to the teacher.

24. Those who are mean and cruel to other children.

Withdrawal Items

5. Those who are too shy to make friends easily.

10. Those who never seem to be having a good time.

11. Those who are upset when called on to answer questions in class.

13. Those who are usually chosen last to join in group activities.

17. Those who have very few friends.

28. Those who often don't want to play.

32. Those who aren't noticed much.

Appendix B

Screening Method for the Original Sample of the Concordia Longitudinal Risk Project

The children in the original Concordia Longitudinal Risk Project were screened for aggression and social withdrawal using a French translation of the Pupil Evaluation Inventory (PEI; (Pekarik et al., 1976), a peer nomination procedure that has been used in several other research projects. The PEI contains 35 items, which load onto three different factors: aggression, withdrawal, and likeability. Peer nominations have been found to represent children at risk for a variety of psychosocial problems (Landau, Milich, & Whitten, 1984), and they have been found to be more reliable than teacher or parent evaluations in the identification of behaviour problems in children (Lyons, 1988).

The PEI was administered to 4109 children in 152 classrooms. Children were asked to select four boys and four girls who were best described by each item of the inventory. The total number of nominations for the aggression and withdrawal dimension was calculated. In order to reduce skewness, a square root transformation was then performed on the total nominated scores for the two dimensions. The transformed aggression and withdrawal scores were then converted to z-scores for each gender, and within each class. This procedure allowed for each child to be scored according to relevant norms for his or her own age and gender. The samples of girls and boys were approximately equal.

Children were then assigned to the Aggressive group (n = 198) if they obtained Aggression scores at the 95th percentile (z = 1.65) or higher and Withdrawal scores below the 75th percentile (z = 0.68); the opposite criteria were used to create the Withdrawn group (n = 220). Children who obtained z-scores above the 75th percentile on both dimensions were classified as Aggressive/Withdrawn (n = 239). Due to the low probability of scoring very high on both the Aggression and Withdrawal scales, a lower

cut-off score was used to establish this group so that a large enough sample could be ensured. The children who comprised the comparison group (n = 1117) scored between the 25th and 75th percentile on both dimensions.

Appendix C

Demographic Information Questionnaire

N° d'identification _____

L'INDIVIDU DANS SON MILIEU

Renseignements sociodémographiques additionnels

Tous ces renseignements sont traités de façon totalement confidentielle

1. **Informations sur la famille de la mère de l'enfant:**

a. Nombre de frères : _____; de soeurs : _____; rang dans la famille _____

Frères ou soeurs décédé(e)s? NON _____ OUI _____ --> préciser : _____

b. Mère : Âge _____. Si décédée, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

c. Père : Âge _____. Si décédé, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

d. Les parents se sont séparés/divorcés en _____:

2. **Informations sur la famille du père de l'enfant**:

a. Nombre de frères : _____; de soeurs : _____; rang dans la famille _____

Frères ou soeurs décédé(e)s? NON _____ OUI _____ --> préciser : _____

b. Mère : Âge _____. Si décédée, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

c. Père : Âge _____. Si décédé, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

d. Les parents se sont séparés/divorcés en _____:

3. **Informations sur la famille du conjoint**: si n'est pas le père

a. Nombre de frères : _____; de soeurs : _____; rang dans la famille _____

Frères ou soeurs décédé(e)s? NON _____ OUI _____ --> préciser : _____

b. Mère : Âge _____. Si décédée, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

c. Père : Âge _____. Si décédé, à quel âge : _____ ; cause du décès : _____

Niveau de scolarité _____ ; en quoi _____

Occupation principale de ces 20 dernières années : _____

d. Les parents se sont séparés/divorcés en _____:

4. **Historique personnel: mère de l'enfant**.

A été élevée principalement par :

_____ père et ma mère
_____ père
_____ oncle / tante
_____ mère
_____ grands-parents
_____ foyer d'accueil

Âge : _____ premier mariage - première fois conjointe de fait
Âge : _____ premier enfant
Âge : _____ séparation - divorce

5. **Historique personnel: père de l'enfant**.

A été élevé principalement par :

_____ père et ma mère
_____ père
_____ oncle / tante
_____ mère
_____ grands-parents
_____ foyer d'accueil

Âge : _____ premier mariage - première fois conjoint de fait
Âge : _____ premier enfant
Âge : _____ séparation - divorce

6. **Historique personnel: conjoint** (si n'est pas le père)

A été élevé principalement par :

_____ père et ma mère
_____ père
_____ oncle / tante
_____ mère
_____ grands-parents
_____ foyer d'accueil

Âge : _____ premier mariage - première fois conjoint de fait
Âge : _____ premier enfant
Âge : _____ séparation - divorce

4. **Père de l'enfant**. Si la mère vit seule ou si le conjoint n'est pas le père de l'enfant ...

a) Nom : _____

Date de naissance: _____ _____ _____
AN MO JR

b) Niveau de scolarité _____ ; en quoi _____

c) Occupation :_____

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

Travaille là depuis : date _____ _____
AN MO

d) Cause de séparation/divorce : _____

e) Verse-t-il une pension alimentaire? NON _____ OUI _____ --> _____ $ / mois
Devrait mais ne le fait pas _____

f) Fréquence et durée des visites : _____

Appendix D

Full Protocol

PARENT-CHILD/HEALTH CANADA:
Full Protocol

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 unecessary 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 Interviewer can reposition materials for Series 2, and position a barrier (e.g., Fisher Price gate, a playpen) that will <u>safely</u> prevent 12-36 mo. child from leaving interaction room during separation episode.**

- **Bathroom check**

(+10 min.)

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. La liste 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 très 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 E

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.
- Alex E. Schwartzman, Ph.D.

FORMULAIRE DE CONSENTEMENT

Je,_____, m'engage volontairement avec mon enfant, _____, à participer à l'étude "L'individu dans son milieu: Les parents et leur enfant" de l'Université Concordia. Les buts du projet m'ont été expliqués. L'étude comprend une série de questionnaires, une évaluation du fonctionnement intellectuel de mon enfant, ainsi que trois périodes de jeux lors desquelles nous serons observés et filmés. L'étude comporte deux sessions d'une durée maximale de 3 heures chacune et une rémunération totale de $50.00 me sera allouée aussitôt que les questionnaires seront remis. En signe de courtoisie, les résultats sommaires de l'évaluation de mon enfant me seront communiqués par téléphone. De plus, les chercheurs seront prêts à effectuer une ou deux visites additionnelles, au besoin, pour terminer l'évaluation, discuter de résultats problématiques, ou m'offrir un service de référence.

Je comprends que toutes les informations que nous fournissons, qu'elles soient écrites ou filmées, sont strictement confidentielles et qu'elles ne serviront qu'à des fins de recherche. Dans toutes les circonstances, je suis assuré(e) que l'anonymat sera conservé. Cependant, selon la loi sur la protection de la jeunesse, toute information indiquant de l'abus physique ou sexuel devra être divulguée à l'Office de la Protection de la Jeunesse.

Je comprends aussi que je suis libre de cesser notre participation à n'importe quel moment. Comme le projet "L'individu dans son milieu" est à long terme, je comprends que je pourrais être appelé(e) dans l'avenir pour participer à d'autres étapes de ce projet. Je me réserve le droit de décider, à ce moment, de donner suite ou non à la demande de participation.

Signature:_____

Nom:_____ Date:_____

Assistant(e) de recherche:_____

Appendix F

List of Sample Commands

1. Stand up please - Lève-toi s'il-te-plaît

2. Sit down on the floor please - Assieds-toi par terre s'il-te-plaît

3. Clap your hands - Tape des mains

4. Pick up the (object) please - Ramasse le/la (object) s'il-te-plaît

5. Give/pass Mommy the (one of the toys/object) please - Donne/apporte le/la (un des jouets/objet) à Maman s'il-te-plaît

6. Come sit beside me please - Viens t'asseoir près de moi s'il-te-plaît

7. Put (one of the toys) in the box/bag - Mets (un des jouets) dans la boîte/le sac

8. Put (one of the toys) on the _____ - Mets (un des jouets) sur la

9. Show me your (body part) - Montre-moi ta/ton (partie du corps)

10. Touch the dolly's (body part) - Touche la/le (partie du corps) de la poupée

11. Let's look at the book - Regardons le livre ensemble

12. Turn the pages of the book - Tourne les pages du livre

13. Bring the Kleenex box on the blanket - Apporte la boîte de Kleenex sur la couverture

14. Bring Mommy a Kleenex/tissue please - Apporte un Kleenex/papier-mouchoir à Maman s'il-te-plaît

15. Comb the dolly's hair - Peigne les cheveux de la poupée

16. Feed the dolly - Fais manger la poupée

17. Comb Mommy's hair please - Peigne les cheveux de Maman s'il-te-plaît

18. Take off your shoes please - Enlève tes souliers s'il-te-plaît

19. Put your shoes on please - Mets tes souliers s'il-te-plaît

Appendix G

Request/Compliance Coding Scheme

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

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

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

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

CODING OF REQUEST/COMPLIANCE SEQUENCES

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

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

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

The time and quality of each maternal request are recorded. As well, the mother's request is transcribed in the "Description of Request" box. The quality of each child behaviour in response to a maternal request (i.e. compliance or noncompliance) is coded as well, and the child's behaviour is described in the description of child behaviour box. It is recommended that the tapes be watched at maximum volume on a monitor with high resolution (not a regular TV).

I. Maternal Codes

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

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

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

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

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

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

After the mother has made a request, she may want to repeat it. Each repetition is coded as a *separate* request. A repetition does not need to use the exact same words as the initial request. A repetition is simply a request that prompts the child to complete the same action as the request immediately prior to it. It is helpful to examine the content and structure of the sentence in order to determine whether it is a repetition. A repetition must occur less than 10 seconds after the initial request (or the previous repetition).

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

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

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

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

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

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

a) ***Negotiation.*** This code refers to a subtle type of request in which the mother attempts to take the child's wishes into consideration. In other words, the mother is requesting compliance *in exchange* for what the child wants. Such phrases are often in the conditional form, i.e. if _____ , then _____ . For example, a mother might say, "*First you do something for me, then I'll do something for you*", instead of "*Can you do something for me*?" (guidance), or "*Do something for me*" (control).

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

For example:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Sometimes, mothers will issue a command that ends in an adverb in order to tell the child *how* to do something, e.g. "*Regardes bien*", or "*Fais-le doucement*". These statements are coded as ***control***, however, if the child's compliance/ noncompliance is not clearly observable, then the child's behaviour is assigned a ***no code*** (see section II.1.f.vi). Keep in mind that, sometimes, the child's

behaviour in response to these requests is observable, and merits the appropriate compliance/ noncompliance code.

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

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

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

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

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

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

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

II. Child Codes

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

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

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

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

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

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

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

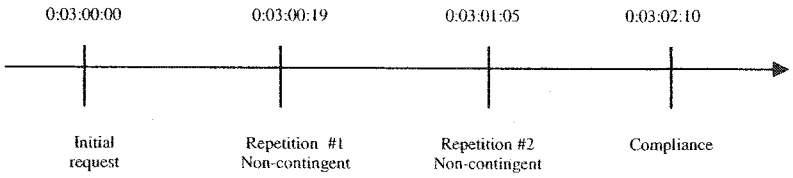
appear as a stalling technique, for example, if the child says "*oui*", but doesn't actually do what the mother requested.

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

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

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

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



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

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

Another example is when the mother makes a multi-step request such as, "*Feed the baby.*" The child begins to gather the spoon, bowl, etc. so his behaviour is coded as ***Compliance***. Even though the child has already begun to comply, the mother then repeats her request. Her request is coded as a non-contingent repetition because the child is already in the process of complying to the initial request. The child's behaviour following the repetition is assigned an ***in progress*** code.

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

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

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

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

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

Appendix H

ANOVA Summary Tables

Table H-1

Analysis of Variance for the Rate of Maternal Requests

Source	*df*		*F*
Between subjects			
Age (A)	1		9.34**
Gender (G)	1		2.80[t]
A x G	1		0.04
Error	70	(12.36)	
Within subjects			
Play Context (C)	1.82		121.39***
C x A	1.82		.81
C x G	1.82		2.32
C x A x G	1.82		.43
Error (C)	127.23	(6.50)	

Note. Values enclosed in parentheses represent mean square errors.

* $p < .05$
** $p < .01$
*** $p < .001$
[t] $p < .1$

Table H-2

Analysis of Variance for the Frequency of Maternal Requests

Source	*df*		*F*
Between subjects			
Age (A)	1		0.001
Gender (G)	1		0.001
A x G	1		1.98
Error	70	(.003)	
Within subjects			
Play Context (C)	1		1.98
C x A	1		.001
C x G	1		.001
C x A x G	1		1.98
Error (C)	70	(.006)	
Request Strategy (R)	1.21		353.96***
R x A	1.21		.61
R x G	1.21		.93
R x A x G	1.21		.37
Error (R)	84.52	(.09)	
C x R	2.2		1.42
C x R x A	2.2		.77
C x R x G	2.2		.46
C x R x A x G	2.2		.31
Error (C x R)	153.99	(.08)	

Note. Values enclosed in parentheses represent mean square errors.

* $p < .05$
** $p < .01$
*** $p < .001$
^{t} $p < .1$

Table H-3

Analysis of Variance for the Frequency of Maternal Repeated Requests

Source	*df*		*F*
Between subjects			
Age (A)	1		4.53*
Gender (G)	1		1.5
A x G	1		2.93^{t}
Error	70	(.01)	
Within subjects			
Play Context (C)	1.93		38.13***
C x A	1.93		2.33
C x G	1.93		.42
C x A x G	1.93		1.07
Error (C)	134.96	(.005)	
Request Strategy (R)	1.44		116.41***
R x A	1.44		1.33
R x G	1.44		.22
R x A x G	1.44		2.61^{t}
Error (R)	100.75	(.01)	
C x R	2.86		8.25***
C x R x A	2.86		.57
C x R x G	2.86		1.03
C x R x A x G	2.86		.03
Error (C x R)	199.91	(.01)	

Note. Values enclosed in parentheses represent mean square errors.

* $p < .05$
** $p < .01$
*** $p < .001$
^{t} $p < .1$

Table H-4

Analysis of Variance for the Frequency of Child Compliance with Maternal Requests

Source	*df*		*F*
Between subjects			
Age (A)	1		2.80^{t}
Gender (G)	1		2.79^{t}
A x G	1		.04
Error	70	(.03)	
Within subjects			
Play Context (C)	1.58		19.82***
C x A	1.58		.80
C x G	1.58		.70
C x A x G	1.58		.16
Error (C)	110.79	(.03)	
Request Strategy (R)	1		58.14***
R x A	1		3.10
R x G	1		.43
R x A x G	1		0.004
Error (R)	70	(.07)	
C x R	1.82		.61
C x R x A	1.82		.14
C x R x G	1.82		1.82
C x R x A x G	1.82		.59
Error (C x R)	127.33	(.07)	

Note. Values enclosed in parentheses represent mean square errors.

* $p < .05$
** $p < .01$
*** $p < .001$
^{t} $p < .1$

Table H-5

Analysis of Variance for the Frequency of Noncompliant Responses to Maternal Requests

Source	*df*		*F*
Between subjects			
Age (A)	1		1.95
Gender (G)	1		3.52
A x G	1		.01
Error	70	(.007)	
Within subjects			
Play Context (C)	1.69		21.28***
C x A	1.69		1.04
C x G	1.69		.40
C x A x G	1.69		.09
Error (C)	118.42	(.006)	
Request Strategy (R)	1.44		72.17***
R x A	1.44		.41
R x G	1.44		1.01
R x A x G	1.44		1.12
Error (R)	100.56	(.01)	
Noncompliance Strategy (N)	1.64		91.24***
N x A	1.64		6.14**
N x G	1.64		1.45
N x A x G	1.64		.47
Error (N)	114.54	(.008)	

Note. Values enclosed in parentheses represent mean square errors.

* $p < .05$
** $p < .01$
*** $p < .001$
^{t} $p < .1$

Table H-5, continued

Source	*df*		*F*
C x R	2.31		9.48***
C x R x A	2.31		.50
C x R x G	2.31		.48
C x R x A x G	2.31		.16
Error (C x R)	161.62	(.01)	
C x N	2.79		8.90**
C x N x A	2.79		.48
C x N x G	2.79		.27
C x N x A x G	2.79		.24
Error (C x N)	195.03	(.006)	
R x N	2.99		47.06***
R x N x A	2.99		3.66*
R x N x G	2.99		1.27
R x N x A x G	2.99		.32
Error (R x N)	209.57	(.007)	
C x R x N	3.95		3.82**
C x R x N x A	3.95		1.26
C x R x N x G	3.95		2.26
C x R x N x A x G	3.95		1.14
Error (C x R x N)	276.14		

Note. Values enclosed in parentheses represent mean square errors.

* $p < .05$
** $p < .01$
*** $p < .001$
^{t} $p < .1$

Appendix I

Intercorrelations among the Variables Examined in the Regression Analyses

Table I-1

Intercorrelations among the Variables Examined in the Regression Analyses

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
1. Child age		-.06	.02	.10	-.03	.11	-.12	.18	-.25*	-.28*	-.07	.19	-.29*	.15	.34**	-.45***	-.20
2. Child gender			.11	.12	-.09	.11	-.02	.13	-.29*	-.13	-.10	.12	-.24*	.19	.09	-.12	-.17
3. Maternal education				-.22	-.16	-.09	.14	-.14	-.08	.20	.09	-.13	-.15	.14	-.13	-.03	.01
4. Maternal aggression					-.07	.48***	-.07	.10	.03	.20	.09	.08	.13	.07	.16	-.13	-.07
5. Maternal social withdrawal						.18	-.09	-.06	.30**	.42***	.26*	-.03	.43***	-.33**	-.19	.22	.19
6. Aggression by withdrawal							-.11	.09	.08	.12	-.05	.08	.06	.02	.02	-.05	.03
7. Guidance requests								-.87***	-.20	-.23*	-.34**	-.92***	-.20	.11	-.002	.06	-.03
8. Control requests									-.13	.12	.29*	.98***	-.03	.12	.13	-.10	-.17
9. Physical interventions										.44***	.25*	-.12	.74***	-.37***	-.30**	.25*	.62***
10. Repeated requests											.64***	.13	.88***	-.57***	-.21	.42***	.16
11. No opportunity requests												.34**	.74***	-.32**	-.11	.06	.12
12. Positive request strategies													.00	.07	.11	-.13	-.17
13. Negative request strategies														-.56***	-.29*	.34**	.41***
14. Compliance															.08	-.31**	-.16
15. Self-assertion																-.71***	-.28*
16. Passive noncompliance																	.06
17. Defiance																	

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

Appendix J

Nonsignificant Regression Analyses

Table J-1

Maternal Childhood Levels of Agression and Withdrawal and Average Levels of Guidance Requests (N=74)

Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				.01	.48
Childhood Aggression	-.08	-.08	-.64		
Childhood Withdrawal	-.09	-.09	-.79		
Step 2				.01	.92
Childhood Aggression	-.05	-.05	-.40		
Childhood Withdrawal	-.07	-.07	-.61		
Maternal Education	.12	.11	.96		
Step 3				.02	.56
Childhood Aggression	-.03	-.03	-.23		
Childhood Withdrawal	-.08	-.08	-.64		
Maternal Education	.13	.12	1.03		
Child Age	-.12	-.12	-1.02		
Child Gender	-.04	-.04	-.35		
Step 4				.004	.31
Childhood Aggression	.01	.01	.07		
Childhood Withdrawal	-.06	-.06	-.46		
Maternal Education	.13	.13	1.06		
Child Age	-.12	-.12	-.97		
Child Gender	-.04	-.04	-.31		
Childhood Aggression x Withdrawal	-.08	-.07	-.56		
	R = .22		R^2_{Adj} = -.04		F = .54

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

Table J-2

Maternal Childhood Levels of Agression and Withdrawal and Average Levels of Control Requests (N=74)

Variables	Beta	sr^2	t	R^2_{ch}	F_{ch}
Step 1				.01	.44
Childhood Aggression	.09	.09	.79		
Childhood Withdrawal	-.05	-.05	-.44		
Step 2				.02	1.26
Childhood Aggression	.06	.06	.51		
Childhood Withdrawal	-.08	-.07	-.63		
Maternal Education	-.14	-.13	-1.12		
Step 3				.05	1.91
Childhood Aggression	.02	.02	.16		
Childhood Withdrawal	-.06	-.06	-.54		
Maternal Education	-.17	-.16	-1.35		
Child Age	.19	.19	1.61		
Child Gender	.15	.15	1.25		
Step 4				.002	.18
Childhood Aggression	-.01	-.01	-.07		
Childhood Withdrawal	-.08	-.07	-.63		
Maternal Education	-.17	-.16	-1.37		
Child Age	.18	.18	1.56		
Child Gender	.14	.14	1.20		
Childhood Aggression x Withdrawal	.06	.05	.42		
	R = .29		R^2_{Adj} = .002		F = 1.02

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